OREGON
State System of Higher Education
BULLETIN

Oregon State Agricultural College Catalog 1934-35

Corvallis, Oregon

Oregon State Agricultural College

CATALOG

1934-35

Corvallis, Oregon

Oregon State System of Higher Education

BULLETIN

Issued Monthly

No. 25 **July, 1934**

Entered as second-class matter, Dec. 24, 1932, at the postoffice at Eugene, Oregon, under Act of August 24, 1912, with points of additional entry at Ashland, Corvallis, La Grande and Monmouth.

Published by

Oregon State Board of Higher Education

TABLE OF CONTENTS

TABLE OF CONTENTS—*Continued*

State Board of Higher Education

	Term expires
E. C. Sammons, Portland	1935
Leif S. Finseth, Dallas	1936
B. F. Irvine, Portland	1937
Willard L. Marks, Albany	1938
Herman Oliver, John Day	1939
Cornelia Marvin Pierce, LaGrande	1940
F. E. Callister, Albany	1941
G. B. McLeod, Portland	1942
Charles A. Brand, Roseburg	1943

OFFICERS

Willard L. Marks	President
Charles A. Brand	Vice-President
B. F. Irvine	Treasurer

EXECUTIVE COMMITTEE

Willard L. Marks

Charles A. Brand

E. C. Sammons

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 comprising the state system of higher education include the University of Oregon at Eugene, Oregon State Agricultural College at Corvallis, the University of Oregon Medical School at Portland, the Oregon Normal School at Monmouth, the Southern Oregon Normal School at Ashland, and the Eastern Oregon Normal School at La Grande.

Except at the Medical School, which is on a graduate basis, each institution provides the general and disciplinary studies essential to a well-rounded education. At all the three normal schools these general studies are combined with teacher training in two-year professional curricula, with special provision at the Southern and the Eastern Oregon normal schools for junior college privileges. At both the University and the State College the Lower Division provides two years of unspecialized work in liberal arts and sciences.

Beyond the lower division level the work of the two institutions is distinctly differentiated. At the University are centered the advanced work in the arts, letters, and social sciences, and the professional schools most closely related to these fundamental fields of knowledge. At the State College are centered the advanced work in the physical and biological sciences and the technical and professional schools resting essentially on these natural sciences.

The instruction thus developed, as shown in the following insert, comprises three classes: (1) non-professional training in the arts and sciences; (2) professional and technical training; (3) preparation for teaching.

University of Oregon, Eugene
University of Oregon Medical School, Portland
Eastern Oregon Normal School, La Grande

THE

LIBERAL ARTS AND SCIENCES

LOWER DIVISION AT BOTH UNIVERSITY AND STATE COLLEGE (Junior Certificate)

Freshman and sophomore work in Liberal Arts and Sciences (Language and Literature, Science, and Social Science) is offered on essentially the same basis at both the University and the State College. (*See also* Junior College Work at Normal Schools.)

UPPER DIVISION AT THE UNIVERSITY

College of Arts and Letters (B.A., M.A., Ph.D. degrees)

Major curricula in English Language and Literature (including Drama), German, Greek, Latin, and Romance Languages.

College of Social Science (B.A., B.S., M.A., M.S., Ph.D. degrees)

Major curricula in General Social Science and in the special sciences of Economics, Geography, History, Philosophy, Political Science, Psychology, and Sociology.

UPPER DIVISION AT THE STATE COLLEGE

School of Science (B.A., B.S., M.A., M.S., Ph.D. degrees)

Major curricula in General Science and in the special sciences of Bacteriology, Botany, Chemistry, Entomology, Geology, Mathematics, Physics, and Zoology.

Freshman and sophomore
is offered on essentially the sam
enter the major school without l

LOWER AND UPPER

School of Architecture a
M.A., M.S., M.Ar

Architectural Design, Lands
Sculpture, General Art, Applied
a joint curriculum with Enginee

School of Business Adn
M.B.A. degrees)

Accounting, Advertising, Fi
agement and Personnel Mana
Education; combination curricul

School of Education (B.
grees)

General Education Courses
ricula preparing for teaching of
tion, the Social Sciences, Busine
The School of Education operat

School of Journalism (B.
Journalism including advert

School of Law (B.A., B.S.
A Law curriculum of three
LL.B. degree; a major curricul
(six years in all) leading to B.A.
istration and Law or Social Scie

School of Music (B.A., B.
Music Appreciation, Theory

School of Physical Educa
Physical Education curricu
part-time teachers of physical ed

GRADUATE DIVISION

Oregon State System of Higher Education

Graduate study leading to advanced degrees has been centralized by curricula or major subjects as follows

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

At the University—
Arts and letters, the social sciences, and the
fields of architecture and allied arts, busines
tion, education, journalism, law, music,
education.

Where the Ph.D. degree is listed, it is in some cases offered in certain fields only.

In certain fields graduate work may be carried on at the Medical School in Portland or at the Portlan
Center, leading to degrees through the Graduate Division in the State College or the University according to the n

OREGON STATE SYSTEM OF HIGHER EDUCATIO

PROFESSIONAL AND TECHNICAL CURRICULA

LOWER DIVISION AT BOTH UNIVERSITY AND STATE COLLEGE (Junior Certificate)

work in the professional fields of Architecture and Allied Arts, Business Administration, Home Economics, Journalism, Music, a
ne basis at both the University and the State College, permitting the student to pursue the work at either institution up to the ju
loss of time or credit. It is recommended, however, that the student pursue his lower division work at the institution where the r

DIVISION AT THE UNIVERSITY

and Allied Arts (B.A., B.S., B.Arch., B.L.A., rch., M.F.A., M.L.A. degrees)

scape Architecture (with one year at Corvallis), Painting, l Design, Normal Art; Structural Design in Architecture, ering.

ninistration (B.A., B.S., B.B.A., M.A., M.S.,

inance, Foreign Trade, General Business, Industrial Man- gement, Labor Management; Business Administration lum in Business Administration and Law.

A., B.S., M.A., M.S., M.Ed., D.Ed., Ph.D. de-

and training for educational administrators. Major cur- Literature, Languages, Arts and Music, Physical Educa- ss Administration and approved combinations of subjects. tes jointly at both the University and the State College.

A., B.S., M.A., M.S. degrees)

tising and publishing.

., LL.B., J.D. degrees)

years above lower division (five years in all) leading to um of three years following three-year general curriculum and J.D. degrees; combined curricula in Business Admin- nce and Law comprising six years, leading to J.D. degree.

S., B.M., B.M.Ed., M.A., M.S., M.F.A. degrees)

y and Composition, Applied Music.

tion (B.A., B.S., B.P.E., M.A., M.S. degrees)

ulum preparing specialists. Major and minor norms for ducation and coaches.

LOWER AND UPPER DIVISION AT THE STA

School of Agriculture (B.S., M.S., Ph.D. degrees)

Animal Industries (Animal, Dairy, and Poultry Husbandry, Agricultural Economics including Farm Management; Plant In Horticulture, Landscape Maintenance, Pomology, Vegetable Cr cultural Education; Agricultural Engineering; Horticultural Technology.

School of Education (B.A., B.S., M.A., M.S. degrees)

Major curricula preparing for teaching of Biological and Ph matics, Agriculture, Home Economics, Industrial Arts, and app subjects; educational and vocational guidance, secretarial scienc part-time physical education teaching and coaching. The School jointly at both the University and the State College.

School of Engineering and Industrial Arts (B.S., M.

Chemical Engineering and Industrial Chemistry, Civil Eng riculum, Highway option), Electrical Engineering (Power and Co Mechanical Engineering (General curriculum, Aeronautical op Education, Industrial Administration. Major curriculum in Stru tecture, a joint curriculum with Architecture and Allied Arts.

School of Forestry (B.S., M.S. degrees)

Logging Engineering, Technical Forestry, and Wood Produc

School of Home Economics (B.A., B.S., M.A., M.S.

Clothing, Textiles, and Related Arts; Foods and Nutrition; tion; Institution Economics; and Home Economics Education.

School of Pharmacy (B.S., M.S. degrees)

Pharmacy, including Pharmaceutical Analysis, Pharmacolog preparation for certification as registered pharmacist.

Secretarial Science (B.S.S. degree)

Stenography, typewriting, office methods.

:

e professional
ss administra-
and physical

nd Extension
major subject.

AT THE UNIVERSITY OF OREGON MEDICAL SCHOOL

Medicine (M.D. degree)

The regular curriculum is four years of professional training following a three-year preparatory medical curriculum offered at either *Corvallis* (third-year emphasis on natural science) or *Eugene* (third-year emphasis on arts and letters or social science).

Nursing Education (B.A., B.S. degrees)

Two years preliminary training at either the State College or the University.

Public Health Nursing

The General Ex
Oregon, Oregon Sta
formal instruction in
vice, radio, and soci

Corre
Munic

The Federal Co
nated with the work

N

Oregon State Agricultural College, Corvallis
Oregon Normal School, Monmouth
Southern Oregon Normal School, Ashland

and Physical Education
nior year, when he may
major school is located.

ATE COLLEGE

, Veterinary Medicine),
ndustries (Farm Crops,
rops, and Soils); Agri-
Products; Agricultural

)
ysical Sciences, Mathe-
proved combinations of
e. Minor preparing for
l of Education operates

S. degrees)
gineering (General cur-
ommunications options),
ption), Industrial Arts
ctural Design in Archi-

ts.

degrees)
Household Administra-

y, and Pharmacognosy;

Elementary Teacher Training

AT OREGON NORMAL SCHOOL

SOUTHERN OREGON NORMAL SCHOOL

EASTERN OREGON NORMAL SCHOOL

A two-year combined academic and professional curriculum is offered on essentially the same basis at all three normal schools leading to the State Normal School Diploma, entitling graduates to teach in elementary schools. The curriculum comprises:

(1) Training in the subjects to be taught and the effective teaching of those subjects.

(2) Broad general education for the prospective teacher as individual and citizen.

Junior College Work (Junior Certificate)

AT SOUTHERN OREGON NORMAL SCHOOL

EASTERN OREGON NORMAL SCHOOL

Junior college work in Liberal Arts and Sciences (Language and Literature, Science, and Social Science) within the limits of the normal school curriculum is offered on essentially the same basis at both the Southern Oregon and the Eastern Oregon Normal Schools. Students are thereby enabled to complete requirements for admission to upper division standing in liberal arts and sciences at the State College or the University. (*See also* Lower Division at Both University and State College.)

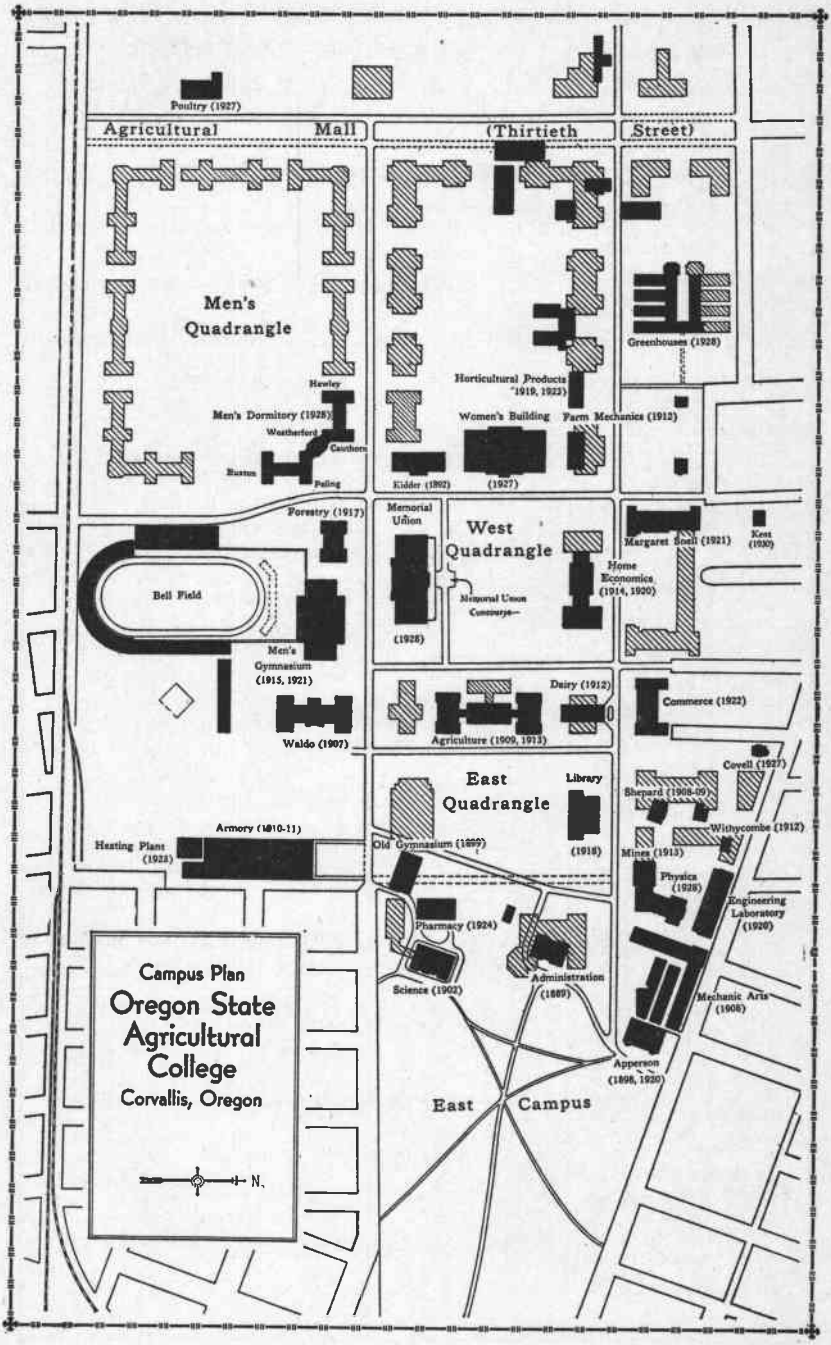
General Extension Division

Oregon State System of Higher Education

xtension Division of the Oregon State System of Higher Education is that agency of the University of te Agricultural College, and the three Oregon Normal Schools which serves the people of the state with extension classes, correspondence study, and adult education through visual instruction, municipal ser- ial welfare. Its work is organized into the following departments:

spondence Study
cipal Service
Portland Extension Center
Radio
Social Welfare
Statewide Extension Classes
Visual Instruction

operative Extension Service in agriculture and home economics of the State College is closely coordi- of the General Extension Division.


Poultry (1927)
Agricultural Mall
(Thirtieth Street)
Men's Quadrangle
Hawley
Men's Dormitory (1928)
Weatherford
Cauthorn
Buxton
Poling
Greenhouses (1928)
Horticultural Products (1919, 1923)
Women's Building
Farm Mechanics (1912)
Kidder (1892)
(1927)
Forestry (1917)
Memorial Union
West Quadrangle
Margaret Snell (1921)
Kent (1930)
Home Economics (1914, 1920)
Bell Field
Memorial Union Concourse
(1928)
Men's Gymnasium (1915, 1921)
Dairy (1912)
Commerce (1922)
Agriculture (1909, 1913)
Waldo (1907)
Covell (1927)
East Quadrangle
Library
Shepard (1908-09)
Armory (1910-11)
Withycombe (1912)
Heating Plant (1928)
Old Gymnasium (1899)
(1918)
Mines (1913)
Physics (1928)
Engineering Laboratory (1920)
Pharmacy (1924)
Campus Plan
Oregon State Agricultural College
Corvallis, Oregon
Science (1902)
Administration (1889)
Mechanic Arts (1908)
Apperson (1898, 1920)
East Campus
N.

1934

June

S	M	T	W	T	F	S
....	....	....	....	....	1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

July

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31	....	....	....	....

August

S	M	T	W	T	F	S
....	....	....	1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	....

September

S	M	T	W	T	F	S
....	....	....	....	....	....	1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	....	....	....	....	....	....

October

S	M	T	W	T	F	S
....	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31	....	....	....

November

S	M	T	W	T	F	S
....	....	....	....	1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	....

December

S	M	T	W	T	F	S
....	....	....	....	....	....	1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31	....	....	....	....	....

ACADEMIC CALENDAR

1934 Summer Session

June 18, *Monday*.....Summer session begins

July 4, *Wednesday*....Independence Day, holiday

July 27, *Friday*.....Summer session ends

THE ACADEMIC YEAR. *From its inception in 1858-1868 except for a period of about ten years prior to 1918, the State College has divided the academic year into three terms, each approximately twelve weeks in length. The summer session of six weeks supplements the regular session.*

First Term 1934-35

September 24-29, inc., *Monday* to *Saturday*....Freshman Week and Registration

October 1, *Monday*.....Classes begin

October 13, *Saturday*....Latest day for addition of new courses or new registrations

November 29, *Thursday*.....Thanksgiving Day, holiday

December 15, *Saturday*.....Classes end

December 17-21, inc., *Monday* to *Friday*.....Final examinations

December 22, *Saturday*.....First term ends

SIXTY-SEVENTH YEAR

Second Term 1934-35

January 2, *Wednesday*.....Registration

January 3, *Thursday*.....Classes begin

January 12, *Saturday*....Latest day for addition of new courses or new registrations

March 13, *Wednesday*.....Classes end

March 14-19, inc., *Thursday* to *Tuesday*.....Final examinations

March 20, *Wednesday*.....Second term ends

Third Term 1934-35

March 25, *Monday*.....Registration

March 26, *Tuesday*.....Classes begin

April 6, *Saturday*.....Latest day for addition of new courses or new registrations

May 30, *Thursday*.....Memorial Day, holiday

June 1, *Saturday*.....Classes end

June 1, *Saturday*.....Alumni Day

June 2, *Sunday*.....Baccalaureate Service

June 3, *Monday*.....Sixty-sixth Annual Commencement

June 3-7, inc., *Monday* to *Friday*.....Final Examinations

June 8, *Saturday*.....Third term ends

1935 Summer Session

June 24, *Monday*.....Summer session begins

1 9 3 5

January

S	M	T	W	T	F	S
....	....	1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31	....	....

February

S	M	T	W	T	F	S
....	....	....	....	....	1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	....	....

March

S	M	T	W	T	F	S
....	....	....	....	....	1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31	....	....	....	....	....	....

April

S	M	T	W	T	F	S
....	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	....	....	....	....

May

S	M	T	W	T	F	S
....	....	....	1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	....

June

S	M	T	W	T	F	S
....	....	....	....	....	....	1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	....	....	....	....	....	....

July

S	M	T	W	T	F	S
....	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31	....	....	....

Oregon State System of Higher Education

Executive Officers

WILLIAM JASPER KERR, D.Sc., LL.D. ..... Chancellor

Southern Oregon Normal School—Ashland
WALTER REDFORD, Ph.D. ..... President

Oregon State Agricultural College—Corvallis
GEORGE WILCOX PEAVY, M.S.F. ..... President

University of Oregon—Eugene
CLARENCE VALENTINE BOYER, Ph.D. ..... President

Eastern Oregon Normal School—La Grande
HARVEY EDGAR INLOW, LL.B., M.A. ..... President

Oregon Normal School—Monmouth
JULIUS ALONZO CHURCHILL, M.A. ..... President

Oregon Medical School—Portland
RICHARD BENJAMIN DILLEHUNT, M.D. ..... Dean

Deans and Directors

WILLIAM ALFRED SCHOENFELD, M.B.A. ..... Dean and Director of Agriculture

ELLIS FULLER LAWRENCE, M.S., F.A.I.A. ..... Dean and Director of Architecture and Allied Arts

CLARENCE VALENTINE BOYER, Ph.D. ..... Dean and Director of Arts and Letters

HARRISON VAL HOYT, Ph.D. ..... Dean and Director of Business Administration

HERBERT ARNOLD BORK, B.A., C.P.A. ..... Comptroller

GENEVIEVE GRIFFITH TURNIPSEED, M.A. ..... Director of Dormitories

JAMES RALPH JEWELL, Ph.D., LL.D. ..... Dean of Education; Director of High School Teacher Training

JULIUS ALONZO CHURCHILL, M.A. ..... Director of Elementary Teacher Training

RICHARD HAROLD DEARBORN, A.B., E.E. ..... Acting Dean and Director of Engineering and Industrial Arts

GEORGE WILCOX PEAVY, M.S.F. ..... Dean and Director of Forestry

ALFRED POWERS, A.B. ..... Dean and Director of General Extension

GEORGE REBEC, Ph.D. ..... Dean and Director of Graduate Division

AVA BERTHA MILAM, M.A. ..... Dean and Director of Home Economics

CHARLES DAVID BYRNE, M.S. ..... Director of Information

ERIC WILLIAM ALLEN, A.B. ..... Dean and Director of Journalism

WAYNE LYMAN MORSE, LL.B., J.D. ..... Dean and Director of Law

LUCY MAY LEWIS, A.B., B.L.S. ..... Director of Libraries

MAHLON ELLWOOD SMITH, Ph.D. ..... Dean and Director of Lower Division

RICHARD BENJAMIN DILLEHUNT, M.D. ..... Dean and Director of Medicine; Director of Health Services

JOHN JACOB LANDSBURY, Mus.D. ..... Dean and Director of Music

ADOLPH ZIEFLE, Phar.D. ..... Dean and Director of Pharmacy

JOHN FREEMAN BOVARD, Ph.D. ..... Dean and Director of Physical Education

EARL LEROY PACKARD, Ph.D. ..... Dean and Director of Science

JAMES HENRY GILBERT, Ph.D. ..... Dean and Director of Social Science

---

Each dean and director in the foregoing list is interinstitutional in function, being the Chancellor's principal adviser in his respective field. Deans and directors whose responsibilities are for the State College only are listed under State College officers of administration.

Service Division Officers

OFFICE OF THE CHANCELLOR

CHARLES DAVID BYRNE, M.S.....Assistant to the Chancellor; Acting Secretary, State Board of Higher Education
RICHARD LYLE COLLINS, B.B.A., C.P.A.....Statistician and Budget Officer
MARY BOWMAN HULL.....Secretary to the Chancellor
ALINE ESTHER JOHNSON..Assistant Secretary, State Board of Higher Education

BUSINESS OFFICES

HERBERT A. BORK, B.A., C.P.A.....Comptroller
ANDREW COMRIE.....Head of Accounting and Auditing
EDWIN MONROE SMITH, B.S.D.....Head of Purchases and Claims
HARRY BENJAMIN AULD, B.S.....Chief Claims Clerk
ARTHUR ALONZO BROOKS.....Chief Requisition Clerk
SAM ABRAHAM KOZER.....Auditor
SUELL HUBBARD RONDEAU.....Auditor
PAUL AUGUST WALGREN, B.S.A.....Assistant Accountant

DORMITORIES

GENEVIEVE GRIFFITH TURNIPSEED, M.A.....Director of Dormitories

HEALTH SERVICES

RICHARD BENJAMIN DILLEHUNT, M.D.....Director of Health Services
DANIEL CLYDE REYNOLDS, M.D.....Assistant Director of Health Services

DIVISION OF INFORMATION

CHARLES DAVID BYRNE, M.S.....Director of Information
EDWIN THOMAS REED, B.S., A.B.....Editor of Publications
MARY PAULINE BENNETT, B.S.....Secretary and Editorial Assistant

LIBRARIES

LUCY MAY LEWIS, A.B., B.L.S.....Director of Libraries
ELZIE VANCE HERBERT.....Head of Orders Department

Oregon State Agricultural College

Officers of Administration

WILLIAM JASPER KERR, D.Sc., LL.D. ..... Chancellor
GEORGE WILCOX PEAVY, M.S.F. ..... President
WILLIAM ARTHUR JENSEN, M.S. ..... Executive Secretary

WILLIAM ALFRED SCHOENFELD, M.B.A. ..... Dean and Director of Agriculture
COLONEL WILLIAM HENRY PATTERSON ..... Commandant
JAMES RALPH JEWELL, Ph.D., LL.D. ..... Dean of Education
RICHARD HAROLD DEARBORN, A.B., E.E. ..... Acting Dean of Engineering and Industrial Arts
GEORGE WILCOX PEAVY, M.S.F. ..... Dean of Forestry
GEORGE REBEC, Ph.D. ..... Dean of Graduate Division
AVA BERTHA MILAM, M.A. ..... Dean of Home Economics
LUCY MAY LEWIS, A.B., B.L.S. ..... Librarian
MAHLON ELLWOOD SMITH, Ph.D. ..... Dean of Lower Division; Dean of Lower Division and Service Departments
ULYSSES GRANT DUBACH, Ph.D. ..... Dean of Men
ADOLPH ZIEFLE, Phar.D. ..... Dean of Pharmacy
ERWIN BERTRAN LEMON, B.S. ..... Registrar
EARL LEROY PACKARD, Ph.D. ..... Dean of Science
HARRISON VAL HOYT, Ph.D. ..... Dean, In Charge of Secretarial Science
KATE WETZEL JAMESON, Ph.D. ..... Dean of Women

Service Divisions

OFFICE OF THE PRESIDENT

William Arthur Jensen, M.S. ..... Executive Secretary
Hazel Kelsey Westcott, B.S. ..... Secretary

BUSINESS OFFICE

Edwin Monroe Smith, B.S.D. ..... Business Manager
Harry Benjamin Auld, B.S. ..... Chief Claims Clerk
Arthur Alonzo Brooks ..... Chief Requisition Clerk
Mae Josephine Nusbaum ..... Salary Clerk
Ruth Wagner ..... Cashier

DORMITORIES

Melissa Hunter, A.M. ..... Director of Dormitories
Georgia Chapman Bibee, B.S. ..... Director, Memorial Union Dining Service

HEALTH SERVICE

Daniel Clyde Reynolds, M.D. ..... Director of Health Service
*Bernard Abraham Manace, M.D. ..... College Physician
Rachel Carleton Sparks, M.D. ..... College Physician
Erna Marguerite Plageman, R.N. ..... Supervising Nurse
Mabel Ruth Darelius, R.N. ..... Nurse
Mae Reisner, R.N. ..... Nurse
Nelle Mary Gunn ..... X-Ray Technician

DIVISION OF INFORMATION

Edwin Thomas Reed, B.S., A.B. ..... Editor of Publications
Delmer Morrison Goode, B.A. ..... Associate Editor of Publications
John Cole Burtner, B.S. ..... Associate in News Service
Laura Belle Heath, B.S. ..... Assistant Editor of Publications
Fred Muriel Shideler, B.S. ..... Assistant in News Service
Ethel E Allen, B.S. ..... Assistant Editor of Publications

LIBRARY

Lucy May Lewis, A.B., B.L.S. ..... Librarian
Lucia Haley, A.B. ..... Assistant Librarian
Elizabeth Prophet Ritchie, A.B., B.L.S. ..... Head Cataloger
Bertha Emma Herse, B.S., B.L.S. ..... Reference Librarian
Elzie Vance Herbert ..... Head of Orders Department
Lenna Anne Guthrie, A.B., B.S. ..... Loan Librarian
Marie Hull Jackson, B.A., B.S. in L.S. ..... Senior Continuations Cataloger
Nellie Regina Harvey, B.S. in L.S. ..... Senior Document Assistant
Katherine Whipple Hughes, B.S. in L.S. ..... Senior Reference Assistant
Harriet Janet Warner, A.B. ..... Senior Reference Assistant
Josephine Helen Halverson, A.B. ..... Senior Catalog Assistant
Constance Beall ..... Senior Circulation Assistant

*On leave of absence 1933-34.

RUTH COLE, B.S. in L.S. ..... Junior Circulation Assistant
VESTA BERNICE BECKLEY, B.S. ..... Reserve Assistant
ANN MESSICK, B.S. ..... Junior Assistant, Circulation Department
LEWAN ADEL HENDRICKSEN, B.S. ..... Order Clerk
HELEN DREESEN STARR, B.S. ..... Periodical Clerk
CARRIE HELEN THORY ..... Secretary

PHYSICAL PLANT

MARK CLYDE PHILLIPS, B.M.E. ..... Superintendent of Physical Plant
ELMER POLIC JACKSON, B.S. ..... Superintendent of Buildings
ARTHUR LEE PECK, B.S., B.A. ..... Superintendent of Campus
GORDON VERNON SKELTON, C.E. ..... Superintendent of Surveys, Maps, Roads and Walks, and Fire Protection
DONALD BRUCE STUART, D.M.D. ..... Superintendent of Light and Power
CHARLES GEORGE WILTSHIRE ..... Superintendent of Plumbing and Steam Fitting

PRESSES AND MANIFOLDING SERVICE

PAUL VAN SCOYOC WOMER ..... Acting Superintendent, College Press
HELEN LUCILE HOLGATE, B.S. ..... In Charge of Clerical Exchange

REGISTRAR'S OFFICE

ERWIN BERTRAN LEMON, B.S. ..... Registrar
EVA BLACKWELL, B.S. ..... Assistant to the Registrar
BESS JACKSON MCCOY ..... Chief Clerk
HULDA CATHERINE BURCHELL, B.S. ..... Examiner
BELVA DIXON, B.S. ..... Statistician
MARGARET SHUPE ..... Recorder

STUDENT WELFARE, PERSONNEL AND PLACEMENT

ULYSSES GRANT DUBACH, Ph.D. ..... Dean of Men
KATE WETZEL JAMESON, Ph.D. ..... Dean of Women
CARL WALTER SALSER, Ed.M. ..... Head of Personnel and Placement Service
ERNEST WILLIAM WARRINGTON, M.A. ..... Director of Religious Education
CARL ALLEN LODELL, B.S. ..... General Manager of Student Activities
LORNA COLLAMORE JESSUP, B.S. ..... Assistant Dean of Women
CLYTIE MAY WORKINGER ..... Personnel and Placement Secretary
LULA M. HOWARD ..... Employment and Housing Secretary

ALUMNI ASSOCIATION

EDWARD CHRISTOPHER ALLWORTH, LL.D. ..... Secretary, Alumni Association; Manager and Secretary, Memorial Union
EUNICE ESTHER COURTRIGHT, B.S. ..... Records Clerk, Alumni Association

Part I

State College Staff

State College Staff*

GEORGE WILCOX PEAVY, M.S.F. ..... Administration
President; Dean of the School of Forestry

B.S. (1895), M.S.F. (1905), Michigan. Professor (1910—), Dean (1913—), President (1934—), Oregon State.

ORVILLE DANIEL ADAMS, M.S. ..... School of Education
Associate Professor of Trade and Industrial Education

B.S. (1932), M.S. (1932), Oregon State. Director of Vocational Education (1926—), State of Oregon; Associate Professor (1926—), Oregon State.

ARTHUR LEMUEL ALBERT, M.S. ..... School of Engineering
Associate Professor of Communication Engineering

B.S. (1923), M.S. (1926), Oregon State. Instructor (1923-29), Assistant Professor (1929-34), Associate Professor (1934—), Oregon State.

ETHEL E ALLEN, B.S. ..... Division of Information
Assistant Editor of Publications

B.S. (1916), Oregon State. Assistant in Library (1917-22), Assistant in Publications (1923-32), Assistant Editor (Assistant Professor) (1931—), Oregon State.

LEONARD JOHN ALLEN, M.S. ..... Federal Cooperative Extension
Assistant State 4-H Club Leader

B.S. (1914), M.S. (1915), Oregon State. Assistant State 4-H Club Leader (Associate Professor) (1915—), Oregon State.

IRA SHIMMIN ALLISON, Ph.D. ..... School of Science
Professor of Geology

A.B. (1917), Hanover College; Ph.D. (1924), Minnesota. Instructor (1920-25), Assistant Professor (1925-28), Minnesota; Professor (1928—), Oregon State.

WILLIAM BALLANTYNE ANDERSON, Ph.D. ..... School of Science
Professor of Physics

B.S. (1901), M.S. (1903), Ph.D. (1906), Wisconsin. Scholar (1903-04), Assistant (1904-05), Wisconsin; Associate Professor (1905-14), Iowa State; Professor (1914—), Oregon State.

BYRON ARNOLD, A.B. ..... Music
Instructor in Organ and Piano

A.B. (1924), Willamette. Instructor (1924—), Oregon State.

---

*State College academic and administrative officers on the Corvallis campus having the rank of instructor or above are arranged in alphabetical order with the exception of the President, who heads the list. The list has been compiled in general as of March, 1934, but personnel changes approved by the State Board of Higher Education on April 16, 1934, have been incorporated in so far as practicable.

Under each school or division the respective faculties or staffs are listed by departments in the order of seniority of appointment to present rank.

An index of names comprising the State College staff and interinstitutional officers of administration, research, and extension of the Oregon State System of Higher Education is printed at the back of the catalog.

WINFRED MCKENZIE ATWOOD, Ph.D. ..... School of Science
Professor of Plant Physiology

A.B. (1907), A.M. (1910), Cornell; M.S. (1911), Ph.D. (1913), Chicago. Instructor (1913-15), Associate Professor (1915-25), Professor (1925—), Oregon State.

LOUIS BACH, A.M. ..... Arts and Letters
Professor Emeritus of Modern Languages

A.M., University of Switzerland. Professor (1910-34), Professor Emeritus (1934—), Oregon State.

*FREDERICK GOTTLIEB BAENDER, M.M.E. ..... School of Engineering
Professor of Mechanical Engineering; Head of Department

B.S. in M.E. (1908), Iowa; M.M.E. (1916), Cornell. Assistant Professor (1908-10), Iowa; Department Head (1916-23), Arkansas; Professor and Department Head (1928—), Oregon State.

WILLIAM JENNINGS BAKER, M.S. ..... School of Forestry
Associate Professor of Wood Products; In Charge of Department

B.S. (1927), M.S. (1928), Oregon State. Assistant Professor (1930-32), Associate Professor (1932—), Oregon State.

LAURIN BURTON BALDWIN, A.M. ..... Arts and Letters
Assistant Professor of English

A.B. (1895), A.M. (1897), Philomath; A.B. (1925), California. Professor (1896-97), Hartsville College; Professor (1899-1903), Edwards College; Professor (1903-05), Philomath; Instructor (1906-14), Assistant Professor (1914-25), Instructor (1925-32), Assistant Professor (1932—), Oregon State.

FRANK LLEWELLYN BALLARD, B.S. ..... Federal Cooperative Extension
State County Agent Leader

B.S. (1916), Oregon State. County Agricultural Agent (1916-17), New Hampshire; Field Agent in Marketing (1917-18), Assistant County Agent Leader (1918-23), State County Agent Leader (Professor) (1923—), Oregon State.

ELIZABETH MARIA BARNES, B.L.I. ..... Arts and Letters
Associate Professor of Speech

B.L.I. (1925), Emerson College of Oratory. Instructor (1913-18), Idaho (Southern Branch); Instructor (1922-24), Assistant Professor (1924-27), Associate Professor (1927—), Oregon State.

†HOWARD PHILLIPS BARSS, S.M. ..... School of Science
Professor of Botany; Head of Department; Plant Pathologist, Agricultural Experiment Station

A.B. (1907), Rochester; S.M. (1909), Harvard. Austin Teaching Fellow (1909-10), Harvard; Instructor (1910-11), Assistant Professor (1911-12), Washington State; Assistant Professor (1912-14), Associate Professor (1914-15), Professor (Department Head) and Plant Pathologist (1915-34), Oregon State.

JAMES HERVEY BATCHELLER, B.S. (Min.E.) ..... School of Engineering
Professor of Mining Engineering; Head of Department

B.S. (Min. E.) (1900), Massachusetts Institute of Technology. Associate Professor (1919-28), Professor and Department Head (1928—), Oregon State.

JANET CONSTANCE BEALL, B.S. ..... Library
Senior Circulation Assistant, Library

B.S. (1931), Washington. Senior Circulation Assistant (1933—), Oregon State.

OLIVER KENNETH BEALS, B.S. ..... School of Education, School of Agriculture
Critic Teacher in Agricultural Education

B.S. (1923), Oregon State. Critic Teacher (1929—), Oregon State.

*On leave of absence.
†Resigned 1934.

HARRY LYNDEN BEARD, M.A.....School of Science; Department of Music
Assistant Professor of Mathematics; Professor of Music; Conductor of R.O.T.C. Band

B.S. (1899), Oregon State; M.A. (1929), California. Instructor (1905-18), Assistant Professor of Mathematics (1918-—), Professor of Music (1924-—), Conductor (1905—), Oregon State.

EDWARD BENJAMIN BEATY, M.A.....School of Science
Professor of Mathematics

B.S. (1903), Oregon State; M.A. (1916), California. Adviser of Freshmen (1916-27), Instructor (1908-12), Assistant Professor (1912-15), Associate Professor (1915-27), Professor (1927—), Oregon State.

VESTA BERNICE BECKLEY, B.S.....Library
Reserve Assistant, Library

B.S. (1930), Oregon State. Circulation Assistant (1930-32), Reserve Assistant (1932—), Oregon State.

EDITH LIDA BENEDICT, M.A.....School of Science
Instructor in Zoology

B.S. (1928), M.A. (1929), Northwestern. Instructor (1929—), Oregon State.

FREDERICK BERCHTOLD, Litt.D.....Arts and Letters
Professor Emeritus of English

B. in Ped. (1879), State Normal, Berne, Switzerland; A.B. (1899), A.M. (1910), National University; Litt.D. (1934), Oregon State. Faculty (1884—), Professor and Department Head (1900-32), Professor Emeritus (1932—), Oregon State.

RALPH STEPHEN BESSE, M.S.....School of Agriculture
Vice-Director of Agricultural Experiment Station

B.S.A. (1913), M.S. (1915), Missouri. Assistant in Farm Management (1913-15), Missouri; State Leader of County Agents (1915-18), Wyoming; Extension Specialist in Farm Management (1922-25), Associate Professor (Research) (1926-28), Assistant to Director, Agricultural Experiment Station (1929-31), Vice-Director (1932—), Oregon State.

JOHN ANDREW BEXELL, LL.D.....School of Commerce
Dean Emeritus of the School of Commerce

B.S. (1892), M.A. (1902), Augustana College; LL.D. (1932), Oregon State. Assistant Professor (1893-1903), Augustana College; Financial Secretary and Director of School of Commerce (1904-08), Utah Agricultural; Dean (1908-31), Dean Emeritus (1931—), Oregon State.

GEORGIA CHAPMAN BIBEE, B.S.....School of Home Economics
Assistant Professor of Institution Economics; Supervisor of Memorial Union Dining Service

B.S. (1925), Washington. Assistant Manager of University Commons (1925-26), Washington; Instructor (1926-30), Assistant Director of Dormitories (1926-29), Assistant Professor and Supervisor of Memorial Union Dining Service (1930—), Oregon State.

FLORENCE BLAZIER, Ph.D.....School of Education, School of Home Economics
Professor of Home Economics Education; Head of Department

Ph.B. (1918), Chicago; M.A. (1924), Indiana; Ph.D. (1932), Minnesota. Associate Professor (1918-20), Iowa State; Assistant Professor (1920-24), Indiana; Associate Professor (1924-25), Professor and Department Head (1925—), Oregon State.

WALTER BENO BOLLEN, Ph.D.....School of Science
Assistant Professor of Bacteriology; Assistant Bacteriologist, Agricultural Experiment Station

B.S. (1921), M.S. (1922), Oregon State; Ph.D. (1924), Iowa State. Research Fellow (1922-24), Iowa State; Assistant Chemist (1925-29), Idaho; Assistant Professor and Assistant Bacteriologist (1929—), Oregon State.

ERNEST EVERTON BOSWORTH, A.B., C.P.A. ..... Business Administration
Professor of Business Administration; In Charge of Department

A.B. (1893), Oberlin College; C.P.A. (1922), State of Oregon. Associate Professor (1926-29), Professor (1929—), Oregon State.

ARTHUR GEORGE BRISTOW BOUQUET, M.S. ..... School of Agriculture
Professor of Vegetable Crops; Horticulturist (Vegetable Crops), Agricultural Experiment Station

B.S. (1906), Oregon State; M.S. (1930), Cornell. Assistant in Research (1929-30), Cornell; Instructor (1909-11), Assistant Professor (1911-15), Associate Professor (1915-16), Professor and Horticulturist (1916—), Oregon State.

DOROTHY MAY BOURKE, B.A. ..... Architecture and Allied Arts
Instructor in Art

B.A. (1925), California School of Arts and Crafts. Instructor (1928—), Oregon State.

FLORENCE BOWDEN, B.A. ..... Music
Instructor in Cello, Violin, and Small Strings; Conductor of Mandolin and Guitar Club

B.A. (1915), Oregon. Instructor and Conductor (1911—), Oregon State.

WILLIAM PINGRY BOYNTON, Ph.D. ..... School of Science
Professor of Physics

A.B. (1890), A.M. (1893), Dartmouth; Ph.D. (1897), Clark. Professor (1890-93), Southern California; Graduate Assistant (1893-94), Dartmouth; Scholar and Fellow (1894-97), Clark; Instructor (1897-1901), California; Dean and Professor (1901-03), California College; Assistant Professor (1903-06), Professor and Department Head (1906-32), Oregon; Professor (1932—), Oregon State.

VERA HASKELL BRANDON, M.S. ..... School of Home Economics
Assistant Professor of Household Administration

B.S. (1911), B.S. (1927), M.S. (1929), Oregon State. Instructor (1929-34), Assistant Professor (1934—), Oregon State.

PHILIP MARTIN BRANDT, A.M. ..... School of Agriculture
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

B.S. (1910), A.M. (1913), Missouri. Instructor (1911-13), Assistant Professor (1913-14), Assistant to Dean and Director (1914-17), Missouri; Professor (Department Head) and Dairy Husbandman (1917—), Division Head (1933—), Oregon State.

CLARENCE IVAN BRANTON, B.S. ..... Agricultural Experiment Station
Assistant Agricultural Engineer

B.S. (1933), Oregon State. Assistant Agricultural Engineer (1933—), Oregon State.

JEANNETTE ALICE BRAUNS, B.S. ..... Physical Education
Instructor in Physical Education for Women

B.S. (1930), Battle Creek College. Instructor (1930—), Oregon State.

LE ROY BREITHAUPT, B.S. ..... Federal Cooperative Extension
Extension Agricultural Economist

B.S. (1910), Oregon State. Superintendent (1911-18), Harney Branch Experiment Station; County Agricultural Agent (1920-26), Malheur County; Extension Agricultural Economist (1926—), Oregon State.

MARGARET LOUISE BREW, Ph.B. ..... School of Home Economics
Instructor in Clothing, Textiles, and Related Arts

Ph.B. (1926), Chicago. Instructor (1930—), Oregon State.

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

Ph.C. (1925), B.S. (1926), Oregon State; M.S. (1929), Washington; Teaching Fellow (1929-30), Washington; Teaching Fellow (1925-26), Instructor (1926-28), Assistant Professor (1930—), Oregon State.

WALTER SHELDON BROWN, D.Sc. ..... School of Agriculture
Professor of Horticulture; Head of Department; Horticulturist in Charge, Agricultural Experiment Station

A.B. (1899), D.Sc. (1931), Alfred; B.S.A. (1904), Cornell; M.S. (1906), Wisconsin. Instructor (1904-06), Wisconsin; Head of Department of Horticulture and Forestry (1906-08), Winona Agricultural Institute; Extension Specialist (1913-19), Pomologist (1919-20), Professor (Department Head) and Horticulturist in Charge (1920—), Oregon State.

JESSE FRANKLIN BRUMBAUGH, A.M. ..... Social Science
Professor of Psychology

A.B. (1894), DePauw; LL.B. (1908), South Dakota; A.M. (1902), Chicago. Professor (1897-1901), Dakota Wesleyan (S.D.); Professor (1902-06), DePauw; Professor (1909-13), State Law School of South Dakota; Professor (1915—), Oregon State.

DELOSS EVERETT BULLIS, M.S. ..... Agricultural Experiment Station
Associate Chemist (Horticultural Products)

B.S. (1917), M.S. (1929), Oregon State. Assistant Chemist (1917-34), Associate Chemist (1934—), Oregon State.

ARNOLD STEWART BURRIER, M.S. ..... Agricultural Experiment Station
Associate Economist (Farm Management)

B.S. (in Agri.) (1924), Missouri; M.S. (1925), Oregon State. Assistant (1925-29), Associate Economist (1932—), Oregon State.

URIEL SELLERS BURT ..... Federal Cooperative Extension
State Specialist in Visual Instruction

Assistant in Information and Exhibits (1919-30), (Assistant Professor 1925); Extension Specialist in Visual Instruction (Associate Professor and Department Head) (1930—), Oregon State.

JOHN COLE BURTNER, B.S. ..... Division of Information
Associate in News Service

B.S. (1923), Oregon State, Instructor in Journalism (1924-28), Associate Director of News Service and Agricultural Press Editor (Associate Professor) (1929-32), Associate in News Service (1932—), Oregon State.

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

Met.E. (1924), Montana School of Mines; B.S. (1928), Ph.D. (1930), Wisconsin. Teaching Fellow (1925-26), Montana; Teaching Fellow (1926-29), Instructor (1929-30), Wisconsin; Assistant Professor (1930—), Oregon State.

EDWARD CLEVELAND CALLAWAY, M.S. ..... School of Science
Instructor in Chemistry

B.S. (1909), M.S. (1911), M.S. (1931), Oregon State. Instructor (1910-11), Professor (1918-27), North Pacific College; Dean of Pharmacy (1927-29), Des Moines University; Instructor in Chemistry (1929—), Oregon State.

LUCY ADA CASE, M.A. ..... Federal Cooperative Extension
Extension Specialist in Nutrition; Assistant Professor of Foods and Nutrition

B.A. (1911), Wisconsin; MA. (1912), Columbia; B.S. (1924), Minnesota. Nutrition Specialist (1922-24), Wisconsin; Extension Specialist (Assistant Professor) (1924—), Oregon State.

MILDRED CHAMBERLAIN, Ph.B. ..... School of Home Economics
Associate Professor of Clothing, Textiles, and Related Arts

Ph.B. (1909), Chicago. Associate Professor (1930—), Oregon State.

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

B.S. (1915), M.S. (1921), Oregon State; Ph.D. (1930), Stanford. Instructor (1916-21), Assistant Professor (1921-28), Associate Professor (1928—), Oregon State.

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

A.B. (1922), M.A. (1922), Indiana; Ph.D. (1926), Ohio; Assistant (1920-22), Indiana; Graduate Assistant (1922-23), Instructor (1923-26), Ohio; Adjunct Professor (1926-27), Assistant Professor (1927-29), Texas; Professor (1929—), Oregon State.

DAVID BERRY CHARLTON, Ph.D. ..... School of Science
Instructor in Bacteriology

B.A. (1925), British Columbia; M.S. (1929), Cornell; Ph.D. (1933), Iowa State. Instructor (1931-32), Nebraska; Instructor (1929-31, 1934—), Oregon State.

BERT EINAR CHRISTENSEN, Ph.D. ..... School of Science
Instructor in Chemistry

B.S. (1927), Washington State; Ph.D. (1931), Washington. Instructor (1931—), Oregon State.

JOHN MYERS CLIFFORD ..... Federal Cooperative Extension
Extension Secretary

Secretary to Dean and Director of Agriculture (1918-20), Extension Secretary (1933—), Oregon State.

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

A.B. (1922), B.S. (in Ed.) (1922), M.A. (1925), Missouri; Ed.D. (1933), Stanford. Cubberley Teaching Fellow and Research Assistant in Psychology (1927-28), Stanford; Associate Professor (1928-33), Professor (1933—), Oregon State.

HAROLD COCKERLINE, B.S. ..... School of Engineering
Assistant Professor of Electrical Engineering

B.S. (in E.E.) (1912), Oregon. Instructor (1921-23), Assistant Professor (1923—), Oregon State.

RALPH COLBY, Ph.D. ..... Arts and Letters
Assistant Professor of English

B.A. (1916), M.A. (1917), Minnesota; Ph.D. (1928), Illinois. Assistant (1916-19), Minnesota; Teaching Assistant (1919-28), Illinois; Assistant Professor (1928—), Oregon State.

RUTH COLE, B.S. ..... Library
Senior Circulation Assistant, Library

B.S. (in L.S.) (1932), Washington. Junior Circulation Assistant (1932-33), Senior Circulation Assistant (1933—), Oregon State.

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

B.S. (1918), Oregon State; M.A. (1929), Columbia. Instructor (1919-25), Associate Professor (1925-30), Director of Intramural Sports (1929—), Professor (1930—), Oregon State.

HOWARD NOTSON COLMAN, B.A., B.S. ..... School of Agriculture
Assistant Professor of Dairy Husbandry

B.A., B.S. (1915), Nebraska. Assistant (1915-18), Nebraska; Instructor (1918-20), Washington State; Instructor (1920-25), Assistant Professor (1925—), Oregon State.

SERGEANT EDWARD HURSHAL COMBS.....Military Science and Tactics
Assistant Instructor in Equitation

Assistant Instructor (1932—), Oregon State.

CAPTAIN HAROLD ALLUM COONEY, M.S.....Military Science and Tactics
Assistant Professor of Military Science and Tactics

Graduate (1917), U. S. Military Academy; Graduate (1925), Field Artillery School; Graduate (1926), Signal School; M.S. (1927), Yale. Assistant Professor (1920-24), Stanford; Instructor (1927-29), Field Artillery School; Assistant Professor (1929-33), U. S. Military Academy; Assistant Professor (1933—), Oregon State.

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

B.S. (1911), M.S. (1913), Oregon State. Graduate Assistant (1911-13), Assistant Professor (1915-18), Acting Department Head (1918-20), Professor (Department Head) and Bacteriologist in Charge (1920—), Oregon State.

ARTHUR BURTON CORDLEY, D.Sc., LL.D.....School of Agriculture
Dean Emeritus of the School of Agriculture

B.S. (1888), M.S. (1901), D.Sc. (1917), Michigan Agricultural; LL.D. (1932), Oregon State. Assistant Entomologist (1888-90), Instructor (1895), Michigan State; Assistant Entomologist (1890-91), Vermont; Assistant Entomologist (1891-93), United States Department of Agriculture; Professor (1895-1907), Dean (1907-31), Director of Oregon Agricultural Experiment Station (1914-20), Dean Emeritus (1931—), Oregon State.

HUBERT ELMER COSBY.....Federal Cooperative Extension
Extension Poultryman

Extension Poultryman (1917-19), United States Department of Agriculture; Extension Poultryman (1919-20), Missouri Poultry Experiment Station; Extension Poultryman (1920—), (Associate Professor 1924—), Oregon State.

HELEN JULIA COWGILL, M.A.....Federal Cooperative Extension
Assistant State Club Leader

B.S. (1913), B.S. (1916), Oregon State; M.A. (1931), Washington. Assistant State Club Leader (Associate Professor) (1914—), Oregon State.

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

B.S. (1919), Missouri. Instructor (1916-19), Missouri; Associate Professor (1920-21), State Teachers College, Huntsville, Texas; Assistant Professor (1921-27), Wisconsin; Professor (Department Head) and Director of Engineering Shops (1927—), Oregon State.

FREDERICK ALEXANDER CUTHBERT, M.L.D.....Architecture and Allied Arts
Associate Professor of Landscape Architecture

A.B. (1926), M.L.D. (1928), Michigan. Assistant (1927-28), Michigan; Instructor (1928-30), Assistant Professor (1930-34), Associate Professor (1934—), Oregon State; Assistant Professor (1932-1934), Associate Professor (1934—), Oregon.

*ROBERT HORNIMAN DANN, M.A.....Social Science
Assistant Professor of Economics; Assistant Professor of Sociology

B.A. (1917), Pacific College; M.A. (1918), Haverford College. Professor of Sociology and Religious Education (1920-24), Guilford College; Instructor (1927-28), Assistant Professor (1928—), Oregon State.

SERGEANT LAURENCE EDWIN DARLINGTON, M.S.....Military Science and Tactics
Assistant to Professor of Military Science and Tactics

B.S. (1932), M.S. (1934), Oregon State. Assistant (1921—), Oregon State.

*On leave of absence.

MERLE BONNEY DAVIS, B.S.....School of Education, School of Home Economics
Critic Teacher in Home Economics Education

B.S. (1926), Oregon State. Critic Teacher (1926—), Oregon State.

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

A.B. (1895), Willamette; E.E. (1900), Cornell. Instructor (1901-02), Assistant Professor (1902-03), Professor and Department Head (1903-14), Oregon; Professor and Department Head (1914—), Acting Dean and Director (1933—), Oregon State.

ERNEST MILTON DICKINSON, D.V.M.....Agricultural Experiment Station
Assistant Poultry Pathologist

D.V.M. (1927), Ohio. Assistant Poultry Pathologist (1927—), Oregon State.

ROLAND EUGENE DIMICK, M.S.....Agricultural Experiment Station
Assistant Entomologist

B.S. (1926), M.S. (1931), Oregon State. Assistant (1929-31), Assistant Entomologist (1931—), Oregon State.

JAMES VICTOR DIXON, B.S.....Physical Education
Instructor in Physical Education; Assistant Coach

B.S. (1931), Oregon State. Instructor and Assistant Coach (1927—), Oregon State.

SAMUEL MICHAEL DOLAN, C.E.....School of Engineering
Associate Professor of Civil Engineering

C.E. (1910), Notre Dame. Instructor (1910-14), Assistant Professor (1914-20), Associate Professor (1920—), Oregon State.

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

A.B. (1907), Greenville College (Illinois); M.A. (1916), Ph.D. (1918), Illinois. Professor (1908-14), Greenville College; Assistant (1914-18), Illinois; Assistant Professor (1918-22), Associate Professor (1922-29), Professor and Agricultural Economist (1929—), Oregon State.

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

A.B. (1908), Indiana University; M.A. (1909), Harvard; Ph.D. (1913), Wisconsin. Professor and Department Head (1913—), Dean of Men (1924—), Oregon State.

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

B.S. (1917), Rutgers; M.S. (1922), California; Ph.D. (1929), Stanford. Assistant, Instructor, and Assistant Pomologist (1920-29), California; Professor (1929—), Horticulturist (1933—), Oregon State.

LILLY NORDGREN EDWARDS, M.A.....Secretarial Science
Instructor in Secretarial Science

B.S. (1924), Oregon State; M.A. (1931), Stanford. Instructor (1927-29), Yuba County Junior College (California); Assistant (1924-25), Instructor (1929—), Oregon State.

WILLIAM DONALD EDWARDS, B.S.....Agricultural Experiment Station
Field Assistant (Entomology)

B.S. (1931), Oregon State. Field Assistant (1931—), Oregon State.

JOSEPH WALDO ELLISON, Ph.D. ..... Social Science
Associate Professor of History

A.B. (1917), M.A. (1919), Ph.D. (1923), California. Assistant (1922-24), California; Instructor (1924-27), Assistant Professor (1927-34), Associate Professor (1934—), Oregon State.

DONALD WILLIAM EMERY, M.A. ..... Arts and Letters
Instructor in English

B.A. (1927), M.A. (1928), Iowa. Instructor (1928—), Oregon State.

JOHN LEO FAIRBANKS ..... Architecture and Allied Arts
Professor of Art and Architecture; Head of Department

Cert. (1906), Beaux Arts, Paris; Cert. (1909), Academie Julien, Paris; Cert. (1909), Colorossi, Paris. Extension Instructor (1918-22), Utah and Utah State; Professor and Department Head (1923—), Oregon State.

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

B.S. (1910), College of City of New York; Ph.D. (1914), Wisconsin. Head of Biology Department (1910-11), Marshall College; Assistant Instructor (1911-14), Wisconsin; Instructor (1914-19), Assistant Professor (1919-20), Washington; Associate Professor (1920-21), Professor and Department Head (1921—), Oregon State.

RUTH MORRIS FOREST, B.S. ..... School of Education, School of Home Economics
Critic Teacher in Home Economics

B.S. (1929), Oregon State. Critic Teacher (1931—), Oregon State.

FRANK ELMER FOX, M.S. ..... School of Agriculture
Associate Professor of Poultry Husbandry; Associate Poultry Husbandman, Agricultural Experiment Station

B.S. (1915), Iowa State; M.S. (1926), Kansas State. Student Assistant Instructor (1914-15), Iowa State; Assistant Professor (1916-20), Kansas State; Assistant Professor (1921-25), Associate Professor (1925—), Oregon State.

FRANK LLOYD FRANCE, B.S. ..... School of Education
Instructor in Industrial Education

B.S. (in Ed.) (1922), State Teachers College (Kirksville, Mo.); B.S. in Industrial Arts (1924), Stout Institute (Wisconsin). Director of Industrial Education (1921-24), State Teachers College (Kirksville, Mo.); Director of Industrial Education (1924-25), Berea College; Instructor (1927—), Oregon State.

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

B.S. (1929), Oregon State. Instructor (1920-29), Assistant Professor (1929—), Oregon State.

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

B.S. (1925), Maine; Ph.D. (1928), Wisconsin. Assistant (1925-28), Wisconsin; Instructor (1928-29), Assistant Professor (1929-32), Oregon; Assistant Professor (1932—), Oregon State.

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

B.A. (1917), Nebraska; M.A. (1925), Columbia. Instructor (1923-25), Nebraska; Instructor (1918-22, 1925-29), Professor and Department Head (1929—), Oregon State.

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

B.S. (1892), M.S. (1900), Oregon State. Instructor (1894-95), Acting Station Chemist (1896), Assistant Professor (1897), Associate Professor (1899), Professor (1901—), Department Head (1907—), Oregon State.

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

B.S. (in E.E.) (1922), Oregon State; Ph.M. (1933), Wisconsin. Teaching Fellow (1922-23), Instructor (1923-34), Assistant Professor (1934—), Oregon State.

FIRST LIEUTENANT FRANCIS ARTHUR GARRECHT, JR. ..... Military Science
Assistant Professor of Military Science and Tactics

Graduate (1923), U.S. Military Academy; Graduate (1932), Field Artillery School. Assistant Professor (1932—), Oregon State.

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

B.S. (1923), Nebraska; M.A. (1930), California. Research Fellow (1929-30), California; Instructor (1930-33), Assistant Professor (1933—), Oregon State.

GEORGE OURY GATLIN, LL.B. ..... Federal Cooperative Extension
Extension Economist in Marketing

LL.B. (1910), Cumberland University. Extension Economist (1928—), Oregon State.

MAJOR JACOB JOHN GERHARDT ..... Military Science and Tactics
Associate Professor of Military Science and Tactics

Graduate (1915), U. S. Military Academy; Graduate (1921), Infantry School; Graduate (1931), Command and General Staff School. Associate Professor (1931—), Oregon State.

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

A.B. (1909), Denison University (Ohio); A.M. (1912), Columbia. Head of Department of Biology and Agriculture (1914-15), Kearney State Normal School (Nebraska); Assistant Professor (1915-17), Iowa State; State Supervisor of Agricultural Education (1917-19), Vermont; Professor of Vocational Education (1919-21), Arizona; Professor and Department Head (1921—), Oregon State.

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

B.S. (1916), M.S. (1917), Hiram College; Ph.D. (1922), Chicago. Assistant (1921-22), Chicago; Instructor (1917-21), Assistant Professor (1922-25), Associate Professor (1925-30), Professor (1930—), Oregon State.

FRANCOIS ARCHIBALD GILFILLAN, Ph.D. ..... School of Pharmacy
Professor of Pharmacy; Head of Department

B.S. (1918), Ph.G. (1918), Ph.C. (1920), Oregon State; Ph.D. (1921), Yale. Fellow in Chemistry (1920-21), Yale; Professor (1925-27), Florida; Instructor (1918), Assistant Professor (1922-25), Associate Professor (1927-30), Professor and Department Head (1930—), Oregon State.

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

B.S. (1907), M.S. (1911), Oregon State; Ph.D. (1915), California. Assistant (1915-16), Scientific Artist (1917-18), California; Assistant (1907-09), Instructor (1909-11), Assistant Professor (1918-27), Associate Professor (1927—), Oregon State.

AMORY TINGLE GILL, B.S. ..... Physical Education
Head Coach of Basketball and Baseball; Instructor in Physical Education

B.S. (1925), Oregon State. Instructor and Coach (1926—), Oregon State.

WILLIAM JAMES GILMORE, B.C.E., B.S. ..... School of Agriculture
Professor of Agricultural Engineering; Head of Department

B.C.E. (1909), B.S. (in A.E.) (1911), Iowa State. Assistant Professor (1911-15), Manitoba Agricultural; Professor and Department Head (1915—), Oregon State.

GEORGE WALTER GLEESON, M.S. ..... School of Engineering
Assistant Professor of Chemical Engineering

B.S. (in Ch.E.) (1928), M.S. (in ChE.) (1934), Oregon State. Engineering Experiment Station Fellow (1928-29), Instructor in Mechanics and Materials (1929-32), Assistant Professor of Chemical Engineering (1932—), Oregon State.

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

B.S. (1919), Michigan; M.S. (1931), Iowa State. Instructor (1918-19), Michigan; Instructor (1918-22), Assistant Professor (1922-34), Associate Professor (1934—), Oregon State.

DELMER MORRISON GOODE, B.A. ..... Division of Information
Associate Editor of Publications

B.A. (1916), Minnesota. Assistant (1919-20), Assistant Editor (1920-22), Associate Editor (Associate Professor) (1922—), Oregon State.

KENNETH LLEWELLYN GORDON, M.A. ..... School of Science
Assistant Professor of Zoology

A.B. (1923), Colorado; M.A. (1925), Missouri. Instructor (1927-29), Assistant Professor (1929—), Oregon State.

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

B.S. (in E.E.) (1907), E.E. (1908), B.S. (in M.E.) (1908), M.E. (1909), M.S. (in E.E.) (1909), Oregon State. Assistant in Mechanical Engineering (1908-09), Instructor (1909-12), Assistant Professor of Experimental Engineering and Department Head (1912-14), Professor (1914-20), Professor of Mechanics and Materials (Department Head) (1920-34), Professor of Mechanical Engineering (Acting Department Head) (1934—), Associate Director of Engineering Experiment Station (1927-28), Director of Engineering Research (1928—), Oregon State.

IRIS GRAY, B.Mus. ..... Music
Instructor in Piano

B.Mus. (1933), Cincinnati Conservatory of Music. Instructor (1933—), Oregon State.

KENNETH WIESNER GRAY, B.S. ..... Agricultural Experiment Station
Field Assistant (Entomology)

B.S. (1930), Oregon State. Field Assistant (1930—), Oregon State.

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

B.S. (in C.E.) (1916), C.E. (1922), Purdue. Instructor (1920-23), Washington State; Assistant Professor (1925-29), Armour Institute of Technology; Professor (1929—), Oregon State.

LENNA ANNE GUTHRIE, A.B., B.S. ..... Library
Loan Librarian

A.B. (1925), Washington State; B.S. (1930), Illinois. Circulation Assistant (1930-32), Acting Loan Librarian (1932-33), Loan Librarian (1933—), Oregon State.

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

B.S. (1918), M.S. (1923), Pennsylvania State; Ph.D. (1926), Minnesota. Assistant Chemist (1919-20), Rhode Island Agricultural Experiment Station; Assistant (1920-21), Maryland Agricultural Experiment Station; Instructor (1921-23), Assistant Professor (1926-27), Pennsylvania State; Instructor (1923-26), Minnesota; Chemist (1927—), Oregon State.

RONALD STEWART HAINES, M.D. ..... Physical Education
Health Service Physician

A. B. (1927), Willamette; M.D. (1931), Portland. Instructor (1932-33), Oregon; Health Service Physician (1933—), Oregon State.

HOWARD CLAUDE HALBERT, B.M., B.A. ..... Music
Instructor in Violin; Assistant Conductor of the College Orchestra

B.M. (1932), B.A. (1933), Oregon. Instructor (1933—), Oregon; Instructor (1933—), Oregon State.

LUCIA HALEY, A.B. ..... Library
Assistant Librarian

A. B. (1911), Washington. Temporary Cataloger (1916), Washington State Normal (Cheney); Reference and Circulation Librarian (1919-20), Acting Librarian (1920-21), Montana; Head, Continuations Department (1921), Assistant Librarian (Associate Professor) (1925—), Oregon State.

JOSEPHINE HELEN HALVERSON, A.B. ..... Library
Senior Catalog Assistant, Library

A.B. (1928), California. Assistant (1924-30), California; Senior Catalog Assistant (1930—), Oregon State.

*LINDEN ELI HARRIS, M.S. ..... School of Agriculture
Instructor in Farm Crops; Assistant Agronomist, Agricultural Experiment Station

B.S. (1930), Utah State; M.S. (1932), Oregon State. Teaching Fellow (1930-32), Instructor (1932—), Assistant Agronomist (1933—), Oregon State.

MASTER SERGEANT JOHN HARSCH, JR. ..... Military Science and Tactics
Assistant to Professor of Military Science and Tactics

Assistant (1920—), Oregon State.

HENRY HARTMAN, M.S. ..... Agricultural Experiment Station
Horticulturist (Pomology)

B.S. (1917), Washington State; M.S. (1922), Iowa State. Extension Assistant Professor of Pomology (1917-18), Iowa State; Instructor, Assistant Professor, Associate Professor and Professor of Pomology (1919-31), Oregon State; Pomologist (1931-32), United States Department of Agriculture; Horticulturist (1932—), Oregon State.

NELLIE REGINA HARVEY, B.S. ..... Library
Senior Document Assistant, Library

B.S. (in L.S.) (1927), Washington. Assistant in Technical Department (1927-32), Senior Document Assistant (1932—), Oregon State.

ALFRED CLINTON HARWOOD ..... School of Engineering
Mechanician

Mechanician (1920—), Oregon State.

MILES BRAYTON HATCH, M.S. ..... Agricultural Experiment Station
Assistant Chemist

B.S. (1930), Washington State; M.S. (1934), Oregon State. Research Fellow (1930-31), Assistant Chemist (1931—), Oregon State.

LAURA BELLE HEATH, B.S. ..... Division of Information
Assistant Editor of Publications

B.S. (1915), Oregon State. Assistant (1917-24), Assistant Editor (Assistant Professor) (1924—), Oregon State.

ELZIE VANCE HERBERT ..... Library
Head of Orders Department

Secretary and Orders Clerk (1927-30), Head of Orders Department (1927—), Oregon State.

*Resigned.

BERTHA EMMA HERSE, B.S., B.L.S. ..... Library
Reference Librarian

B.S. (1910), B.S. (1928), Oregon State; B.L.S. (1924), New York State Library School. Reference Librarian (Assistant Professor) (1924—), Oregon State.

JACK ERNEST HEWITT, M.A. ..... Physical Education
Assistant Professor of Physical Education

A.B. (1928), California; M.A. (1932), Oregon. Instructor (1929-32), Oregon; Assistant Professor (1932—), Oregon State.

*DONALD DAVID HILL, M.S. ..... School of Agriculture
Associate Professor of Farm Crops; Associate Agronomist, Agricultural Experiment Station

B.S. (1925), Oregon State; M.S. (1927), Kansas State. Instructor (1927-28), Assistant Professor (1928-30), Associate Professor (1930—), Oregon State.

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

B.A. (1913), M.A. (1914), Minnesota; Ph.D. (1916), Columbia. Acting Head of Department (1917-20), University of British Columbia; William Bayard Cutting Traveling Fellowship (1915-16), Columbia; Professor (1920-32), Oregon; Professor (1932—), Oregon State.

GLENN WILLIS HOLCOMB, M.S. ..... School of Engineering
Associate Professor of Civil Engineering; Chairman of General Engineering

B.S. (in C.E.) (1919), Michigan; M.S. (1931), Oregon State. Instructor (1920-26), Assistant Professor (1927-34), Associate Professor (1934—), Oregon State.

WILLIAM HAMILTON HORNING ..... School of Engineering
Instructor in Forging

Instructor (1920—), Oregon State.

HARRISON VAL HOYT, Ph.D. ..... Secretarial Science
Dean and Director of Business Administration, Oregon State System of Higher Education; In Charge of Secretarial Science

B.S. (1913), Purdue; M.B.A. (1917), Harvard; Ph.D. (1931), Stanford. Dean, School of Business (1921-31), Brigham Young; Dean (1931—), Oregon State; Dean, (1932—), Oregon.

KATHERINE WHIPPLE HUGHES, B.S. ..... Library
Senior Reference Assistant

B.S. (in L.S.) (1928), Washington. Senior Reference Assistant (1929—), Oregon State.

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

A.B. (1917), Indiana; M.A. (1925), Chicago. Instructor (1918-19), Utah State; Special Adviser to the Director of Dormitories (1925-26), Miami; Instructor and Assistant Director of Dormitories (1919-23), Professor (Department Head) and Director of Dormitories (1926—), Oregon State.

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

B.S. (1907), Ohio State. Graduate Assistant (1907-08), Ohio State; Special Investigator Bureau of Agricultural Economics, United States Department of Agriculture; Instructor, Assistant Professor, Associate Professor (1908-16), Professor (Department Head) and Agronomist (1916—), Division Head (1933—), Oregon State.

*On leave of absence 1933-34.

MELVIN PRICE ISAMINGER, Dr.P.H. ..... Physical Education
Professor of Hygiene

A.B. (1925), M.S. (1926), Dr. P.H. (1927), Michigan. Assistant Professor (1926-30), Director of Health Education Program, Extension Division (1928-30), Michigan; Professor of Hygiene (1930—), Oregon State.

EDWIN RUSSELL JACKMAN, B.S. ..... Federal Cooperative Extension
Extension Agronomist

B.S. (1920), Oregon State. County Agricultural Agent (1920-22), Wasco County; Extension Agronomist (1922—), Oregon State.

MARIE HULL JACKSON, B.A., B.S. ..... Library
Senior Continuations Cataloger, Library

B.A. (1925), Oregon; B.S. (in L.S.) (1926), Washington. Senior Continuations Cataloger (1929—), Oregon State.

ELSIE INGEBORG JACOBSEN, B.S. ..... Physical Education
Instructor in Physical Education for Women

B.S. (1926), Washington State; Graduate (1924), Sargent School of Physical Education, (Cambridge, Massachusetts). Teaching Fellow (1924-25), Washington State; Acting Head of Department of Physical Education for Women (1925-26), Idaho; Instructor (1926—), Oregon State.

KATE WETZEL JAMESON, Ph.D. ..... Student Welfare, Personnel and Placement
Dean of Women

A.B. (1905), A.M. (1910), Ohio Wesleyan; A.M. (1914), Ph.D. (1916), Wisconsin. Extension Division of German Department (1914-16), Wisconsin; Professor of German and Dean of Women (1916-20), Montana; Head of German Department and Dean of Women (1920-23), Arizona; Dean of Women (1923—), Oregon State.

WILLIAM ARTHUR JENSEN, M.S. ..... Administration
Executive Secretary

M.S. (1932), Oregon State. Instructor (1904-07), Utah State; Secretary (1907-15), Executive Secretary (1915—), Oregon State.

LORNA COLLAMORE JESSUP, B.S. ..... Student Welfare, Personnel and Placement
Assistant Dean of Women

B.S. (1923), Oregon State. Head of Home Economics Department (1923-27), State Teachers' College, Flagstaff, Arizona; Assistant Dean of Women (1927—), Oregon State.

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

A.B. (1903), Coe College; M.A. (1904), Ph.D. (1906), Clark; LL.D. (1927), Arkansas. Director of Training (1906-07), South West Louisiana Industrial Institute; Professor (1907-09, 1911-13), Kansas State Teachers College; Dean College of Education (1913-27), Arkansas; Dean and Professor of Vocational Education (1927-32), Oregon State; Dean (1932—), Oregon and Oregon State.

CHARLES LESLIE JOHNSON, B.S. ..... School of Science
Professor of Mathematics

B.S. (1892), Oregon State. Instructor (1905-07), Professor (Department Head 1907-32), (1907—), Oregon State.

WALTER THEODORE JOHNSON, B.S., D.V.M. ..... School of Agriculture
Professor of Veterinary Medicine; Poultry Pathologist, Agricultural Experiment Station

B.S. (in Agri.) (1915), D.V.M. (1917), Washington State. Instructor (1917-19), Veterinarian (1919-25), Washington State; Assistant Professor (1925-27), Poultry Pathologist (1925—), Associate Professor (1927-28), Professor (1928—), Oregon State.

FRANCES WRIGHT JONASSON, B.S. ..... Schools of Education, Home Economics
State Supervisor and Teacher Trainer in Vocational Home Economics

B.S. (1922), Oregon State. State Supervisor and Teacher Trainer (1928—), Oregon State.

IDWAL RALPH JONES, Ph.D. ..... School of Agriculture
Associate Professor of Dairy Husbandry; Associate Dairy Husbandman, Agricultural Experiment Station

B.S. (1920), Pennsylvania State; M.S. (1921), Rutgers; Ph.D. (1925), Minnesota. Research Fellow (1920-21), Rutgers; Assistant Dairyman (1921-23), Clemson College; Caleb Dorr Fellow (1923-25), Minnesota; Assistant Professor (1925-29), Associate Professor and Associate Dairy Husbandman (1929—), Oregon State.

J. SHIRLEY JONES, M.S.A. ..... School of Science
Professor of Agricultural Chemistry; Chemist in Charge, Agricultural Experiment Station

B.S. (1903), California; M.S.A. (1914), Cornell. Experiment Station Chemist (1906-18), Professor (1908-18), Director of Idaho Experiment Station (1914-18), Idaho; Professor and Chemist in Charge (1919—), Oregon State.

SIDNEY CARROLL JONES, M.S. ..... Agricultural Experiment Station
Assistant Entomologist

B.S. (1926), Oregon State; M.S. (1928), Iowa State. Assistant Entomologist (1930—), Oregon State.

WALTER RICHARD JONES, M.E., M.S. ..... School of Engineering
Associate Professor of Aeronautical Engineering

B.S. (1923), M.E. (1928), Washington; M.S. (1934), Oregon State. Assistant Professor (1930-34), Associate Professor (1934—), Oregon State.

CHARLES SAMUEL KEEVIL, Sc.D. ..... School of Engineering
Professor of Chemical Engineering; Head of Department

S.B. (1923), S.M. (1927), Sc.D. (1930) Massachusetts Institute of Technology. Instructor (1927-30), Massachusetts Institute of Technology; Professor and Department Head (1930—), Oregon State.

CURTIS KELLEY, M.B.A. ..... Business Administration
Assistant Professor of Business Administration

A.B. (1925), M.B.A. (1927), Washington. Assistant in Accounting (1926-27), Washington; Assistant (1927-28), Instructor (1928-29), Assistant Professor (1929—), Oregon State.

JOHN M KIERZEK, Ph.D. ..... Arts and Letters
Associate Professor of English

B.A. (1913), Carleton College; M.A. (1917), Ph.D. (1925), Minnesota. Instructor (1919-20), Iowa State; Instructor (1920-24), Minnesota; Assistant Professor (1924-28), Associate Professor (1928—), Oregon State.

ARTHUR SOLOMON KING, M.S. ..... Federal Cooperative Extension
Extension Specialist in Soils

B.S. (1928), M.S. (1930), Oregon State. Teaching Fellow (1928-30), District Agent (Baker, Union, and Wallowa counties), (1929), Extension Specialist (1930—), Oregon State.

WILLIAM JOHN KIRKHAM, A.M. ..... School of Science
Instructor in Mathematics

A.B. (1927), A.M. (1928), Indiana. Instructor (1929—), Oregon State.

PAUL XENOPHON KNOLL, M.S. ..... Arts and Letters
Assistant Professor of Speech

B.S. (1923), M.S. (1930), Oregon State. Instructor in Economics and Sociology (1927-28), Instructor in Speech (1928-33), Oregon State; Assistant Professor of Speech (1933-34), Oregon; Assistant Professor (1934—), Oregon State.

FRANK LESTER KNOWLTON, M.S. ..... Agricultural Experiment Station
Poultry Husbandman

B.S. (1919), Cornell; M.S. (1932), Wisconsin. Research Assistant in Poultry Husbandry (1920-23), Assistant Poultry Husbandman (1923-25), Poultry Husbandman (Professor) (1925—), Oregon State.

AGNES KOLSHORN, M.A. ..... School of Home Economics
Assistant Professor of Foods and Nutrition

B.S. (1913), Oklahoma State; B.S. (1918), Columbia; M.A. (1919), Denver. Faculty (1914-17), Colorado Women's College; Faculty (1918-21), Mississippi State; Instructor (1921-28), Minnesota; Associate Professor (1928-29), Washington; Assistant Professor (1929—), Oregon State.

GUSTAV WESLEY KUHLMAN, M.S. ..... School of Agriculture
Associate Professor of Farm Management; Associate Economist (Farm Management), Agricultural Experiment Station

B.S. (1925), South Dakota State; M.S. (1926), Illinois. Assistant (1925-27), Illinois; Assistant Professor (1927-32), Associate Professor and Associate Economist (1932—), Oregon State.

EDITH CARTER KUNEY, A.M. ..... Arts and Letters
Associate Professor of Modern Languages

A.B. (1909), Willamette; A.M. (1925), Stanford. Instructor (1910-15), Assistant Professor (1925-29), Associate Professor (1929—), Oregon State.

CLAIR VAN NORMAN LANGTON, Dr.P.H. ..... Physical Education
Professor and Director of Physical Education; Technical Counselor in Sanitary Engineering, Engineering Experiment Station

B.S. (1923), M.S. (1925), Dr.P.H. (1928), Michigan. Instructor (1923-26), Assistant Director of Intramural Sports (1923-28), Assistant Professor and Director of Hygiene Laboratory (1926-28), Michigan; Dean of the School of Health and Physical Education (1929-32), Professor and Director (1928—), Oregon State.

HERBERT REYNOLDS LASLETT, Ph.D. ..... School of Education
Professor of Educational Psychology; Director of Supervised Teaching

A.B. (1918), Kansas; A.M. (1923), Ph.D. (1926), Stanford; Certificate (1919), Universite Montpellier. Associate Professor (1923-24), Colorado State; Professor (1926-28), Whitman College; Associate Professor (1928-29), Professor (1929—), Director of Supervised Teaching (1930—), Oregon State.

WILLIAM EVANS LAWRENCE, B.S. ..... School of Science
Associate Professor of Plant Ecology

B.S. (1904), Earlham College. Instructor (1906-09), Michigan State; Instructor (1909-10), Oklahoma A. & M.; Instructor (1910-15), Assistant Professor (1915-20), Associate Professor (1920—), Oregon State.

JEROME LLOYD LEMASTER, M.A. ..... Business Administration
Associate Professor of Business Administration

LL.B. (1923), Illinois; Cert.d'A. en Droit Civile (1924), Bordeaux; M.A. (1925), Colorado; Oregon Bar (1930). Teaching Fellow (1923-24), Bordeaux; Research Fellow (1924-25), Colorado; Assistant (1925-26), Instructor (1926-28), Associate (1928), Illinois; Assistant Professor (1928-29), Associate Professor (1929—), Oregon State.

ERWIN BERTRAM LEMON, B.S. ..... Administration
Registrar

B.S. (1911), Oregon State. Statistician (1911-12), State Statistical Bureau; Instructor in Accounting (1912-18), Assistant Professor (1918-20), Associate Professor (1920-22), Registrar (Dean) (1922—), Oregon State.

LUCY MAY LEWIS, A.B., B.L.S. ..... Library
Librarian

A.B. (1905), B.L.S. (1906), Illinois. Librarian (1906-11), New Mexico College of A. & M. A.; Assistant Librarian and Cataloger (1911-18), Assistant Librarian and Reference Librarian (1918-20), Acting Librarian (1920), Librarian (Department Head) (1920-32), Librarian (Dean) (1932—), Oregon State.

MARY EUNICE LEWIS, M.A. ..... Arts and Letters
Associate Professor of Modern Languages

B.S. (1906), Pacific College; A.B. (1907), Penn College; M.A. (1918), California. Professor (1910-26), Pacific College; Instructor (1928-30), Assistant Professor (1930-33), Associate Professor (1933-—), Oregon State.

MORTIMER REED LEWIS, C.E. ..... Agricultural Experiment Station
Irrigation and Drainage Engineer

B.S. (1906), C.E. (1925), Utah. Associate Professor of Agricultural Engineering (1922-25), Professor and Head of Department (1925-28), Idaho; Irrigation and Drainage Engineer (1928-—), Oregon State.

HARRY ARTHUR LINDGREN, B.S. ..... Federal Cooperative Extension
Extension Animal Husbandman

B.S. (in Agri.) (1911), Oregon State. Superintendent, John Jacob Astor Experiment Station (1913-15), Agriculturist (Reclamation Projects) (1915-19), Extension Animal Husbandman (1920-—), Oregon State.

CARL ALLEN LODELL, B.S. ..... Physical Education
Director of Intercollegiate Athletics; General Manager of Student Activities

B.S. (1921), Oregon State. Graduate Manager (1922-—), Director (1933-—), Oregon State.

RALPH NICHOLAS LUNDE, B.S. ..... School of Agriculture
Assistant Professor of Agricultural Engineering

B.S. (1926), Oregon State. Instructor (1930-34), Assistant Professor (1934-—), Oregon State.

ALFRED GUNN LUNN, B.S. ..... School of Agriculture
Professor of Poultry Husbandry; Head of Department; Poultry Husbandman in Charge, Agricultural Experiment Station

B.S. (1912), Oregon State. Extension Specialist (1915-18), Massachusetts State; Chief in Poultry (1918-20), University of British Columbia; Assistant (1908-15), Professor (Department Head) and Poultry Husbandman in Charge (1920-—), Oregon State.

EDWARD HIRAM MCALISTER, A.M. ..... School of Science
Professor of Mathematics

A.B. (1890), A.M. (1893), Oregon. Tutor (1891-95), Associate Professor (1895-1902), Dean of the College of Engineering (1902-15), Head of Department of Mechanics and Astronomy (1915-32), Oregon; Professor (1932-—), Oregon State.

LAURA CORNELIA MCALLESTER, B.S. ..... Physical Education
Assistant Professor of Physical Education for Women; Chairman of Department

Diploma (1906), Boston Normal School of Gymnastics; B.S. (1932), Oregon State. Director (1909-17), North Carolina College for Women; Instructor (1920-21), Oregon; Instructor (1926-33), Assistant Professor (1933-—), Oregon State.

CONDE BALCOM MCCULLOUGH, Eng.D. ..... Engineering Experiment Station
Technical Counselor in Structural Engineering

B.S. (C.E.) (1910), C.E. (1916), Iowa State; LL.B. (1928), Willamette; Eng.D. (1934), Oregon State. Technical Counselor (1931-—), Oregon State.

GERTRUDE ELIZABETH MCELFRESH, A.M. ..... Arts and Letters
Assistant Professor of English

B.S. (1902), Oregon State; A.B. (1909), Cornell; A.M. (1924), Columbia. Instructor (1909-22), Assistant Professor (1922-—), Oregon State.

CHARLES JARVIS MCINTOSH, B.S., B.S.D. ..... Journalism
Professor of Industrial Editing

B.S. (1893), Christian College; B.S.D. (1893), Oregon State Normal. Instructor (1914-18), Assistant Professor (1919-20), Professor (1920-—), Oregon State.

FRED ORVILLE MCMILLAN, M.S. ..... School of Engineering
Research Professor of Electrical Engineering

B.S. (in E.E.) (1912), Oregon State; M.S. (in E.E.) (1919), Union College. Assistant Professor (1920-23), Associate Professor (1923-30), Research Professor (1930-—), Oregon State.

FRANK PADEN MCWHORTER, Ph.D.....Agricultural Experiment Station
Plant Pathologist

B.S. (1917), Vanderbilt; M.S. (1920), Chicago; Ph.D. (1928), Cornell. Associate Professor (1920-23), University of Philippines; Pathologist (1924-29), Virginia Truck Experiment Station; Associate Pathologist (1929-32), Pathologist, (1932—), Oregon State.

OVID TULLIUS MCWHORTER, B.S.....Federal Cooperative Extension
Extension Horticulturist

B.S. (1912), Washington State. County Agent (1915-20), Washington State; County Agent (1920-30), (Professor 1929), Extension Horticulturist (1930—), Oregon State.

FRANK ABBOTT MAGRUDER, Ph.D.....Social Science
Professor of Political Science

A.B. (1905), Washington and Lee University; Ph.D. (1911), Johns Hopkins. Instructor (1911-17), Princeton; Assistant Professor (1917-21), Associate Professor (1921-25), Professor (1925—), Oregon State.

*BERNARD ABRAHAM MANACE, M.D.....Health Service
College Physician

M.D. (1926), Toronto. Instructor (1928-30), Michigan; College Physician (1930—), Oregon State.

MAJOR PAUL WHITTEN MAPES.....Military Science and Tactics
Assistant Professor of Military Science and Tactics

Graduate (1923), Infantry School; Graduate (1930), Command and General Staff School. Assistant Professor (1932—), Oregon State.

†PAUL VESTAL MARIS, B.S.....Federal Cooperative Extension
Director of Federal Cooperative Extension; Professor of Extension Methods

B.S. (1907), Pacific College; B.S. (in Agri.) (1914), Missouri. Dairy Extension Specialist (1911-12), Colorado State and United States Department of Agriculture; County Agricultural Agent (1914-15), Missouri; County Agent Leader (1916-20), Director of Extension (1920—), Oregon State.

MELISSA MARGARET MARTIN, A.M.....Arts and Letters
Associate Professor of Modern Languages; Chairman of Department

A.B. (1912), Oregon; B.S. (1915), Oregon State; A.M. (1920), Columbia. Instructor (1915-24), Assistant Professor (1924-30). Associate Professor (1930—), Oregon State.

WALLACE HOPE MARTIN, M.E., M.S.....School of Engineering
Professor of Heat Engineering

M.E. (1910), Minnesota; M.S. (1930), Iowa State. Instructor (1911-17), Minnesota; Assistant Professor (1917-19), Associate Professor (1919-20), Pennsylvania State; Professor (1920—), Oregon State.

EARL GEORGE MASON, M.F.....School of Forestry
Professor of Forestry

B.S. (1920), Oregon State; M.F. (1923), Yale. Instructor (1920-24), Assistant Professor (1924-32), Associate Professor (1932-34), Professor (1934—), Oregon State.

IDA MARTHA MATSEN, A.M.....Architecture and Allied Arts
Assistant Professor of Art

Diploma (1920), Pratt Institute; B.F.A. (1925), Washington; A.M. (1926), Columbia. Instructor (1927-34), Assistant Professor (1934—), Oregon State.

OTTO CHRISTIAN MAUTHE.....Physical Education
Assistant Professor of Physical Education

G.G. (1920), Normal College of American Gymnastic Union. Director (1909-16), Stout Institute; Director (1910-16), Dunn County Normal, Menominie, (Wisconsin); Instructor (1929-30), Assistant Professor (1930—), Oregon State.

*On leave of absence 1933-34.
†On leave of absence 1934-35.

JOSEPH PARKE MEHLIG, Ph.D. ..... School of Science
Associate Professor of Analytical Chemistry

B.S. (1908), M.S. (1910), Ph.D. (1931), Purdue. Assistant (1908-10), Purdue; Instructor (1920-24), Assistant Professor (1924-34), Associate Professor (1934—), Oregon State.

FRED MERRYFIELD, M.S. ..... School of Engineering
Assistant Professor of Civil Engineering

B.S. (1923), Oregon State; M.S. (1930), North Carolina. Instructor (1929-30), North Carolina; Instructor (1927-29), Assistant Professor (1930—), Oregon State.

ANN MESSICK, B.S. ..... Library
Junior Assistant, Circulation Department, Library

B.S. (1930), College of William and Mary; Certificate in Library Science (1933), California. Technician in Pepper Laboratory (1930-32), Pennsylvania; Junior Assistant in Biology Library (1933-34), California; Junior Assistant (1934—), Oregon State.

EDWIN DAVID MEYER, B.S. ..... School of Engineering
Assistant Professor of Industrial Arts

B.S. (1927), Stout Institute. Instructor (1925-34), Assistant Professor (1934—), Oregon State.

AVA BERTHA MILAM, M.A. ..... School of Home Economics
Dean of the School of Home Economics

Ph.B. (1910), M.A. (1911), Chicago. Instructor (1911), Iowa State; Director of Home Economics and Visiting Professor (1931-32), Yenching University, (Peiping, China), Lingnan University, (Canton), Kwassui College (Nagasoki, Japan), Ewaha College (Soeul, Korea); Assistant Professor (1911-16), Professor (1916-17), Dean (1917—), Oregon State.

WILLIAM EDMUND MILNE, Ph.D. ..... School of Science
Professor of Mathematics; Head of Department

A.B. (1912), Whitman College; A.M. (1913), Ph.D. (1915), Harvard. Assistant (1913-15), Harvard; Instructor (1915-16), Assistant Professor (1916-18), Bowdoin College; Professor (1919-32), Oregon; Professor and Department Head (1932—), Oregon State.

CHARLES BUREN MITCHELL, M.A. ..... Arts and Letters
Professor of Speech; Head of Department

B.A. (1911), DePauw; M.A. (1912), Michigan. Assistant (1911-12), Michigan; Instructor (1912-15), Assistant Professor (1915-18), Associate Professor (1918-20), Michigan State; Professor and Department Head (1920—), Oregon State.

CHARLES ARTHUR MOCKMORE, C.E., M.S. ..... School of Engineering
Professor of Civil Engineering; Head of Department

B.S. (in C.E.) (1920), C.E. (1926), M.S. (1932), Iowa. Instructor (1921-24), Assistant Professor (1925-28), Associate Professor (1929-32), Professor (1932—), Acting Department Head (1933-34), Department Head (1934—), Oregon State.

*ARTHUR RUSSELL MOORE, Ph.D. ..... School of Science
Research Professor of General Physiology

B.A. (1904), Nebraska; Ph.D. (1911), California. Assistant Professor (1911-13), California; Associate Professor (1913-16), Bryn Mawr; Professor of Physiology and Biochemistry (1916-26), Rutgers; Professor (1926-32), Oregon; Professor (1932—), Oregon State.

ELON HOWARD MOORE, Ph.D. ..... Social Science
Professor of Sociology; In Charge of Department

A.B. (1919), Albion College; Ph.D. (1927), Wisconsin. Fellow (1925-26), Wisconsin; Assistant (1926-27), Instructor (1927-28), Illinois; Professor (1928—), Oregon State.

JAMES CECIL MOORE, M.S. ..... School of Agriculture
Assistant Professor of Horticulture; Assistant Horticulturist (Pomology), Agricultural Experiment Station

B.S. (1926), Oregon State; M.S. (1927), Iowa State. Junior Physiologist (1927-31), United States Department of Agriculture; Assistant Horticulturist (1932-33), Assistant Professor (1933—), Oregon State.

*On leave of absence.

FRED BUCKNER MORGAN, M.S. ..... School of Science
Assistant Professor of Physics

B.Ped. (1910), Kirksville State Normal (Missouri); A.B. (1915), B.S. (1915), Missouri; M.S. (1930), Pittsburgh. Assistant Professor (1932-34), Oregon; Instructor (1929-30), Assistant Professor (1930-32, 1934—), Oregon State.

ROGER WILLIAM MORSE, B.S. ..... Federal Cooperative Extension
Extension Dairyman

B.S. (1916), Washington State. County Agricultural Agent (1921-23), Wyoming; County Agricultural Agent (1923-30), Extension Dairyman (1930—), Oregon State.

DON CARLOS MOTE, Ph.D. ..... School of Science
Professor of Entomology; Head of Department; Entomologist in Charge, Agricultural Experiment Station

B.S. (1911), M.S. (1912), Ph.D. (1928), Ohio State. Associate Entomologist (1923-24), Assistant and Acting Head (1924-25), Professor (Department Head) and Entomologist in Charge (1925—), Oregon State.

OTTO HERBERT MUTH, D.V.M. ..... School of Agriculture
Instructor in Veterinary Medicine; Assistant Veterinarian, Agricultural Experiment Station

D.V.M. (1929), Michigan State. Assistant Veterinarian (1929—), Instructor (1931—), Oregon State.

ALICE BELLE MYERS, M.A. ..... Arts and Letters
Instructor in Modern Languages

A.B. (1923), Reed College; M.A. (1927), California. Assistant (1923-26), Reed College; Professor (1928-32), Pacific College; Instructor (1932—), Oregon State.

HERBERT BENJAMIN NELSON, M.A. ..... Arts and Letters
Assistant Professor of English

A.B. (1926), M.A. (1927), Colorado. Instructor (1927-34), Assistant Professor (1934—), Oregon State.

MILTON NELS NELSON, Ph.D. ..... Social Science
Professor of Economics; Head of Department

A.B. (1915), M.A. (1917), Ph.D. (1921), Illinois. Teaching Assistant (1916-17), Fellow in Economics (1919-21), Instructor (1921-22), Minnesota; Instructor (1922-23), Illinois; Assistant Professor (1923-26), Ohio State; Professor (Department Head) and Agricultural Economist (1926—), Oregon State.

ORAN MILTON NELSON, M.S. ..... School of Agriculture
Professor of Animal Husbandry; Animal Husbandman, Agricultural Experiment Station

B.S. (1913), M.S. (1930), Wisconsin. Assistant (1929-30), Wisconsin; Instructor in Animal Husbandry (1913-17), Assistant Professor (1917-18), Associate Professor (1918-21), Professor and Animal Husbandman (1921—), Oregon State.

BEN HODGE NICHOLS, M.S. ..... School of Engineering
Assistant Professor of Electrical Engineering

B.S. (in M.E.) (1919), M.S. (in E.E.) (1932), Oregon State. Instructor in Mechanical Engineering (1919-20), Instructor in Electrical Engineering (1921-34), Assistant Professor (1934—), Oregon State.

CLARIBEL NYE, M.A. ..... Federal Cooperative Extension
State Leader of Home Economics Extension; Professor of Home Economics Extension

B.S. (1914), Cornell; M.A. (1927), Columbia. Assistant (1914-17), Assistant Emergency State Home Demonstration Leader (1917-18), Assistant Extension Professor (1918-25), Extension Professor and Associate State Home Demonstration Leader (1925-29), Cornell; Professor and State Leader (1929—), Oregon State.

*ALFRED WEAVER OLIVER, M.S. ..... School of Agriculture
Assistant Professor of Animal Husbandry; Assistant Animal Husbandman, Agricultural Experiment Station

B.S. (1918), Oregon State; M.S. (1928), Wisconsin. Instructor (1918-19), Idaho; Instructor (1919-22), Assistant Professor and Assistant Animal Husbandman (1922—), Oregon State.

THOMAS ONSDORFF, B.S. ..... School of Agriculture
Assistant Professor of Horticultural Products; Assistant Horticulturist (Horticultural Products), Agricultural Experiment Station

B.S. (1924), Oregon State. Instructor (1928-31), Assistant Professor and Assistant Horticulturist (1931—), Oregon State.

DANIEL THOMAS ORDEMAN, Ph.D. ..... Arts and Letters
Assistant Professor of English

A.B. (1920), M.A. (1922), Washington and Lee; Ph.D. (1927), Maryland. Assistant Professor (1927—), Oregon State.

JOHN LYNN OSBORN, A.M. ..... School of Science
Assistant Professor of Zoology

Ph.C. (1915), Michigan; A.B. (1922), Kansas; A.M. (1923), Nebraska. Assistant Instructor (1922-23), Nebraska; Instructor (1923-34), Assistant Professor (1934—), Oregon State.

JAMES CAREY OTHUS, M.E., M.S. ..... School of Engineering
Assistant Professor of Mechanical Engineering

M.E. (1917), Cornell; M.S. (1932), Illinois. Instructor (1921-26), Assistant Professor (1926—), Oregon State.

CHARLES ELMER OWENS, A.M. ..... School of Science
Professor of Botany and Plant Pathology; Acting Head of Department; Plant Pathologist, Agricultural Experiment Station

A.B. (1910), A.M. (1911), Indiana. Teaching Fellow (1909-12), Indiana; Instructor (1912-16), Assistant Professor (1916-20), Associate Professor (1920-30), Professor (1930—), Acting Department Head (1934—), Oregon State.

EARL LEROY PACKARD, Ph.D. ..... School of Science
Dean of the School of Science; Professor of Geology; Head of Department

A.B. (1911), M.A. (1912), Washington; Ph.D. (1915), California. Fellow (1912-14), California; Instructor (1915-16), Washington; Department Head (1917-18), Mississippi A & M. College; Assistant Professor (1916-17), Professor (1918-32), Department Head (1930-32), Oregon; Dean and Professor (Department Head) (1932—), Oregon State.

FRANK WINTHROP PARR, Ph.D. ..... School of Education
Professor of Secondary Education

B.S. (1925), Illinois; M.A. (1926), Ph.D. (1929), Iowa. Research Assistant (1925-26), Teaching Fellow (1928-29), Iowa; Professor (1929—), Oregon State.

HENRY RICHARD PATTERSON, JR., B.S. ..... School of Forestry
Professor of Logging Engineering; Head of Department

B.S. (in C.E.) (1909), Oregon. Associate Professor (1920-23), Professor and Department Head (1923—), Oregon State.

COLONEL WILLIAM HENRY PATTERSON ..... Military Science and Tactics
Commandant; Professor of Military Science and Tactics

Graduate (1924), Command and General Staff School. Commandant and Professor (1930—), Oregon State.

WILLIAM HOWARD PAUL, B.S. ..... School of Engineering
Instructor in Mechanical Engineering

B.S. (in M.E.) (1924), Oregon State. Instructor (1926—), Oregon State.

*On leave of absence 1933-34.

CHARLES S PEASE, Ph.D. ..... School of Science
Assistant Professor of Organic Chemistry

B.S. (1918), Denison University; Ph.D. (1928), Ohio State. Assistant (1919-25), Ohio State; Instructor (1925-30), Assistant Professor (1930—), Oregon State.

ARTHUR LEE PECK, B.S., B.A. ..... Architecture and Allied Arts
Professor of Landscape Architecture; Head of Department

B.S. (1904), Massachusetts Agricultural; B.A. (1904), Boston. Instructor (1907-08), Kansas State; Instructor (1908-09), Assistant Professor (1910-11), Associate Professor (1912-15), Professor (1917—), Department Head (1932—), Oregon State; Professor and Department Head (1932—), Oregon.

SIGURD HARLAN PETERSON, Ph.D. ..... Arts and Letters
Professor of English; Head of Department

A.B. (1910), Minnesota; Ph.D. (1931), Washington. Instructor (1911-14), Assistant Professor (1914-21), Associate Professor (1921-32), Department Chairman (1932-33), Professor and Department Head (1933—), Oregon State.

LILLIAN JEFFREYS PETRI ..... Music
Professor of Piano and Music Theory

Professor (1924—), Oregon State.

PAUL PETRI ..... Music
Director of Music; Professor of Singing and Conductor of Choruses; Head of Department

Director and Professor (Department Head) (1924—), Oregon State; Professor (1933—), Oregon.

MARK CLYDE PHILLIPS, B.M.E. ..... School of Engineering
Associate Professor of Mechanical Engineering

B.M.E. (1896), Oregon State. Instructor (1897-1909), Associate Professor (1909—).

ERMINE LAWRENCE POTTER, M.S. ..... School of Agriculture
Professor of Agricultural Economics; In Charge, Division of Agricultural Economics; Agricultural Economist, Agricultural Experiment Station

B.S. (1906), Montana State; B.S.A (1908), M.S. (1920), Iowa State. Instructor (1908-10), Assistant Professor (1910-11), Professor and Agricultural Economist (1911—), Department Head (1913—), In Charge of Division (1933—), Oregon State.

WILBUR LOUIS POWERS, Ph.D. ..... School of Agriculture
Professor of Soils; Head of Department; Soil Scientist in Charge, Agricultural Experiment Station

B.S. (1908), M.S. (1909), New Mexico Agricultural; Ph.D. (1926), California. Research Fellow (1908-09), New Mexico Agricultural; Instructor (1909-12), Assistant Professor (1912-14), Associate Professor (1914-15), Professor (1915—), Department Head and Soil Scientist in Charge (1918—), Oregon State.

SARA WATT PRENTISS, M.A. ..... School of Home Economics
Professor of Child Development and Parent Education; Acting Head of Department of Household Administration

B.S. (1917), Oregon State; M.A. (1929), California. Instructor (1917-21), Assistant Professor (1921-31), Professor (1931—), Acting Department Head (1932—), Oregon State.

FREDERICK EARL PRICE, B.S. ..... Agricultural Experiment Station
Agricultural Engineer

B.S. (1922), Oregon State. Extension Agronomist (1922), Montana State; Extension Specialist in Soils and Agricultural Engineering (1922-28), Agricultural Engineer (1929—), Oregon State.

*HENRY HARDY RAMPTON, M.S. ..... School of Agriculture
Instructor in Farm Crops

B.S. (1928), Utah State; M.S. (1933), Oregon State. Fellow (1931-33), Instructor (1933-34), Oregon State.

GEORGE REBEC, Ph.D. ..... Graduate Division
Dean of the Graduate Division; Professor of Philosophy; Head of Department

A.B. (1891), Ph.D. (1896), Michigan. Instructor in English (1891-93), Instructor (1894-1902), Assistant Professor (1902-05), Junior Professor (1905-09), Michigan; Professor of Education (1920-21, 1931-32), Reed College; Professor and Department Head (1912—), Director of Portland Extension (1918-20), Dean (1920—), Oregon; Dean (1933—), Oregon State.

EDWIN THOMAS REED, B.S., A.B. ..... Division of Information
Editor of Publications; Head of Department

B.S. (1895), Minnesota; A.B. (1896), Harvard. Head of English Department (1901-12), State Teachers College, Moorehead, Minnesota; Editor (Professor) and Department Head (1912—), Oregon State.

NATALIE REICHART, M.A. ..... Physical Education
Instructor in Physical Education for Women

B.S. (1924), Columbia; M.A. (1929), New York. Instructor (1924-25), Washington State; Instructor (1925—), Oregon State.

DANIEL CLYDE REYNOLDS, M.D. ..... Health Service
Professor of Hygiene; Director of Health Service

B.S. (1916), M.D. (1918), Michigan. Director Health Service (1920-22), Michigan State; Physician, Health Service (1918-20, 1922-29), Michigan; Professor and Director (1929—), Oregon State.

LUCILE WINIFRED REYNOLDS, M.A. ..... School of Home Economics
Associate Professor of Household Administration

B.S. (1921), Minnesota; M.A. (1927), Chicago. Associate Professor (1933—), Oregon State.

ROBERT CHARLES RHYNEARSON, M.S. ..... School of Engineering
Instructor in Machine Shop

B.S. (1928), M.S. (1932), Purdue. Instructor (1933—), Oregon State.

CAPTAIN LOWELL M. RILEY ..... Military Science and Tactics
Assistant Professor of Military Science and Tactics

Assistant Professor (1934—), Oregon State.

ELIZABETH PROPHET RITCHIE, A.B., B.L.S. ..... Library
Head Cataloger, Library

A.B. (1900), Cotner College; B.L.S. (1909), Illinois. Head Cataloger (Assistant Professor) (1920—), Oregon State.

COWIN COOK ROBINSON, A.M. ..... School of Science
Instructor in Chemistry

A.B. (1924), Sterling College, (Kansas); A.M. (1925), Kansas. Instructor (1926—), Oregon State.

FRANK LESLIE ROBINSON, M.Acct. ..... Business Administration
Associate Professor of Accounting

M.Acct. (1894), Upper Iowa University. Instructor (1919-22), Assistant Professor (1923-27), Associate Professor (1928—), Oregon State.

REGINALD HEBER ROBINSON, M.S. ..... Agricultural Experiment Station
Chemist (Insecticides and Fungicides)

A.B. (1909), Pacific; M.S. (1912), California. Assistant Chemist (1911-18), Associate Chemist (1918-24), Chemist (1924—), Oregon State.

*Resigned.

BENJAMIN WILLIAM RODENWOLD, M.S. ..... School of Agriculture
Assistant Professor of Animal Husbandry

B.S. (1920), Nebraska; M.S. (1929), Iowa State. Assistant (1918-20), Nebraska; Fellow (1928-29), Iowa State; Assistant Professor (1920—), Oregon State.

ZELTA FEIKE RODENWOLD, M.S. ..... School of Home Economics
Director of Home Economics Radio Programs, Station KOAC; Assistant Professor of Home Economics Extension

B.S. (1919), Oregon State; M.S. (1929), Iowa State. Secretary, School of Home Economics (1919-21); Secretary, Alumni Association (1921-26), Extension Economist in Home Management (1930-32), Director and Assistant Professor (1932—), Oregon State.

CAPTAIN LEWIS TENNEY ROSS ..... Military Science and Tactics
Associate Professor of Military Science and Tactics

Graduate (1918), U. S. Military Academy; Graduate (1921), Engineer School. Associate Professor (1932—), Oregon State.

CHARLES VLADIS RUZEK, M.S. ..... School of Agriculture
Professor of Soil Fertility; Soil Scientist (Fertility), Agricultural Experiment Station

B.S.A. (1909), M.S. (1929), Wisconsin. Associate Professor (1909-14), Arkansas; Assistant Professor (1914-17), Associate Professor (1917-22), Professor and Soil Scientist (1922—), Oregon State.

AZALEA LINFIELD SAGER, M.A. ..... Federal Cooperative Extension
Associate Professor of Clothing, Textiles, and Related Arts; State Specialist in Clothing and Textiles

B.S. (1919), Montana State; M.A. (1921), Columbia. Extension Specialist (1921-24), South Dakota State; Home Demonstration Agent (1926-30), California; Associate Professor and Extension Specialist (1932—), Oregon State.

CARL WALTER SALSER, Ed.M. ..... School of Education
Professor of Education; Head of Department; Head of Personnel and Placement; Assistant Dean of the School of Education

A.B. (in Ed.) (1911), Kansas State Teachers College (Emporia); Ed.M. (1926), Harvard. Professor and Director of Extension Division (1914-29), Head, Appointment Bureau (1911-14), Kansas State Teachers College (Emporia); Professor and Department Head (1929—), Assistant to the Dean (1932-34), Assistant Dean (1934—), Oregon State.

ETHEL IDA SANBORN, Ph.D. ..... School of Science
Associate Professor of Botany

B.S. (1903), South Dakota State; B.A. (1904), M.A. (1907), South Dakota; Ph.D. (1928), Stanford. Curator of Herbarium (1914-17), Instructor (1918-27), Assistant Professor (1928-32), Oregon; Assistant Professor (1932-33), Associate Professor (1933—), Oregon State.

WILLIAM ALFRED SCHOENFELD, M.B.A. ..... School of Agriculture
Dean of the School of Agriculture; Director of the Agricultural Experiment Station

B.S. (1914), Wisconsin; M.B.A. (1922), Harvard. Assistant Instructor (1912-14), Secretary of Experiment Station (1914), Wisconsin; Adjunct Professor (1914-15), Texas; Assistant and Acting Director of Extension (1915-20), Tennessee; Lecturer (1921), Massachusetts Institute of Technology; Dean and Director (1931—), Oregon State.

DOROTHY SMITH SCHREINER, M.S. ..... School of Home Economics
Assistant in Home Economics Research

B.S. (1925), Wisconsin; M.S. (1931), Oregon State. Assistant in Home Economics Research (1931—), Oregon State.

FRED JACOB SCHREINER, B.S. (L.E.) ..... School of Forestry
Instructor in Logging Engineering

B.S. (L.E.) (1927), Oregon State. Instructor (1927—), Oregon State.

HENRY DESBOROUGH SCUDDER, B.S. ..... School of Agriculture
Professor of Farm Management; Head of Department; Economist in Charge (Farm Management), Agricultural Experiment Station

B.S. (1902), Illinois. Assistant (1906-07), Kansas State; Professor (Department Head) and Economist in Charge (1907—), Oregon State.

HERMAN AUSTIN SCULLEN, M.A. ..... School of Science
Associate Professor of Entomology

B.A. (1910), M.A. (1927), Oregon. Instructor (1912-14), Assistant Professor (1914-18), Iowa State; Instructor (1921-22), Assistant Professor (1922-29), Associate Professor (1929—), Oregon State.

OWEN LESTER SEARCY, B.S. ..... Agricultural Experiment Station
Technician (Veterinary Medicine)

B.S. (1928), Oregon State. Technician (1928—), Oregon State.

*HALBERT EDGERTON SELBY, M.S. ..... Agricultural Experiment Station
Associate Economist (Farm Management)

B.S. (1916), M.S. (1932), Oregon State. Assistant Professor (1920-25), Montana State; Instructor (1919-20), Assistant Professor (1925-28), Associate Economist (1928—), Oregon State.

HARRY CASE SEYMOUR ..... Federal Cooperative Extension
State Leader of 4-H Club Work

State Leader of 4-H Club Work (1916—), Oregon State.

JAMES NIVEN SHAW, D.V.M. ..... School of Agriculture
Associate Professor of Veterinary Medicine; Associate Veterinarian, Agricultural Experiment Station

B.S. (1915), Oregon State; B.S., D.V.M. (1917), Washington State. Instructor (1919-21, 1926-27), Assistant Professor (1927-34), Associate Professor (1934—), Oregon State.

FRED MURIEL SHIDELER, B.S. ..... Journalism
Assistant Professor of Journalism; In Charge of Department; Assistant in News Service

B.S. (1927), Kansas State. Instructor (1929-32), Assistant Professor (1932—), Oregon State.

JOSEPH ELLSWORTH SIMMONS, M.S. ..... School of Science
Associate Professor of Bacteriology; Associate Bacteriologist, Agricultural Experiment Station

B.S. (1916), M.S. (1918), Wisconsin. Instructor (1916), Ontario Agricultural College; Instructor (1916-17), Wisconsin; Instructor (1919-20), Assistant Professor (1920-26), Associate Professor and Associate Bacteriologist (1926—), Oregon State.

BENNETT THOMAS SIMMS, D.V.M. ..... School of Agriculture
Professor of Veterinary Medicine; Head of Department; Veterinarian in Charge, Agricultural Experiment Station

D.V.M. (1911), Alabama Polytechnic Institute. Instructor (1911-13), North Carolina A. & M. College; Assistant Professor (1913-14), Professor (Department Head) and Veterinarian in Charge (1914—), Oregon State.

MIRIAM EGAN SIMONS, M.A. ..... School of Education
Critic Teacher in Commercial Education

B.S. (1929), Oregon State; M.A. (in Ed.) (1931), Southern California. Critic Teacher (1931—), Oregon State.

*On leave of absence 1933-34.

HERBERT REEVES SINNARD, M.S. ..... Architecture and Allied Arts
Assistant Professor of Landscape Architecture

B.S. (1927), M.S. (1929), Iowa State. Assistant (1928-29), Iowa State; Assistant Professor (1932-34), Oregon; Instructor (1929-32), Assistant Professor (1934—), Oregon State.

GORDON VERNON SKELTON, C.E. ..... School of Engineering
Professor of Highway Engineering

B.S. (1891), C.E. (1894), Arkansas. Professor of Mathematics and Civil Engineering (1892-95), Coe College; Professor of Mathematics (1895-1907), Professor of Civil Engineering (1900-13), Professor of Highway Engineering (Department Head 1913-34) (1913—), Oregon State.

GERTRUDE LONETTE SKOW, B.S. ..... Federal Cooperative Extension
County Home Demonstration Agent at Large

B.S. (1928), Oregon State. Home Demonstration Agent, Lane County (1929-33), Agent at Large (1933—), Oregon State.

DAVID CLYDE SMITH, Ph.D. ..... School of Agriculture
Assistant Professor of Farm Crops; Assistant Agronomist, Agricultural Experiment Station

B.S. (1926), Utah State; M.S. (1928), Oregon State; Ph.D. (1934), Minnesota. Graduate Assistant (1926-28), Instructor (1928-31), Assistant Agronomist (Assistant Professor) (1934—), Oregon State.

EDWIN MONROE SMITH, B.S.D. ..... Business Office
Business Manager

B.S.D. (1891), Oregon Normal School. Requisition and Order Clerk (1915-18), Chief Clerk (1918-20), Assistant Manager (1920-25), Manager (Department Head) (1925—). Oregon State.

MAHLON ELLWOOD SMITH, Ph.D. ..... Lower Division
Dean of Lower Division; Dean of Lower Division and Service Departments; Professor of English

A.B. (1906), Syracuse; M.A. (1909), Ph.D. (1912), Harvard. Assistant (1906-07), Instructor (1907-08), Assistant Professor (1912-17), Professor and Director of Summer Session (1917-19), Director of Evening Session (1918-19), Syracuse; Dean of School of Basic Arts and Sciences and Director of Summer Session (1919-32), Professor of English (1919—), Dean of Lower Division and Service Departments (1934—), Oregon State; Dean (1932—), Oregon State and Oregon.

RACHEL CARLETON SPARKS, M.D. ..... Health Service
College Physician; Assistant Professor of General Hygiene

B.S. (1922), M.B. (1923), Minnesota; M.D. (1924), Research Hospital (Kansas City, Missouri). Assistant Director of Health Service and Examiner of Women (1928-30), Kansas; College Physician (1930—), Oregon State.

MAJOR WILLIAM SPENCE ..... Military Science and Tactics
Associate Professor of Military Science and Tactics

Associate Professor (1934—), Oregon State.

ELEANOR MAY SPIKE, M.S. ..... School of Home Economics
Instructor in Household Administration

B.S. (1925), M.S. (1933), Oregon State. Teaching Fellow (1931-32), Instructor (1932—), Oregon State.

THURMAN JAMES STARKER, B.S. ..... School of Forestry
Professor of Forestry; Head of Department

B.S. (1910), Oregon State. Assistant Professor (1922-23), Associate Professor (1923-24), Professor and Department Head (1924—), Oregon State.

*EUGENE CARL STARR, B.S. ..... School of Engineering
Assistant Professor of Electrical Engineering

B.S. (1923), Oregon State. Instructor (1927-30), Assistant Professor (1930—), Oregon State.

*On leave of absence 1933-34.

ROSCOE ELMO STEPHENSON, Ph.D. ..... School of Agriculture
Associate Professor of Soils; Associate Soil Scientist, Agricultural Experiment Station

B.S. (1915), Purdue; M.S. (1917), Illinois; Ph.D. (1920), Iowa State. Soil Chemist (1918-20), West Virginia; Specialist in Soils (1920-23), Kentucky; Associate Professor and Associate Soil Scientist (1923—), Oregon State.

EDWARD ALMERON STEVENS, LL.B. ..... Physical Education
Instructor in Physical Education

LL.B. (1909), Cornell. Assistant Coach of Rowing (1911-12), Cornell; Head Coach of Rowing (1923-26), Harvard; Instructor (1931—), Oregon State.

ALONZO L. STINER, B.S. ..... Physical Education
Instructor in Physical Education; Head Football Coach

B.S. (1927), Nebraska. Assistant Football Coach (1927-28), Colorado; Instructor, Track Coach, and Assistant Football Coach (1928-33), Head Coach of Bootball (1933—), Oregon State.

GERTRUDE STRICKLAND ..... School of Home Economics
Instructor in Clothing, Textiles, and Related Arts

Instructor (1912-18), College of Industrial Arts (Denton, Texas); Instructor (1918-19), Washington State; Instructor (1920—), Oregon State.

ERNST THEODORE STUHR, M.S. ..... School of Pharmacy
Associate Professor of Pharmacology and Pharmacognosy; In Charge of Department

Ph.G. (1922), Ph.C. (1922), B.S. (1925), Nebraska; M.S. (1927), Florida. Assistant in Physiology and Pharmacology (1920-22), Nebraska; Instructor in Pharmacognosy (1925-27), Florida; Assistant Professor (1927-30), Associate Professor (1930—), Oregon State.

BERTHA WHILLOCK STUTZ, M.S. ..... Secretarial Science
Associate Professor of Secretarial Science

B.Ped. (1910), Missouri State Teachers College; B.S. (1918), M.S. (1927), Oregon State. Instructor (1918-27), Assistant Professor (1927-29), Associate Professor (1929—), Oregon State.

ROBERT EDWARD SUMMERS, M.S. ..... School of Engineering
Assistant Professor of Mechanical Engineering

B.S. (1924), M.S. (1933), Oregon State. Instructor (1924-25), Kansas State; Instructor (1925-30), Assistant Professor (1930—), Oregon State.

GRANT ALEXANDER SWAN, B.S. ..... Physical Education
Assistant Professor of Physical Education; Coach of Track

B.S. (1922), Oregon State. Instructor (1926-30), Assistant Professor (1930—), Oregon State.

NICHOLAS TARTAR, B.S. ..... School of Science
Associate Professor Emeritus of Mathematics

B.S. (1907), Oregon State. Instructor (1904-09), Assistant Professor (1909-29), Associate Professor (1929-32), Associate Professor Emeritus (1932—), Oregon State.

LILLIAN CATHERINE TAYLOR, M.A. ..... School of Home Economics
Instructor in Foods and Nutrition

B.S. (1916), Illinois; M.A. (1927), Columbia. Instructor (1919—), Oregon State.

WILLIAM LEROY TEUTSCH, B.S. ..... Federal Cooperative Extension
Assistant County Agent Leader

B.S. (1920), Oregon State. County Agricultural Agent (1920-23), District Agricultural Agent (1924-27), Assistant County Agent Leader (1927—), Oregon State.

CHARLES EDWIN THOMAS, M.M.E. ..... School of Engineering
Associate Professor of Engineering Materials

M.E. (1913), M.M.E. (1931), Cornell. Instructor (1914-17), Cornell; Assistant Professor (1918-22), Associate Professor (1922—), Oregon State.

BENJAMIN GARRISON THOMPSON, M.S. ..... Agricultural Experiment Station
Assistant Entomologist

B.S. (1918), M.S. (1924), Oregon State. Assistant Entomologist (1924—), Oregon State.

BETTY LYND THOMPSON, M.A. ..... Physical Education
Assistant Professor of Physical Education for Women

A.B. (1923), Illinois Wesleyan; M.A. (1926), Wisconsin. Instructor (1924-25), Illinois Wesleyan; Instructor (1927-30), Assistant Professor (1930—), Oregon State.

ELNORA ELVIRA THOMSON, R.N. ..... School of Science
Professor of Nursing Education; Director of Department

R.N. (1910), Illinois; R.N. (1920), Oregon. Professor of Applied Sociology and Director of Nursing Education, Portland School of Social Work (1920-23, 1925-31); Professor and Director of Nursing Education (1931—), University of Oregon Medical School.

EDWARD FRITCHOFF TORGERSON, B.S. ..... School of Agriculture
Assistant Professor of Soils; Assistant Soil Scientist (Soil Survey), Agricultural Experiment Station

B.S. (1914), Illinois. First Assistant in Experiment Station and Instructor in Soils (1914-18), Illinois; Assistant Professor and Assistant Soil Scientist (1918—), Oregon State.

REX UNDERWOOD ..... Music
Professor of Stringed Instruments; Conductor of the College Orchestra

Professor (1919—), Oregon; Professor (1933—), Oregon State.

HERBERT TOWNSEND VANCE, M.S. ..... Secretarial Science
Professor of Business Administration; Professor of Secretarial Science, Head of Department

B.S. (1924), M.S. (1927), Oregon State. Assistant Professor (1916-17), Professor and Department Head (1919—), Oregon State.

JOHN ALBERT VAN GROOS, M.S. ..... School of Science
Assistant Professor of Mathematics

B.S. (1899), Oregon State; M.S. (1903), Yale. Instructor (1919-22), Assistant Professor (1922—), Oregon State.

WILLIAM ROY VARNER, M.S., E.E. ..... School of Science
Instructor in Physics

B.S. (1912), M.S. (1932), Oregon State; E.E. (1914), Carnegie Institute of Technology. Instructor (1933-34), Oregon; Instructor (1929-33, 1934—), Oregon State.

EARNEST VANCOURT VAUGHN, Ph.D. ..... Social Science
Associate Professor of History; In Charge of Department

B.L. (1900), M.A. (1904), Missouri; Ph.D. (1910), Pennsylvania. Assistant (1905-10), Instructor (1910-11), Missouri; Professor and Department Head (1911-22), Delaware; Associate Professor (1924—), Oregon State.

SERGEANT LUTHER LAFAYETTE WADE ..... Military Science and Tactics
Assistant to Professor of Military Science and Tactics

Assistant (1931—), Oregon State.

CLYDE WALKER, M.S. ..... School of Agriculture
Associate Professor of Agricultural Engineering

B.S. (1924), M.S. (1930), Nebraska. Instructor (1928-29), Assistant Professor (1929-32), Associate Professor (1932—), Oregon State.

GLEN CHASE WARE, M.S. ..... School of Science
Instructor in Chemistry

B.S. (1918), M.S. (1928), Kansas State. Assistant (1927-28), Kansas State; Instructor (1928—), Oregon State.

HARRIET JANET WARNER, A.B. ..... Library
Senior Reference Assistant, Library

A.B. (1919), California. Senior Reference Assistant (1930—), Oregon State.

*REX WARREN, M.S. ..... School of Agriculture
Instructor in Farm Crops

B.S. (1931), Utah State; M.S. (1933), Oregon State. Fellow (1931-33), Instructor (1933-34), Oregon State.

ERNEST WILLIAM WARRINGTON, M.A. ..... Religion
Professor of Religion; Head of Department

A.B. (1905), Delaware; M.A. (1907), Princeton. General Secretary of Student Y.M.C.A. (1921-26), Professor and Department Head (1928—), Oregon State; Professor (1933—), Oregon.

†IVAN FREDERIC WATERMAN, C.E. ..... School of Engineering
Assistant Professor of Civil Engineering

B.S. (1910), John B. Stetson University; C.E. (1912), Wisconsin. Instructor (1912-16), John B. Stetson University; Instructor (1919-21), Assistant Professor (1921—), Oregon State.

EARL WILLIAM WELLS, J.D. ..... Arts and Letters
Associate Professor of Speech

A.B. (1921), Iowa; M.A. (1927), Wisconsin; J.D. (1928), Iowa. Instructor (1926-27), Wisconsin; Instructor (1921-26), Assistant Professor (1927-30), Associate Professor (1930—), Oregon State.

WILLIBALD WENIGER, Ph.D. ..... School of Science
Assistant Dean of the Graduate Division; Professor of Physics; Head of Department

B. A. (1905), M.A. (1906), Ph.D. (1908), Wisconsin. Assistant in Physics (1905-06), Fellow (1906-08), Wisconsin; Instructor (1908-09), Assistant Professor (1909-10), Professor and Department Head (1910-14, 1920—), Assistant Dean (1934—), Oregon State.

RUTH VEE WHEELOCK, M.A., R.N. ..... School of Science
Assistant Professor of Nursing Education

B.A. (1911), M.A. (1915), Michigan; Diploma (1920), Bellevere School of Nursing; R.N. (1920), New York, Michigan, California, Oregon. Instructor (1921-26), Michigan; Director (1927-33), Riverside Junior College Department of Nursing Education; Assistant Professor (1933—), University of Oregon Medical School.

HAROLD H. WHITE, B.S. ..... Federal Cooperative Extension
Assistant Extension Economist

B.S. (1920), Oregon State. Instructor in Agricultural Education (1923-27), Assistant Extension Economist (1931—), Oregon State.

ERNEST HERMAN WIEGAND, B.S.A. ..... School of Agriculture
Professor of Horticultural Products; Horticulturist (Horticultural Products), Agricultural Experiment Station

B.S.A. (1914), Missouri. Poultry Specialist (1917-19), United States Department of Agriculture; Professor and Horticulturist (1919—), Oregon State.

---

*Resigned.
†On leave of absence 1933-34.

WILLIAM DONALD WILKINSON, Ph.D. ..... School of Science
Assistant Professor of Geology

B.A. (1923), Ph.D. (1932), Oregon. Fellow (1923-24), California; Graduate Assistant (1927-28), Teaching Fellow (1928-30), Instructor (1930-32), Oregon; Instructor (1932-33), Assistant Professor (1933—), Oregon State.

EARL CLARK WILLEY, B.S. ..... School of Engineering
Instructor in Mechanical Engineering

B.S. (1921), Oregon State. Instructor (1922—), Oregon State.

GEORGE ALFRED WILLIAMS, A.M. ..... School of Science
Assistant Professor of Mathematics

A.B. (1918), Illinois; A.M. (1926), California. Instructor (1920-27), Assistant Professor (1927—), Oregon State.

JESSAMINE CHAPMAN WILLIAMS, M.A. ..... School of Home Economics
Professor of Foods and Nutrition; Head of Department

B.S. (1906), M.A. (1921), Columbia. Head, Home Economics Department (1906-11), Sweet Briar College (Virginia); Head, Home Economics Department (1912-13), Oklahoma State; Professor (1914-23), Arizona; Professor and Department Head (1923—), Oregon State.

ROGER JOHN WILLIAMS, Ph.D., D.Sc. ..... School of Science
Professor of Chemistry

B.S. (1914), D.Sc. (1934), University of Redlands; M.S. (1918), Ph.D. (1919), Chicago. Assistant Professor (1920-21), Associate Professor (1921-29), Professor (1929-32), Oregon; Professor (1932—), Oregon State.

MAUD MATHES WILSON, A.M. ..... Agricultural Experiment Station
Home Economist, Agricultural Experiment Station; Professor in Charge of Home Economics Research

B.S. (1913), Nebraska; A.M. (1931), Chicago. Instructor (1913-15), in Charge of Home Economics Extension (1915-18), Nebraska; State Leader of Home Economics Extension (1918-22), Assistant Director of Extension (1922-25), Washington State; Home Economist and Professor (1925—), Oregon State.

GUSTAV HANS WILSTER, Ph.D. ..... School of Agriculture
Professor of Dairy Manufacturing

B.S., M.S. (1921), Ph.D. (1928), Iowa State. Professor of Dairy Manufacturing (1921-25, 1927-28), Utah State; Professor and Dairy Husbandman (1929—), Oregon State.

STAFF SERGEANT CLARENCE CALVIN WOODBURY ..... Military Science and Tactics
Assistant to Professor of Military Science and Tactics

Assistant (1920—), Oregon State.

SERGEANT JOHN CARSON WOODBURY ..... Military Science and Tactics
Assistant to Professor of Military Science and Tactics

Assistant (1920—), Oregon State.

LAWRENCE FISHER WOOSTER, M.S. ..... School of Engineering
Professor of Applied Electricity

B.S. (in E.E.) (1906), Illinois; M.S. (1931), Oregon State. Instructor (1910-14), Assistant Professor (1914-19), Superintendent of Light and Power (1914-19), Professor (1919—), Oregon State.

ROSALIND WULZEN, Ph.D. ..... School of Science
Assistant Professor of Zoology

B.S. (1904), M.S. (1910), Ph.D. (1914), California. Head of Department (1909-13), Mills College; Instructor (1914-28), California; Instructor (1928-29), Assistant Professor (1929—), Oregon; Assistant Professor (1933—), Oregon State.

DeLoss Palmer Young, B.S. ..... Arts and Letters

Instructor in Speech and Dramatics

B.S. (1926), Oregon State. Instructor (1927—), Oregon State.

Edwin Arthur Yunker, Ph.M. ..... School of Science

Assistant Professor of Physics

A.B. (1924), California; Ph.M. (1930), Wisconsin. Instructor (1925-33), Assistant Professor (1933—), Oregon State.

Sanford Myron Zeller, Ph.D. ..... Agricultural Experiment Station

Plant Pathologist

B.S. (1909), Greenville College; A.B. (1912), A.M. (1913), Washington; Ph.D. (1917), Washington University (St. Louis). Assistant Professor (1909-13), Seattle Pacific College; Instructor (1913-14), Washington; Fellow (1914-19), Washington University (St. Louis); Assistant Professor and Assistant Plant Pathologist (1919-20), Associate Professor and Associate Plant Pathologist (1920-24), Professor and Plant Pathologist (1924—), Oregon State.

Adolph Ziefle, Phar.D. ..... School of Pharmacy

Dean of the School of Pharmacy; Professor of Pharmacy

Ph.C. (1904), B.S. (1907), M.S. (1919), Michigan; Phar.D. (1928), Pittsburg. Assistant (1905-07), Michigan; Assistant Professor (1907-09), Kansas; Professor (1909-14), North Dakota State; Professor (Department Head) and Dean (1914—), Oregon State.

Part II
Oregon State Agricultural College

Organization and Facilities

History

HISTORY of the State College dates from Oregon's territorial beginnings when in 1856 a community school and meeting house was begun at the corner of Fifth and Madison streets, Corvallis. The institution thus provided for was incorporated in 1858 under the name of Corvallis College. The instruction was coeducational and comprised all grades from the primary to the academic department. In 1865 the College passed under the control of the Methodist Episcopal Church, South. While in its inception and purpose a private enterprise, the institution from the beginning served a public purpose. It was destined to become, not only a state college, but one of a system of national colleges.

A National College. The Federal Land-Grant Act, approved by President Lincoln on July 2, 1862, was designed to inaugurate a new type of higher education. The Act provided Federal aid, derived from what is known as the Land-Grant fund, for each state that should avail itself of the benefits of the Act for the support and maintenance of a "college where the leading objects shall be, without excluding other scientific and classical studies, and including military tactics, to teach such branches of learning as are related to agriculture and the mechanic arts, in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions in life."

Ninety thousand acres of land were appropriated to Oregon; and by an Act approved October 9, 1862, the Legislative Assembly of Oregon accepted the provisions of the Congressional law. The legislature of 1868 provided for the location of the land received under the Act of 1862, and as there were no state colleges in Oregon at that time, Corvallis College was "designated and adopted" as the state's agricultural college and the recipient of the interest on funds to be derived from the sale of this Government land.

A State College. The history of the College as a state institution thus dates from 1868. The first class was graduated in 1870. The legislature in 1870 "permanently adopted" Corvallis College "as the agricultural college of the State of Oregon." During subsequent years the catalog of the institution bore various designations, including "Corvallis State Agricultural College" (1872-1875), "State Agricultural College" (1876-77), "Corvallis College" (1881-82), "Corvallis and Oregon State Agricultural College" (1885-86), "The State Agricultural College of the State of Oregon" (1888-89). In 1885, the State assumed entire control of the institution. During the summer of 1887, the cornerstone of the building erected by the citizens of Benton county on the present campus, then known as the "agricultural college farm," was laid by the Governor of Oregon. This structure is the present Administration Building.

Not until 1889 did the annual enrollment reach a total of one hundred students, but in the nineties it steadily increased and by 1906-07 was eight

hundred and thirty-three. Since then the growth in attendance has been very rapid. For the first thirty years most of the students came from Benton and neighboring counties; today, all counties in Oregon, many other states, and a number of foreign countries are represented. The faculty has increased from a maximum of five in 1884 to three hundred, in addition to many other employees. Year by year the curricula have been strengthened and standards for entrance and graduation have been advanced.

"Liberal and Practical Education." In accordance with the acts of Congress under which it is maintained, the purpose of the College is to provide "liberal and practical education"—education that will prepare for cultured living and civic leadership as well as for efficient service in some occupation requiring collegiate training. Special attention is given to the natural sciences and their applications. While the industrial or technical work is emphasized, thorough general education is recognized as of primary importance in all the work of the institution. State and Federal support imposes upon the College the obligation to give training for intelligent and useful citizenship.

Curricula. The curriculum of the College for a number of years was composed chiefly of the academic and classical subjects originally taught by Corvallis College — mathematics, sciences, history, English, Latin, Greek, philosophy, logic, and political economy. Other subjects were mensuration, mechanics, surveying and navigation, and bookkeeping. In 1869 the first work in Agriculture, a two-year course, was announced.

From 1872 to 1885 the instruction was organized into coordinate divisions, each constituting a major group of studies leading to a degree. The seven divisions, each called a "school," were as follows: Physics, Mathematics, Moral Science, Language, History and Literature, Engineering, Agriculture. In 1885 a single four-year "course of study prescribed by the State" for all students superseded these majors. The new curriculum included mathematics, science, English, languages, philosophy, agriculture, and military training.

For some time neither agriculture nor engineering was a well-developed science or profession. Neither had a literature, or skilled teachers, or tested methods of instruction. At the State College both branches were developed in connection with existing science departments. The first instruction in agriculture was given principally in the Chemistry department, the studies including soil analysis, fertility, drainage, stock raising, fruit culture, and farm buildings. The earliest actual instruction in engineering was about 1888-89, in connection with the department of Mathematics.

The departments of Agriculture and Engineering were the first of their kind in any college in the Pacific Northwest. The same was true of the department of Household Economy established in 1889. By 1889, therefore, definite establishments had been made that were to develop by 1908 into full degree-granting schools of Agriculture, Engineering, and Home Economics. In 1908 also, a School of Commerce was established, the College being among the pioneers in this field likewise.

Other schools soon followed. Forestry, initiated in 1906-7, was organized as a school in 1913. Pharmacy, established as a department in 1898 on

petition of the druggists of the state, was organized as a school in 1917. Education, first established as a department of Industrial Pedagogy in 1909, was organized as a School of Vocational Education in 1918, and in 1932, in the reorganization of State Higher Education, was organized as a coordinate division of the School of Education, which operates jointly at the University and the State College.

Concurrently with the development of the major curricula, provision was made for instruction in the basic and non-professional subjects essential to the general education of students regardless of the careers they may follow. These subjects, organized for many years in the School of Basic Arts and Sciences as service courses for students in the several major schools, were in 1932 divided between the School of Science, through which instruction in biological and physical sciences is provided at all levels (lower division, upper division, and graduate), and the Lower Division, through which unspecialized freshman and sophomore work in the liberal arts and sciences is provided on a parallel basis at the State College and the University.

Location

CORVALLIS (population 7,585), situated at the head of navigation on the Willamette River, is one of the most healthful cities in Oregon. The climate is remarkably equable, and severe storms are almost unknown. The average annual temperature is about 52 degrees Fahrenheit. Rainfall averages about 42 inches annually, falling mostly during the winter. Corvallis has excellent paved streets, good schools, many churches, attractive residences, a modern sewer system, and a first-class water system supplied from mountain springs. The Coast Range mountains and the distant splendors of the Cascades present a constant panorama of picturesque mountain scenery.

Income

THE state law creating the Board of Higher Education specified that this body was to "have and exercise control of the use, distribution and disbursement of all funds, appropriations and taxes, now or hereafter in possession, levied and collected, received or appropriated for the use, benefit, support and maintenance of institutions of higher education." By virtue of this act, and beginning July 1, 1931, the Board has administered all funds for all state-supported higher educational activities, including Oregon State College, on the basis of a unified budget.

Funds for the support of higher education in Oregon are derived primarily from the following sources: a millage tax of 2.04 mills on all taxable property; certain continuing appropriations from the State for definite purposes; specified sums from the National Government assigned for definite purposes by Congressional acts; income from student tuition and fees; and other sources such as sales and transfers, gifts and miscellaneous.

During the year 1933-34, the income of the institutions under the control of the Board totaled approximately $2,889,388. Of this total,

$1,910,778 came from state sources, $247,814 from Federal sources, $65,459 from county sources, $479,956 from student fees, and $185,381 from gifts and other sources. The state support of $1,910,778 was derived largely from millage, these amounting to $1,782,475. The balance accrued through continued appropriations for agricultural extension and research work.

Official Publications

OFFICIAL publications pertaining to public higher education in the state comprise those issued directly by the State Board of Higher Education and various institutional publications on the several campuses. The legislative act placing all the state institutions of higher education under the control of one board provided that all public announcements pertaining to the several institutions "shall emanate from and bear the name of the Department of Higher Education and shall be conducted in such a way as to present to the citizens of the state and prospective students a fair and impartial view of the higher educational facilities provided by the state and the prospects for useful employment in the various fields for which those facilities afford preparation." The announcements emanating directly from the Board are included in a bulletin series and a leaflet series.

The Bulletin of the Oregon state system of higher education is a monthly publication issued by the Board. Announcements of curricula, including the annual catalog, information for students, and official reports are included in the series.

The Leaflet Series of the state system of higher education, issued semimonthly, includes special announcements to prospective students and the general public.

Agricultural Experiment Station Publications. The Station BULLETINS include reports upon research problems and upon experimental investigations in agronomy, horticulture, drainage and irrigation, dairying, animal husbandry, poultry husbandry, insect pests, plant diseases, home economics, agricultural economics, farm management, marketing and special subjects of interest to the husbandman, conducted at the home station or the several branch stations. The Station also issues a series of CIRCULARS, briefer and less technical than the bulletin series, a mimeograph series of CIRCULARS OF INFORMATION, and occasional pamphlets and reports.

Engineering Experiment Station Publications. These include a series of BULLETINS, CIRCULARS, and REPRINTS, reporting progress in engineering research.

Extension Publications. The Federal Cooperative Extension Service publishes a series of BULLETINS written in such style as to be easily understood, thus meeting the popular demand for scientific knowledge in such form that the people of the state may profit by its application to every-day life. The subjects covered by these monographs include the various phases of agriculture, home economics, engineering, and applied science. A series of OUTLOOK CIRCULARS deals from time to time with the agricultural outlook of the state

in respect to the major lines of agricultural production. The Extension Service also issues twenty-one different series of CLUB CIRCULARS in furtherance of Four-H Club work for boys and girls in the public schools and the home cooperative demonstration projects. In addition to its regular series, the Extension Service publishes occasional miscellaneous circulars, posters, and reports.

The Campus

DEVELOPMENT of the State College campus during the past twenty-five years has been in accordance with a permanent plan prepared for the institution by consulting landscape architects of national recognition. In 1908 the late John C. Olmsted visited the institution and prepared the fundamental plan. In 1925 Mr. A. D. Taylor, following a visit to the campus, revised and enlarged the Olmsted plan, embodying recommendations for future development. The campus extends from near Ninth Street westward between Monroe and Jefferson streets in a wedge shape to Sixteenth Street, thence in a rectangular shape to the Agricultural Mall (Thirtieth Street). The area from Ninth to Fourteenth streets, known as the East Campus, is a spacious, attractively planted recreation park. Directly west is the East or Administration Quadrangle with the Engineering group immediately to the north. The West or Academic Quadrangle is the heart of the present campus. Between it and the Mall are the men's and women's quadrangles, devoted to halls of residence and recreational areas. To the north are the greenhouses with adjacent gardens. Across the Mall, facing east, are a number of agricultural buildings. Between this row of buildings and the farms are the areas assigned to the barns and stables.

Each quadrangle is tastefully planted with both native and exotic ornamental trees and shrubs, which not only contribute to the beautification of the campus but also serve as living laboratory material for students pursuing landscape studies. The campus proper comprises 189 acres; other college lands at Corvallis bring the aggregate acreage to somewhat more than 1,000 acres.

Farm and Forest Lands

FOR instruction and research in agriculture and forestry, the State holds title to farm and forest lands, not only at Corvallis but also at various points throughout the state. In addition to the lands west of the Mall, the South Farm, including horticultural and poultry tracts, lies just south of the city limits of Corvallis. The College owns at Corvallis 555 acres of land, including the tracts immediately to the west and to the south of the city limits. Five miles north of Corvallis the College owns a tract of 124 acres devoted entirely to the purpose of the Agricultural Experiment Station. The Peavy Arboretum and the Mary J. L. McDonald Forest eight miles north of the campus contain 1,600 acres. On the east slope of Mary's Peak (Mount Chintimini) is a 160-acre tract used for demonstration purposes in forestry. The College at present has a lease on 1,098 acres adjoin-

ing the campus, or within a radius of five miles of the campus, for the uses of the School of Agriculture and the Agricultural Experiment Station.

The several branch experiment stations contain varying acreages with title vested in the County, State, or Federal government.

A tract of 100 acres about two miles from the campus is used by the United States War Department for three months each year for pasturage of ninety-two public animals of the R. O. T. C.

The College holds title to a timber tract of 640 acres in Jackson county, a gift from Mrs. Mary J. L. McDonald of San Francisco. A logged-off timber tract of 2,400 acres in Columbia county is owned by the College through the gift of John W. Blodgett of the Blodgett Company, Ltd., Grand Rapids, Michigan. Both of these tracts are for the use of the School of Forestry.

Buildings

WITH the exception of four or five of the older buildings which date from 1889 to 1902, all the principal buildings of the State College have been erected within the past twenty-six years and are of harmonious construction and design. The following brief descriptions, arranged alphabetically, will convey a general idea of the buildings and the purpose for which they are used. In each case the date of erection is indicated; if a building was erected by units, the dates of the erection for the respective units are indicated in order. The location of the various buildings is shown on the map of the campus on page 7. In addition to the buildings listed, various service buildings are found on the campus, and the several branch experiment stations have buildings adapted to the research and experimental work carried on.

The Administration Building (1889) is a three-story brick structure, 90 by 120 feet, containing recitation rooms, music studios, the Workshop Theater, and the office of the Registrar, the Business office, the office of the Comptroller and Director of Business Offices of the Oregon State System of Higher Education, and the office of the Director of Music. Located on a slight eminence, it commands an unsurpassed view of the campus, the city of Corvallis, and the picturesque Cascades.

Agriculture Hall (1909, 1913), an edifice of brick and sandstone, consists of the central or administrative section, the north or Agronomy wing, and the south or Horticulture wing.

The central section is 66 by 140 feet, four stories and basement. On the first floor are the offices of the Director of the Agricultural Experiment Station and the Dean of the School of Agriculture, the Director of the Extension Service, the State Leader of 4-H Clubs, various other offices of the Extension Service, and the soils research laboratories of the Experiment Station. The second floor is occupied by some of the offices, classrooms, and laboratories of the department of Botany; the third floor, by the departments of Zoology and Entomology with their respective museums; and the fourth floor, by the department of Bacteriology.

The north or Agronomy wing, 72 by 130 feet, three stories high, is occupied by the departments of Soils, Farm Management, and Farm Crops,

including the cooperative seed-testing laboratory. The third floor is occupied by the departments of Art and Entomology.

The south or Horticulture wing is 72 by 130 feet, three stories high. This section of the building, with its basement and three floors, accommodates the central offices and various activities of the department of Horticulture, the visual instruction department of the Extension Service, and some of the laboratories, museums, lecture rooms, and offices of the departments of Botany and Zoology of the School of Science.

Apperson Hall (1898, 1920) is 90 by 120 feet in size, three stories high, constructed of Oregon gray granite, sandstone, and terra cotta. The third story was added during the summer of 1920 and the interior completely remodeled. The first floor contains offices and laboratories for the department of Electrical Engineering. The second floor contains offices of the Dean of the School of Engineering and various offices, classrooms, and laboratories of the department of Electrical Engineering. The third floor contains offices for Civil Engineering and Railroad Engineering, four drawing rooms, and five class and lecture rooms.

The Armory (1910, 1911) is built of concrete and steel and is 126 by 355 feet. The drill hall portion, with an area of 36,000 square feet is used in inclement weather by the Infantry, the Field Artillery, the Engineers, the football team, the polo and the track teams, an excellent running track encircling the drill hall portion having been recently completed.

It is also used for Freshman Mixes, "pep" rallies, the Girls' College riding club, the Reserve Officers' riding club, the annual R.O.T.C. military tournament and horse show, and the American Legion's yearly automobile and style shows. It also has arms rooms, instrument rooms, store rooms, offices, and classrooms. In all, the facilities of the Armory afford instructional and recreational facilities for approximately 2,000 students.

Commerce Hall (1922), constructed of brick and terra-cotta, has entrances from both the north and the south. It is of "U" shape, 186 feet long and 67 wide, with wings 28 by 107 feet. There are three floors above a well-lighted ground floor. The most approved methods of heating, lighting, and ventilating are employed. The building houses the offices of the President and the Executive Secretary; the Dean of Men; the Dean of Women; the Editor of Publications; the Clerical Exchange; the College Press; the departments of Agricultural Economics, Secretarial Science, Modern Languages, Social Science, and that part of the department of Mathematics which deals with commercial mathematics.

The Dairy Building (1912) in both outside and inside finish is of architecture similar to that of Agriculture Hall. The structure is 54 by 141 feet, three stories high. On the first floor are the offices of the Dairy department and laboratories for buttermaking, cheesemaking, and market milk instruction, including a boiler room and student lockers. On the second floor are the testing laboratory, advanced laboratory, and research laboratories and offices of the Division of Animal Industries and the Department of Animal Husbandry. The third floor is occupied by the Department of Mathematics.

The Engineering Laboratory (1920) is a brick and concrete building 63 by 220 feet in dimensions and three stories high. The main laboratory is

40 by 120 feet and includes three principal divisions: (a) a materials laboratory occupying about one-third of the building at the east end; (b) a hydraulics laboratory occupying the middle third; and (c) a steam and gas engine laboratory occupying the west end of the building. Each division has floor space on the basement, main floor, and mezzanine or gallery floor. All are served by a five-ton electric traveling crane. The south part of the building contains offices, recitation rooms, drafting rooms, and special laboratories, these last including highway materials laboratory, fuel and oil testing laboratory, metallography laboratory, and automotive laboratory. A 100-horse-power water tube boiler is located in the basement to furnish heat for the building and steam for experimental use in the laboratory.

The Farm Mechanics Building (1912) provides drafting rooms, classrooms, and laboratories for the work in agricultural engineering. Facilities are provided for teaching and experimental work dealing with farm power, farm machinery, farm water supply and irrigation equipment, farm shop, farm building, and automobile mechanics. The building is brick with stone trim, 50 by 120 feet in dimensions and two stories high.

The Forestry Building (1917), three stories high, 80 by 136 feet, constructed of brick, contains roomy laboratories for work in silviculture, dendrology, mensuration, forest protection, technology, mapping, logging engineering, timber testing, and wood products. In addition, space is devoted to a collection of manufactured wood products, designed to show the various uses to which wood may be put, and to a forest museum in which are assembled large specimens of all commercial woods of the United States.

The Foundry (1899), a brick structure with a floor area approximately 40 by 85 feet, is equipped with a 24-inch cupola, brass melting furnaces, core ovens, cranes, bull-ladles, etc., of ample capacity for commercial production.

The Greenhouses, constructed with steel frame and curved eaves, provide approximately 27,000 square feet under glass. This area is divided among the various branches of the work as the needs develop. One house, 33 feet by 100 feet, is especially designed and equipped for the class work of the different departments in the School of Agriculture, in addition to which an equal space is used for instruction in vegetable crops. Interior glass partitions and a control of heat make it possible to grow any of the crops generally handled by florists and vegetable forcers. In addition, any plant material required by research men can be grown in the spaces assigned to them.

The Heating Plant (1923), 52 by 80 feet in dimensions and one story high, is constructed of brick and concrete, with concrete tunnel and conduits leading to the various buildings of the campus. The radial brick chimney is 175 feet high and 10 feet inside diameter, having an outside ladder and platforms permitting student work on temperatures of flue gases. The plant is equipped with three 500-horse-power boilers set with dual furnaces permitting the burning of either fuel oil or the Oregon mill refuse known as hogged fuel. The present building, which joins the south end of the Armory, is designed to permit enlargement.

The Home Economics Building (1914, 1920) measures about 215 feet in length and 120 feet in total width. It consists of three stories above a high basement, and is built of brick and terra cotta. Heating, lighting, and ventilating systems of thoroughly modern type are installed, and every provision—including an electric elevator, rest room, reading room, lockers, and dressing rooms—is made for the comfort and convenience of the young women pursuing work in home economics. Lecture rooms, laboratories, and offices for all phases of home economics are provided in this building. A large, well-equipped auditorium is located on the third floor of the central unit. A large number of classrooms and offices are temporarily used by the department of English.

The Home Management Houses, Kent House (purchased 1930) and Withycombe House (purchased 1918), are an important part of the home economics equipment. These are residences built for family life but now used as laboratories for advanced students in home economics.

The Horticultural Products Building (1919, 1923), constructed of brick, 46 by 72 feet, three stories high, with a one-story wing 46 by 60 feet, contains offices, lecture rooms, and instructional and research laboratories designed and equipped for work in food products. The building is arranged for experimental research and technical investigations in the fields of commercial canning, fruit juices, vinegar, carbonated beverages, dehydration, and other food manufacturing lines.

The Industrial Arts Building (1908) is a modern, well-lighted structure of brick. A central portion, 52 feet square and 2 stories high, is flanked by a one-story wing on the east, 40 by 220 feet, and a similar wing on the south, 40 by 200 feet. The first floor of the central portion contains the office of the department of Mechanical Engineering, a classroom for the machine shop, and the shop of the Engineering School mechanician. On the second floor are the office of the department of Industrial Arts, one office of the Mechanical Engineering department, a general drafting room, a reading room, and a recitation room. The south wing contains the main woodworking shop, 40 by 97 feet, mill room, glue room, finishing laboratory and spray equipment, sheet metal shop, store rooms, and recitation room. The east wing contains the machine shop, 40 by 80 feet; the blacksmith shop, 40 by 100 feet; store room, etc.

Kidder Hall (1892), one of the halls of residence for women, is a well-proportioned frame building, 50 by 160 feet, three stories and basement, containing fifty-one rooms. On the first floor are situated the reception rooms, dining-rooms, kitchen, and several student rooms. Each floor is supplied with baths, showers, hot and cold water, electric light, and steam heat. A laundry for student use is provided. In equipment and furnishings the hall is thoroughly modern and adequate and is attractive and homelike throughout.

The Library Building (1918) consists of three stories and basement at the back and two stories and basement in front, the general reading room being double height. Constructed of red brick and gray terra cotta, with thoroughly modern and effective systems of lighting, heating, and ventilating, its architecture permits stack expansion as time and growth demand it.

The basement is used for storage of documents, newspaper and periodical files. On the first floor are the Reserve Book room, an auditorium,

the Order and the Catalog departments. The second floor houses the main reference room, with seating capacity of three hundred and fifty, periodical reading room, a Faculty reading room, and the office of the Director of Libraries. The third floor consists of small rooms designed ultimately for seminar purposes, at present used for offices and laboratories of the department of Speech and Dramatics and the office of the Dean of Lower Division. A special room is devoted to the Mary J. L. McDonald collection of rare books.

The northwest part of the Library contains the fireproof steel stack room. An electric elevator and a book-lift connect all five decks of the stack room.

Margaret Snell Hall (1921), one of the halls of residence for women, is 96 by 235 feet in size, built of brick and terra cotta, three stories high above a basement. On the first floor are located the reception rooms and the dining-room and kitchens, together with a few student rooms. The laundry and freight room in the basement are connected by elevator with a trunk-storage room on each floor. Seventy-one rooms, most of them designed to accommodate two students, are equipped with individual closets, running water, steam heat, and electric lights. Compartment bathrooms, with showers in addition, a hair-dressing room, and a clothes-pressing room, are provided on each floor, all with thoroughly modern and sanitary equipment. Throughout the building every facility is provided in keeping with good management, health, and home comfort.

The Memorial Union (1928) is a center of student life constructed from funds subscribed by students, alumni, faculty members, and other friends of the College as a memorial to the men and women of the institution who gave their lives in service to their country during the Spanish-American and World wars. The cost to date has been $712,005. The main entrance, from the north, in the Academic Quadrangle, leads into the great memorial vestibule, under the central dome, leading across the main corridor to the lounges. The ground floor contains the ballroom, which has a stage at one end, mens' dining-room, coffee shop, kitchens, and fountain. The mezzanine floor contains the student "co-op" store, barber shop, rest rooms, and ticket office. A series of banquet rooms extends across the entire west end of the building. In addition, the ballroom is used as a banquet room for large assemblages. The meal serving facilities are part of the equipment of the School of Home Economics for instruction in institution economics.

The building affords offices for student publications, honor organizations, the Associated Students, the Associated Women Students, the Alumni Association, the Young Women's Christian Association, and the Memorial Union headquarters. Institutional activities accommodated in the building comprise the offices of the College News Service, the Department of Journalism, and the offices of the Student Loan Committee. Consolidation of these many activities in the Memorial Union has released space in other buildings much needed for institutional work.

The Men's Dormitory Building (1928), comprising five halls of residence for men, affords accommodations for 344 students. Built of brick with stone trim and tile roof, three stories above a basement and with a central tower five stories in height, the building is arranged on the unit

plan, each unit being non-communicating with the other units and constituting a separate hall accommodating from forty-eight to seventy-six men. Each hall has a club or social room comfortably and tastefully furnished, electric elevator, trunk storage room, laundry and pressing rooms. Within each hall there is further division into floor units, each floor unit accommodating approximately twenty-four men. Each floor has its own telephone booth, tiled lavatory and shower rooms, and dormitory or sleeping hall. The study rooms, arranged for two men each, average ten by twelve feet in size. Modern heating and lighting are provided, and floors are covered with linoleum. The central unit, Weatherford Hall, faces northeast, with Buxton and Poling halls extending as wings to the south and Cauthorn and Hawley halls to the west. Weatherford tower contains a general reception room, guest room, general offices for the manager-hostess, and council room.

The Men's Gymnasium (1915, 1921) provides modern equipment for physical education and recreation. The south unit contains the natatorium, one of the finest on the Coast, with a white-tiled pool fifty by one hundred feet in size, with a surrounding gallery seating 1,500 spectators. High and low modern diving boards are part of the equipment. Pressure filters and automatic chlorinators are used in keeping the water sterile. Daily tests for bacteria, residual chlorine, and pH (alkalinity-acidity) values are conducted to insure that the pool water is in satisfactory condition. The natatorium meets all requirements of the State Board of Health for a Grade A pool. The east wing has an auxiliary gymnasium for volleyball and apparatus work. The physical education offices and lecture rooms are also located in this wing of the building. The west wing contains room for volleyball and apparatus work, four handball courts, one wrestling, and one boxing room. The main, central unit contains locker and shower rooms, lobby and offices, restricted exercise room, and the great gymnasium hall with a floor ninety by one hundred and fifty feet in dimensions, with three basketball courts across the main floor. The balcony which encircles the main hall seats nearly a thousand students.

The Mines Building (1913), 65 by 81 feet in dimensions, is a four-story building, constructed of brick, trimmed with stone, and similar in type to all the newer buildings on the campus. The basement and first floors are occupied by the Department of Chemical Engineering, excepting two laboratories devoted to work in assaying and mining engineering. The second and third floors contain the classrooms, offices, and laboratories of the Department of Geology and the office of the Department of Mining Engineering. On the second floor are the General Geology, Paleobotany, and Paleontology laboratories. On the third floor are the Mineralogy, Petrography, Structural Geology, Sedimentary Geology, and Economic Geology laboratories, and the office of the Geology department.

The Nursery School, in Covell House (purchased 1927), has large pleasant rooms adapted for the work of the Nursery School of the School of Home Economics. Adjoining is an enclosed playground equipped for outdoor activities of the school.

The Old Gymnasium (1899), 70 by 120 feet, is built of stone and wood, and comprises a basement, or first floor, facing east, with the main floor above it, having a bank entrance on the west end. The building is used as

headquarters for the R.O.T.C. Band and Oregon State Symphony Orchestra, for instruction in band instruments, for concerts and assemblies, and for various instructional purposes. The first floor accommodates the collections of the College Museum.

The Pharmacy Building (1924) is a three-story brick structure, 62 by 123 feet. In addition to the regular classrooms and laboratories, special features of the building include a model drug store for instructional work, a drug museum, a sign-card and window trimming department, dark room, fire-proof vault, stock rooms, and an ampitheater seating two hundred persons and provided with modern equipment for motion-pictures. The Oregon State Board of Pharmacy maintains in this building the State Drug Laboratory with a competent staff for enforcing the pure drug law of Oregon. The lighting, heating, and ventilating systems are all modern and effective.

The Physics Building (1928) is a three-story red brick structure that architecturally forms the east wing of the Mines Building, though the two buildings have no inside connection. The new building is somewhat irregular in shape, conforming in part to the Engineering buildings parallel with Monroe Street and in part with the East Quadrangle, upon which the Mines Building faces. The structure has a maximum length of 169 feet north and south and 85 feet east and west with a total floor area of approximately 32,700 square feet. It provides permanent quarters for the departments of Physics, Radio Broadcasting, and Highway Engineering, and offices for the Dean of the School of Science and for the Graduate Division.

The first or ground floor is designed for laboratory and service purposes. There are three laboratories for courses in general physics, several more for advanced courses and one for research. There are also a main switchboard room, a storage battery and chemical room, a substation, a fan room, a janitor's room, and an instrument shop. The second floor is occupied by a suite of rooms for the Department of Highway Engineering, the office of the Dean of the School of Science, the general offices of the Department of Physics, a suite of rooms for instructional and service work in photography, and a number of classrooms. The third floor provides three lecture rooms, laboratories for instruction in radio, and a suite of rooms for the State-owned broadcasting station KOAC. The suite includes the general offices, an operating room, a battery room, a large studio, a small studio, an announcer's room, and a waiting room. The roof of the building is utilized as a special laboratory for the teaching of astronomy.

The Poultry Building (1927) is a modern three-story brick and stone building 53 by 128 feet. Equipped with the necessary laboratories for judging, incubation, fattening, dressing, egg grading and candling, it has excellent facilities for instruction in these poultry subjects. The building has modern cold-storage equipment. In addition to classrooms the building provides laboratories and offices for the departments of Veterinary Medicine and Poultry Husbandry.

Science Hall (1902), constructed of gray granite and sandstone, covers a ground space of 85 by 125 feet, has four stories, and contains fifty-five rooms. Within it are housed the department of Chemistry, with its various laboratories, recitation rooms, and lecture halls, together with the offices and laboratories of the Agricultural Experiment Station chemists.

Shepard Hall (1908-1909), so named as a tribute to the memory of Clayborne Shepard, who as a student devoted himself to the cause of the finest Christian living and leadership, is the headquarters of the student Y.M.C.A. and has been the center of much of the religious life of the campus. At present the building houses the offices of the School of Education, the Department of Religion, and the Housing and Employment Secretary. The first floor contains a large lobby, which is used as a reading and lounge room.

The Stables and Barns are located in the western part of the campus, the area assigned to them lying west of Agricultural Mall. All recent barns have been built west of the Mall, and the older structures will eventually be moved from their present location, thus concentrating all barns midway between the campus proper and the College farms. These barns and farm service buildings are arranged in seven or eight groups according to their use, such as military stables, horse, beef-cattle, dairy, hog, and sheep barns, veterinary barn, poultry buildings, etc.

The Stadium. The covered stands and bleachers around Bell Field, adjacent to the Men's Gymnasium, seating approximately 20,000 people, have been built from student fees and from the receipts of athletic contests held in the Stadium and elsewhere.

The Stock Judging Pavilion (1912) provides comfortable and commodious quarters for all of the demonstration work with livestock. The main room is 40 by 90 feet, well lighted and heated. A movable partition is provided whereby this large room may be divided into two smaller ones, each large enough for all regular classes.

The Veterinary Building (1918), a frame structure 56 by 65½ feet, is used for both instructional and research work. The front part of the building consists of two rooms, lighted by skylights and large windows. One of the rooms is a small ampitheater, with a seating capacity of about one hundred and twenty. The arena is sufficiently large for casting animals for surgical work. The opposite room is used for dissection and for holding autopsies. The back part of the building is divided into two stories. The first floor consists of a dressing-room, toilet and shower-bath room, drug and instrument room, and stalls. The second floor has space for storing feed.

Waldo Hall (1907), one of the halls of residence for women, is a large building of pleasing appearance, with a concrete foundation and basement wall, and a cream-colored, pressed-brick superstructure, three stories high. The building is 96 by 240 feet, and contains one hundred and nineteen rooms for students. On the entrance floor are located the dining-rooms and kitchens and a laundry for students. On the first floor are spacious reception rooms and a considerable number of student rooms. The upper floors are given up entirely to student rooms. Each floor has a trunk room, baths and showers. Each room has closets, running water, steam heat, and electric lights. The hall is modern in its appointments, and all equipment and furnishings necessary for health, comfort, and homelike atmosphere have been provided.

The Women's Building (1927), a campus center for women's interests, provides complete facilities for a well-rounded program in physical edu-

cation. The building measures 254 feet in length and 150 feet in width. All parts of the structure except the swimming pool are above ground. The pool, 75 feet by 35 feet, is finished in white tile and adjoins the tile shower rooms equipped with 75 individual showers. Equipment and facilities are such as to meet the requirements of the State Board of Health for a Grade A pool. On the first floor are the large dressing room provided with 256 dressing booths and 1,500 lockers, a laundry, a rest room, and a hair-drying room. The main room on the second floor is the large gymnasium, 72 by 100 feet, with a balcony on three sides and tall, arched windows on the fourth. Adjoining and opening from the gymnasium is the games room, 46 by 70 feet. Space is provided for dancing classes in a special room with mirrored walls and large French windows. The Physical Education office and offices and dressing rooms for the staff complete the second floor. The third floor provides rooms and equipment for measuring and examining women students and for the special work in corrective gymnastics. Three rooms used as social or study rooms have been furnished by the Women's Athletic Association and the Physical Education Club.

The Library

SO planned as to permit expansion as demands upon the library facilities increase, the Library Building at Oregon State Agricultural College occupies a central location in the East Quadrangle. The building is described in detail under Buildings, page 59. The public service rooms include the Reference and Reading room, 150 by 41 feet extending the entire length of the building, the Periodical room, and the Reserved Book room, providing a total seating capacity of 406 readers.

The main working collection of the library includes the books provided for the activities of the various schools and the experiment stations; a good collection of the publications of other colleges and experiment stations; and publications of the departments of Agriculture of the United States and many foreign countries.

The total number of cataloged volumes, including depository set of 3,758 volumes, is 123,793. In addition, through unified library administration, all the books, totaling 402,010, in the libraries of the several state institutions of higher education, are made available, to the fullest extent possible, to the students and faculties of all the institutions. The number of different periodicals currently received by the State College is 1,446, and 100 newspapers are received by subscription, gift, or exchange.

The Reference and Reading Room. The general reading room contains a collection of encyclopedias, dictionaries, standard reference books in the different departments of study, and bound files of periodicals. The Reference Desk, where all general and technical reference questions are handled, is conveniently located here. An excellent collection of public documents and publications of learned societies is filed in adjacent stacks. Duplicates of the most used material are kept for circulation. The main Circulation Desk is also in this room. The "Culture collection" of books for general reading is shelved here.

The Periodical Reading Room. Adjoining the general reading room is the periodical room, containing current issues of periodicals, together with special collections of material pertaining to current interests.

The Reserved Book Reading Room is located on the main floor of the building. All reserved books and periodicals are circulated there.

Seminar Rooms. A debate seminar room is maintained as a work shop for the various intercollegiate and interclass debate teams. It is expected that other seminar rooms will be established as soon as space now used for other purposes can be released. Individual desks are placed on each deck of the stacks for the use of faculty members and advanced students engaged in special study.

Catalogs. A general catalog of all library books on the campus is accessible to the public. This is arranged alphabetically by author, title, and subject. There are also a card catalog of the publications of the United States Department of Agriculture arranged in the same manner, and a card index of the publications of the state experiment stations, which is a subject catalog. All books now classified and cataloged according to the Dewey Decimal system are being reclassified under the Library of Congress system.

An author catalog of all books in the six institutions in the State System of Higher Education is maintained here in connection with the centeralized ordering and is available to all institutions and for public reference.

Special card indexes of short stories and essays are kept up to date in the Reference department. Current indexes of THE OREGON VOTER, THE BAROMETER, and one of the larger dailies of the state are maintained.

Collections. The State College library is a designated depository for the publications of the United States Government and the Carnegie Institution of Washington. It owns a collection of more than 2,000 documents received as a gift from the late United States Senator Dolph. The collection of books on the history of horticulture is notable, and that on home economics is unusually complete for the size of the library, while good foundations have been laid for research work in plant pathology, entomology, horticultural products, chemistry, and pharmacy.

Departmental collections are limited to the few books that may be constantly required for laboratory purposes, but a liberal charging system permits faculty members to draw books for several weeks or a term when best service can be rendered thereby.

Service. The library is open from 7:50 to 9:30 p.m. every day but Sunday and legal holidays, and Sunday from 2 to 5 p.m. for reading purposes only. The library is both a reference and a circulation library for all persons connected with the institution, and reference to others as far as possible. Books may be drawn for home use by all officers and students of the College. Books may be kept by the students for two weeks with the privilege of a renewal, and by officers for as long a time as best service to all will permit. Seniors and graduate students may have access to the stacks for special study when recommended to the Librarian by the department head under whom they are studying.

An excellent system of interlibrary loans is maintained with other libraries on the Coast, especially within the state. The library is also able to borrow from the United States Department of Agriculture Library and the Library of Congress, and from certain specialized scientific libraries in the East when there is a real need. Small branch circulation libraries,

changed each month, are maintained in the various halls of residence on the campus and at the campus Y.M.C.A.

Unified Library Service. The library service of the state institutions of higher education in Oregon is 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 particularly to meet the type of work peculiar to each campus, but the book stock of the libraries as property of the state circulates freely to meet the needs of the curricula and to permit the fullest use of all books.

A union author list of all books and periodicals in the system is maintained in the central office to facilitate a better distribution of the book stock and to eliminate unnecessary duplication of published material. While the libraries are organized for uniformity of methods, cooperation in the use of books, and preparation of biblographies and indexes, there is individuality in service at the several institutions.

Museums and Collections

ILLUSTRATIVE collections for use in connection with the work of instruction have been developed by the various schools and departments of the institution. These include scientific, industrial, historical, and art material classified and arranged for effective use.

The College Museum, located on the ground floor of the Old Gymnasium, is well provided with excellent show cases and valuable collections of historic, scientific, industrial, and artistic interest. Additions of valuable materials are being made from time to time in the form of loans, donations, or exchange collections that are of particular interest to the institution. The most attractive specimens are prepared for display purposes and show to good advantage in the newly equipped rooms, which are well ventilated and well lighted. Opportunities are afforded for research and study of even the less attractive specimens, which are cataloged and kept in storage for this purpose.

The Museum is of particular value in affording visual products in the same way that the library affords literary products. It is rapidly becoming the store-house of College treasures and the custodian of relics, curios, and acquisitions of permanent value.

The Hill collection, presented to the College in 1924 by the heirs of the late Dr. J. L. Hill of Albany, Oregon; the J. G. Crawford Collection from pre-historic burial mounds; the E. E. Boord collection of specimens of animals of the Northwest and the Far North; the Leslie M. Davis collection of Brazilian weapons; the Wiggins, Lisle, Hopkins, and Rice collections of historic American weapons; the Dr. C. E. Linton collection of birds of the oceans; the D.A.R. antiques; the Mrs. J. E. Barrett collection of Indian basketry; the Maggie Avery Stevenson collection of Rocky Mountain relics —these with other commercial, zoological, geological, and botanical collections represent the generosity of about a hundred donors.

The College Museum was formally opened February 20, 1925. Its inception and success up to the present time are due in large measure to the personal interest of the late Dr. John B. Horner, Professor Emeritus of History and Director of Oregon Historical Research.

The Museum is administered by a faculty committee composed of Professor J. Leo Fairbanks, Dr. E. L. Packard, Dr. E. V. Vaughn, Dr. Ira S. Allison, and Professor W. E. Lawrence. This committee solicits information concerning desirable collections that might be available either as loans or as gifts. Proper credit is given those who thus contribute.

Other Collections. In addition there are on the campus extensive collections of fauna and flora, economic plants, soils, insects, textiles and embroideries, woods, crude drugs, and geologic specimens. Some of these collections are described in connection with the various departments and schools.

General Information

Admission

IN order to be admitted to Oregon State Agricultural College a student must be of good moral character and must present evidence of acceptable preparation for work of college grade. Development of character is regarded as a primary aim in education and is emphasized throughout the institution.

ADMISSION TO FIRST-YEAR STANDING

The requirements for admission to first-year or freshman standing conform to the uniform entrance requirements adopted by all of the higher educational institutions of Oregon. The student must have at least fifteen units from a four-year high school or twelve units from a senior high school, earned by entrance examinations or evidenced by a certificate from a standard preparatory school. "Unit" means a subject taught five times a week, in periods of not less than forty minutes, for a school year of not less than thirty-six weeks.

Preparation Required. A student must conform to one of the following plans to obtain admission to first-year or freshman standing. No credit under any of the plans is granted for penmanship, spelling, physical education, or any subject commonly classified as a student activity.

PLAN A. Presentation of fifteen units from a four-year high school or twelve units from a senior high school. Part of these units are to be grouped into majors (a major is three units in one field) and minors (a minor is two units in one field). The distribution from a four-year high school must include two majors and three minors, of which two majors and one minor and one major and two minors must be selected from some of the following fields: English; languages other than English; mathematics; laboratory science; and social science. One of the majors must be in English. The distribution from a senior high school must include two majors and two minors, of which two majors and one minor or one major and two minors must be selected from some of the following fields: English; languages other than English; mathematics; laboratory science; and social science. One of the majors or one of the minors must be in English.

PLAN B. Presentation of fifteen units from a four-year high school or twelve units from a senior high school, of which ten units in the former or eight units in the latter must be selected from some of the following fields: English; languages other than English; mathematics; laboratory science; and social science. At least three of the ten units or two of the eight units must be in English.

PLAN C. Presentation of fifteen units from a four-year high school or twelve units from a senior high school by students of exceptional ability as demonstrated by superior achievement in preparatory work including the classification of the student in the upper quartile of the graduating class

and the unreserved recommendation of the high school principal. In addition the student may be required to demonstrate his ability by obtaining a high rating in a college aptitude test. Eight of the fifteen units, however, or seven of the twelve units, must be selected from some of the following fields: English; languages other than English; mathematics; laboratory science; and social science. At least three of the eight units or two of the seven units must be in English.

Special Requirements. In addition to the foregoing entrance requirements which must be met by all applicants for admission to the first-year or freshman class, certain special subjects are necessary for admission to some of the professional and technical schools. Students planning to major in any phase of engineering should if possible take a full year of physics in high school. In order to be admitted to any of the Engineering curricula a student must have one unit in elementary algebra, one-half unit in higher algebra, and one unit in plane geometry.

Admission Procedure. Evidence of preparation for entrance to first-year standing may be established by either (1) certificate, or (2) examination.

ADMISSION BY CERTIFICATE. Applicants who are residents of Oregon are admitted on presentation of the required entrance units from a standard high school, certified by the principal or superintendent on the regulation form for this purpose. Copies of the blank, *Uniform Certificate of Secondary School Record*, used by Oregon institutions of higher learning, are furnished by the registrar on application of either student or principal. The certificate, properly signed, should be filed with the registrar at least two weeks before the opening date. Applications received subsequent to this time are not rejected, but it is impossible to acknowledge receipt of certificates and students may be delayed in completing registration.

Applicants not residents of Oregon must meet all requirements made of Oregon residents; in addition, such applicants are admitted only on a basis of personal selection establishing their fitness to do college work and including evidence of superior ability as demonstrated by high school record. In general, only those non-resident applicants are admitted who rank in the upper one-half of their graduating class.

ADMISSION BY EXAMINATION. In common with the practice of most institutions of higher education throughout the country, College Entrance Board examinations are accepted. Those interested in seeking admission through these examinations should correspond with the secretary of the College Entrance Examination Board, 431 West 117th Street, New York City.

REGISTRATION. Full directions on registration procedure, and Freshman Week in particular, are furnished each applicant before the final date of registration.

ADMISSION TO ADVANCED STANDING

Advanced standing is granted to students transferring from institutions of collegiate rank. All applications for advanced standing must be submitted to the registrar and must be accompanied by official transcripts covering both high school and college records and letters of honorable dismissal.

The amount of credit granted upon transfer is determined by the committee on academic requirements, which takes into consideration, among other things, the nature of the institution, the quality of the applicant's scholarship, the content, quality, and quantity of the courses completed and their relation to the course of study to be undertaken by the student submitting them. Credit is granted only to the extent to which courses pursued elsewhere articulate with the requirements of the school or department in which the student matriculates. Final determination of the amount of advanced standing may be deferred until after the student has been in attendance for at least three terms.

A student wishing credit for work done other than in an accredited educational institution must petition the committee on academic requirements for permission to take examinations in specified courses, as listed in the catalog. In no case may such examinations be based on work done in high school prior to high school graduation. A student becomes ineligible for such examination after having completed four terms in residence. Credit by examination in general is allowed only for work taken in regularly organized courses in non-accredited institutions of collegiate rank.

ADMISSION AS SPECIAL STUDENTS

Special students are of two classes: (a) those not qualified for admission as regular students but qualified by maturity and experience to carry one or more subjects along special lines; and (b) those qualified for admission as regular students who are not working toward a degree and do not care to follow any of the degree curricula.

An applicant for admission as a special student must be not less than 21 years of age and must file with the registrar documentary evidence sufficient to prove his special fitness to pursue the subjects desired. Credits earned by special students shall not subsequently be counted toward a degree until the student has completed at least two years of work (93 term hours) as a regular student. In case a regular student changes to special status, work done while ranking as a special student will not count toward a degree.

ADMISSION TO UPPER DIVISION STANDING

In order to be admitted to upper division standing, a student must hold the Junior Certificate (see page 71). For specific requirements see pages of this catalog devoted to the respective schools.

ADMISSION TO GRADUATE STUDY

Graduates of standard colleges and universities are admitted to graduate study by the Dean of the Graduate Division and the College Registrar on presentation of an official transcript of the credits on which their bachelor's degree is based. But admission to candidacy for an advanced degree is determined only after a preliminary examination, given when a student has completed approximately fifteen term hours of graduate work.

Graduates of other than standard universities and colleges are expected to obtain the bachelor's degree from a standard institution before proceeding to graduate work.

Graduates of standard colleges and universities who desire to take additional work of either graduate or undergraduate character, without seeking an advanced degree, may be admitted to graduate study and be extended the privileges of such classification.

Degrees and Certificates

OREGON State Agricultural College offers major curricula and degrees in the following fields:

School of Agriculture, *B.S., M.S., Ph.D., degrees.*

School of Education, *B.A., B.S., M.A., M.S. degrees.*

School of Engineering and Industrial Arts. *B.S., M.S. degrees.*

School of Forestry, *B.S., M.S. degrees.*

School of Home Economics, *B.A., B.S., M.A., M.S. degrees.*

School of Pharmacy, *B.S., M.S. degrees.*

School of Science, *B.A., B.S., M.A. M.S., Ph.D. degrees.*

Secretarial Science, *B.S.S. degree.*

Besides the freshman and sophomore work in the several professional and technical fields, other lower division work leading to the Junior Certificate is offered at the State College in Arts and Science, Architecture and Allied Arts, Business Administration, Journalism, Music, Nursing Education, and Physical Education. Approved preparation is also offered for entrance to the Medical School.

REQUIREMENTS FOR DEGREES AND CERTIFICATES

For the Junior Certificate. The first two years of a student's time are spent in fulfilling the requirements for a junior certificate leading to upper division standing. The requirements for a Junior Certificate are as follows:

(1) Term Hours: Minimum, 93 to 102, depending upon the requirements of the school in which student is registered.

(2) Grade Point Average: Minimum, 1.00.

(3) English: A general examination in English required upon entrance. If this examination is not passed, the course designated as English K must be taken and passed.

(4) English Composition: 9 term hours unless excused. Students with a decile rating of 9 or 10 will normally be held for only 6 term hours. Any student whose work meets the standard aimed at may, at the end of any term, with the consent of the head of the department of English, be excused from the further required written English.

(5) Physical Education: 5 terms.

(6) Military Science: 6 terms for men.

(7) General Hygiene.

(8) Group requirements:

Students are required during the first two years to complete a prescribed amount of work selected from three "groups" representing comprehensive fields of knowledge. The courses in the departments intended to satisfy group requirements are numbered from 100 to 110 and from 200 to 210. The three groups are as follows: LANGUAGE AND LITERATURE, SCIENCE, SOCIAL SCIENCE.

The group requirements are different for freshman and sophomore students registered in Lower Division of liberal arts and sciences and for freshman and sophomore students registered in a technical or professional school. The requirements are as follows:

(1) FRESHMEN AND SOPHOMORES NOT REGISTERED IN A TECHNICAL OR PROFESSIONAL SCHOOL—that is, those registered in Lower Division in the liberal arts and sciences—must have completed at least 9 approved term hours in each of the three groups and at least 9 additional approved term hours in courses numbered 200-210, or equivalent, in any one of the same three groups.

In meeting this requirement, unless otherwise authorized, freshmen take two year-sequences in the 100-110 courses and sophomores take one year-sequence in the 100-110 courses and one in the 200-210 courses.

(2) FRESHMEN AND SOPHOMORES REGISTERED IN ONE OF THE TECHNICAL OR PROFESSIONAL SCHOOLS, including those who designate the intention of studying law, must complete at least 9 term hours in English literature or upper division foreign language or social science and at least 9 term hours in science. If a school cannot meet this requirement by the close of the sophomore year, fulfillment may be deferred by agreement between the dean of the school concerned and the Academic Requirements Committee, such agreement to be filed in the Registrar's office.

For the Bachelor's Degree. When a student has fulfilled all the requirements for a Junior Certificate he may begin upper division work in the college or school of his choice and become a candidate for a bachelor's degree. The requirements for the bachelor's degree are as follows:

(1) Junior Certificate.

(2) Term Hours: Minimum total, 186, including—

(a) The hours earned in obtaining the Junior Certificate.

(b) A minimum of 62 hours in upper division courses, except that only 45 such hours are required of majors in the professional and technical schools and in the School of Science.

(c) A minimum of 36 hours in the major department, of which 24 must be upper division.

(d) A minimum of 45 hours earned after obtaining the Junior Certificate.

(e) For B.A.: 36 hours in Arts and Letters, including two years (normally 24 term hours) in a foreign language for which college credit is received.

(f) For B.S.: 36 hours in either Social Science or Science.

(g) For B.S. in a professional or technical field: 36 hours in the professional or technical school in which the student has majored.

(h) For professional bachelor's degree: Recommendation of the dean of the student's major school for the particular degree.

(3) Grade-Point Average: Minimum, 1.00.

(4) Residence: Minimum, 45 term hours (normally the last 45).

(5) Dean's Recommendation: In addition to other requirements the student must have fulfilled requirements of his major school and department and must be recommended by the dean of his school.

For the Higher Degrees. The requirements for the Higher Degrees are indicated on another page in the announcements of the Graduate Division.

Academic Procedure

THE academic year is divided into three terms of approximately twelve weeks each. A six-week summer session supplements the work of the regular year (see special announcements). Students may enter at any term but are advised to enter in the fall. It is especially important that freshman or transferring students be present for the opening of Freshman Week. The opening and closing dates for the terms of the current year are given in the academic calendar on another page.

DEFINITIONS

A COURSE is one of the instructional subdivisions of a subject offered through a single term.

A YEAR-SEQUENCE consists of three closely articulated courses in a subject extending through the three terms of the academic year.

A CURRICULUM is an organized program of study arranged to provide definite cultural or professional preparation.

A TERM HOUR represents three hours of the student's time each week for one term. This time may be assigned to work in classroom, laboratory, or outside preparation. The number of lecture, recitation, laboratory, studio, or other periods per week for the respective courses is indicated in the course descriptions or the regular printed schedules.

COURSE NUMBERING SYSTEM

Courses throughout the state system of higher education are numbered as follows:

100-110, 200-210. Courses intended to satisfy the Lower Division Group requirements in the Language and Literature, Science and Social Science groups. These numbers may also be used by professional and technical schools to designate similar Lower Division courses.

111-199. Other courses offered at first-year level. (Courses in the first two years of foreign language offered for the benefit of students who did not get this foundation in preparatory school are numbered 1-99.)

211-299. Other courses offered at second-year level.

300-399. Upper division courses not applicable for graduate credit.

400-499. Upper division courses primarily for seniors but which may be taken for graduate credit provided a more exacting standard is met.

500-599. Courses primarily for graduate students but to which seniors of superior scholastic achievement may be admitted on approval of instructor and department head concerned.

600-699. Courses that are highly professional or technical in nature and may count toward a professional degree only but cannot apply toward an advanced academic degree such as M.A., M.S., or Ph.D.

Certain numbers are reserved for courses that may be taken through successive terms under the same course number, credit being granted according to the amount of acceptable work done. These course numbers are as follows:

301, 401, 501. Research or other supervised original work.

303, 403, 503. Thesis. Reading or research reported in writing.

305, 405, 505. Reading and Conference. Independent reading reported orally to instructor.

307, 407, 507. Seminar. Independent or assigned reading on current problems reported to groups, using material that never duplicates subject-matter previously covered in course.

SUMMER SESSION COURSES are numbered on the following basis:

A course given during the summer session essentially identical to one given during the regular year is given the same number.

A small "s" following a course number indicates that the course, while for the most part similar to the course of that number given during the regular year, is modified in some significant respect when given during the Summer Session.

Courses given during the Summer Sessions which have no parallel with courses offered during the regular session are given numbers not attached to any course given during the regular session but conforming to the regulations indicated above. The number is followed by an "s."

REGULATIONS AND REQUIREMENTS

Students are held responsible for familiarity with the regulations governing such matters as the routine of registration, academic standards, student activities, organizations, etc. The information presented in the following paragraphs is limited to items of interest to prospective students prior to registration.

Freshman Week, comprising a program of orientation training for entering freshmen, is held annually before fall term registration. The new students are made familiar with the objectives of higher education, the principles governing the wise use of time and money, methods of study, and the ideals and traditions of the institution. By means of general assemblies, group lectures and discussions, individual conferences, examinations and tests, constructive effort is made to assist every freshman in getting the best possible start in his new work.

Placement Examinations. As a basis for the most helpful planning of the student's entire program in college, a number of examinations are given entering students.

PSYCHOLOGICAL EXAMINATION. All entering undergraduate students are required to take a psychological examination. This test is considered to some extent a measure of college aptitude, and the results are weighed in arranging the student's course of study for the term.

PLACEMENT EXAMINATION IN ENGLISH. All students entering as freshmen are required to take a preliminary examination for the purpose of demonstrating their preparation in English. The examination covers the fundamental principles of grammar and requires evidence of the student's ability to apply these principles in writing. Students failing to obtain a satisfactory grade in this examination are required to pass satisfactorily English K before registering for work in English Composition.

PLACEMENT EXAMINATION IN MATHEMATICS. All freshmen registering in any Engineering or Forestry curriclulm are required to take a placement examination in first-year high school algebra, on the basis of which their college work in mathematics is determined.

PHYSICAL EXAMINATION. A physical examination is required of all students entering the institution. In case examination of any student discloses physical defects, report is made to the Director of Physical Education, and the physical training of the student is adapted to suit, and if possible to correct, such defects.

Grades and Points. The quality of student work is measured by a system of grades and grade points.

GRADES. The grading system consists of four passing grades, A, B, C, D; failure, F; incomplete, INC.; withdrawn, W. Students ordinarily receive one of the four passing grades or failure. When the quality of the work is satisfactory, but the course has not been completed, for reasons acceptable to the instructor, a report of incomplete is made and additional time is granted; this additional time is only to the end of the next subsequent term that the student is registered in the institution. Students are officially withdrawan (W) from a course on filing the proper blanks with the registrar's office.

Exceptional accomplishment is denoted by the grade of A, superior by B, average by C, inferior by D, unsatisfactory by F.

POINTS. Grade points are computed on the basis of 3 points for each term hour of A grade, 2 for each term hour of B, 1 for each term hour of C, 0 for each term hour of D, and–1 (minus one) for each term hour of F. Marks of INC. and W, are disregarded in the computation of points. The grade point average (GPA) is the quotient of total points divided by total term hours, total term hours being the number of term hours in which grades (A, B, C, D, and F) are received.

Scholarship Regulations. The administration of the regulations governing scholarship requirements at the State College is vested in a committee of the faculty known as the scholarship committee. This committee has discretionary authority in the enforcement of rules governing probation,

and also has authority to drop a student when it appears that his work is of such character that he cannot remain with profit to himself and with credit to the institution. In general, this implies substantial progress toward meeting graduation requirements.

(1) A student of lower division rank is automatically placed on probation if his grade-point average for any term is below .50, and he shall not be released from probation until his grade-point average for a subsequent term is at least .75.

(2) A student of upper division rank is given written notice of warning if his grade-point average falls below 1.00 in any term. He is automatically placed on probation when his grade-point average for a given term falls below .75 or at any time his cumulative grade-point average falls below 1.00. He shall not be released from probation until he has made a term grade-point average of at least 1.00 and has a cumulative grade-point average of 1.00.

(3) A student on probation must withdraw from all student, extracurricular, and organization activities.

(4) No student who has been in residence six terms, or equivalent, is eligible to hold any elective office or to accept an appointment in a student activity unless he has been admitted to upper-division standing. The meaning of the term "elective office" shall be interpreted by the Scholarship Committee.

(5) The rules of the Pacific Coast intercollegiate Athletic Conference shall govern in all cases of athletic eligibility.

(6) Students who have been suspended or expelled are denied all the privileges of the institution or of any organization in any way connected with it, and shall not be permitted to attend any social gathering of students or to reside in any fraternity, sorority, or club house, or in any of the halls of residence.

Auditors. Persons not otherwise registered in the institution who desire to attend classes in any subject regularly during the term may be classified as auditors on the presentation to the registrar's office of a formal petition approved by the instructor who gives the course and the payment of a fee assessed at the rate of one dollar per term hour. Any student regularly enrolled in the institution desiring to attend a class without registering for credit may be granted this privilege on presentation to the registrar of a formal petition approved by the instructor who gives the course and the dean of the school in which the student is registered.

Visitors. A person not regularly registered as a student but who may be on the campus as a guest of the institution may be granted the privilege of attending classes on the presentation of a visitor's card signed by the registrar.

Final Examinations. At the close of each term final examinations are arranged in all courses, except in the case of subjects not readily lending themselves to written examinations. Courses in the latter classification may be exempted on approval of the Administrative Council.

Restrictions. Not more than sixty term hours of correspondence study may be applied toward a degree. Not more than forty-eight term hours of

law or medicine may be applied toward any degree other than the professional law and medical degrees. Not more than twelve term hours of applied music may count toward any degree other than the Bachelor of Music degree.

Automobiles. By order of the State Board of Higher Education use of automobiles by students attending any of the institutions in the state system of higher education is subject to regulation to the end that such use shall not in any way be a detriment to the maintenance of the highest standards of scholarship, social life, and general welfare of institutions and students.

Fees and Deposits

ALL students enrolled in Oregon State Agricultural College at Corvallis during the regular academic year pay a uniform registration fee, irrespective of the school or curriculum in which they are classified. This charge covers all regular fees payable during the term and is collected at the time of registration, or in three installmnts if the student so desires.

Undergraduate Fee. Undergraduate students who are residents of Oregon pay a flat registration fee of $31.50 each term, or $94.50 a year. This fee includes the regular $18.00 tuition fee, which entitles the student to register in any school or curriculum without additional charge, and provides free use of all institutional facilities and equipment; the health service fee of $3.50 a term, which provides medical consultation and advice from a competent medical staff; the building fee of $5.00 a term, which finances certain building projects; and a $5.00 fee, which finances certain athletic, dramatic, forensic, and musical activities and covers admission to athletic and other events and a subscription to the student daily newspaper. All laboratory and course fees are covered by this undergraduate fee of $31.50 a term.

Non-resident students pay $50.00 a term, or $150.00 a year, in addition to the fee paid by Oregon residents.

Graduate Fee. A graduate student is required to pay a registration fee of $23.50 each term, or $70.50 a year. This entitles the student to enroll in any school or curriculum without additional charge; free use of all institutional facilities and equipment maintained for the benefit of students, and the privileges of the health service. There is no non-resident fee for graduate students. In order to register as a graduate student, a student must be admitted to the Graduate Division, or have received a bachelor's degree, or have completed all requirements for a bachelor's degree.

Graduation Fee. A graduation fee of $6.50 is paid for each degree taken. The regulations of the institution prescribe that no person shall be recommended for a degree until he has paid all fees and charges due the institution, including the graduation fee. The graduation fee entitles the student to one year's membership in the Alumni Association.

Special Fees. The following fees are paid by the student under the conditions indicated:

1. Late Registration Fee.....$1.00 to $5.00
   Students registering after the scheduled registration dates of any term pay a late registration fee of $1.00 for the first day and $1.00 for each additional day until a maximum charge of $5.00 is reached.
2. Change of Program Fee.....$1.00
   If a student makes any change in his official program after such schedule has been duly approved and accepted by the registrar's office, this charge is made.
3. Part-time Fee, per term hour.....$3.00
   Any student, either graduate or undergraduate, registering for six term hours of work or less may have an option of a reduced rate of $3.00 per term hour. This fee is payable at the time of registration and extends the permission of class attendance and free use of library, but not to any other institutional privileges. Part-time students not residents of Oregon pay non-resident tuition at the rate of $3.12 per term hour.
4. Reinstatement Fee.....$2.00
   If for any reason a student has his registration canceled during a term for failure to comply with the regulations of the institution, but is later allowed to continue his work the reinstatement fee is charged.
5. Special Examination Fee, each course.....$2.00
   If a student is granted the privilege of taking an examination for advanced credit or other special examination, this fee is charged.
6. Auditor's Fee, per term hour.....$1.00
   An auditor is a person who has obtained permission to attend classes without receiving academic credit. The fee is payable at the time of registration and entitles the student to attend classes but not to enjoy other institutional privileges.
7. Transcript Fee.....$1.00
   A fee of $1.00 is charged for each transcript issued after the first, which is issued free of charge.

Non-resident Fee. All regular undergraduate students at the State College who are not residents of Oregon pay a non-resident fee of $50.00 a term or $150.00 a year in addition to the fees paid by Oregon residents (see Regulations Governing Non-resident Tuition).

Deposits. Each student who enrolls for academic credit is required to make a deposit of $5.00 payable once each year at the time of first registration. This is required as a protection against loss or damage of institutional property made available for the use of the student, including such items as laboratory equipment, military uniforms, library books, locker keys, or against any contingencies that may arise. If at any time charges

against this deposit become excessive, the student may be called on to reestablish the original amount.

Fee Refunds. Students who withdraw from the institution and who have complied with the regulations governing withdrawals will be entitled to certain refunds of fees paid, depending on the time of withdrawal. In no case shall the amount retained by the institution be less than $5.00. The amounts listed below will be refunded under the conditions indicated.

(1) Any claim for refund must be made in writing, with the student body ticket attached, before the close of the term in which said claim originated.
(2) Refunds in all cases shall be calculated from the date of application for refund and not from the date when the student ceased attending classes, except that in the case of a student withdrawing on account of illness refunds shall be calculated from the date of last class attended, provided the claim for refund is accompanied by a certificate from the attending physician.
(3) If withdrawal is requested after the student's registration has been filed, but before the close of the first week in which classes begin, $5.00 shall be retained by the institution and any amount paid by the student above $5.00 shall be refunded.
(4) If withdrawal is requested after the close of the first week in which classes begin, but before the close of the second week, a refund of three-fourths of the term fees shall be granted.
(5) If withdrawal is requested after the close of the second week of classes, but before the close of the fourth week, one-half of the term fees shall be refunded.
(6) If withdrawal is requested after the close of the fourth week of classes, and before the close of the sixth week, one-fourth of the term fees shall be refunded.
(7) After the close of the sixth week of classes no refunds shall be allowed.

Deposit Refunds. Within three weeks after the close of the academic year, or after the close of either the fall or winter term, should a student discontinue his work before the year is completed, the $5.00 deposit, less any deductions which may have been made, will be refunded.

REGULATIONS GOVERING NON-RESIDENT TUITION

The Oregon State Board of Higher Education has defined a non-resident student as a person who comes into Oregon from another state for the purpose of attending one of the institutions under the control of the Board.

In order to draw a clear line between resident and non-resident students the Board has ordered that all students in the institutions under its control who have not been domiciled in Oregon for more than one year immediately preceding the day of their first enrollment in the institution shall be termed non-resident students, with the following exceptions:

(1) Students whose fathers (or mothers, if the father is not living) are domiciled, as defined under (1) below, in the State of Oregon.

(2) Children of regular employees of the Federal Government stationed in the State of Oregon.

(3) Students holding bachelor's or higher degrees from higher educational institutions whose work is acceptable as preparation for graduate work.

(4) Students in summer sessions.

The Board established the following rules to be observed in determining the resident status of students:

(1) Residence and domicile are synonymous and domicile shall be considered to be a fixed permanent residence to which, when absent, one has the intention of returning.

(2) A student entering from another state or country is prima facia a non-resident, and to change this residence the burden of proof is upon the student.

(3) Residence cannot be changed by mere declaration of intention so to change, and, in addition to declaration of intention to change residence, there must be supporting fact sufficiently strong to satisfy the authorities that the intention has actually been effected.

(4) In case of minors, change of residence of parents or legal guardians will be closely examined.

(5) In case of persons of legal age, such things as residence of parents, or nearest relatives, or wife, or children, or intimate friends to whom one would naturally go in case of illness or other distress, will be considered as factors entering into the matter of intent.

(6) Actions will be considered as speaking louder than words in determining the weight of evidence, hence less weight will be given to a person's declarations than to his acts.

(7) The length of time in the state will not alone determine residence.

(8) Voting residence will not be a determining factor because of the Oregon constitutional provision, Art. II, Sec. 4, providing that a person shall not be held to have gained or lost a residence for the purpose of voting while a student at any institution of learning.

(9) Two things; namely, (a) actual habitation and (b) intention of remaining, must exist simultaneously, and the intention to remain must be construed to mean remain permanently and not merely during school term or any other equally temporary time. It must be a bona fide permanent residence with no thought of change in the intent or residence when the school period shall have expired.

(10) A non-resident at the time of his enrollment must be held to that classification throughout his presence as a student except in rare cases where it can be proved that his previous domicile has been abandoned and a new one established indedependent of the college or his attendance thereon.

Student Living

COMFORTABLE, healthful, and congenial living conditions for students are regarded as of great importance. Living conditions of the right kind not only aid students to do the best work in their studies but also through the experiences of group life contribute to the building of character and personality. Hence careful consideration is given to proper living conditions for students, not only through provision of institutional halls of residence, but also through supervision of the living conditions of students outside the dormitories as well.

In addition to those living in the dormitories, many students live in fraternity, sorority, or club houses accommodating groups of from twenty to fifty persons. Admission to these groups is by invitation only.

Students also live with relatives near the campus or in private homes or boarding houses.

Housing Regulations. The following regulations govern housing of students, with the provision that when financial reasons make it necessary the housing committee may excuse students from dormitory residence and permit them to live in approved homes when rates for board and room are lower.

All freshman women at the College are required to live in the dormitories during the first year.

All women students, other than freshmen, who do not live with their relatives in Corvallis or in sorority houses are required to live in the dormitories.

Upperclass women at the College may move to the sorority houses at the beginning and end of any term. At the beginning of the term, moving will take place on the second Saturday.

Freshman and sophomore men not living with relatives in Corvallis or in the present organized fraternities must live in the dormitories. Any exemptions from this requirement must be approved by the Housing Committee.

Any student reserving a room in the men's halls must occupy it until the end of the term. If he moves out of the dormitory before the end of the term without proper permission, he must pay his room and board to the dormitory for the remainder of the term or forfeit his registration. A student who pledges to a fraternity may move to a fraternity house at the end of either the first or the second term if he substitutes a student in his place at the dormitory, if he petitions the Director of Dormitories to be released in his turn as new students enter the dormitory, or if on proper authority he is released on account of serious financial condition of his fraternity.

All women students living in the dormitories must take their meals at the dormitories.

All men students living in the dormitories must take their meals in the dining room provided for them in the Memorial Union.

DORMITORIES

The function of the halls of residence is to provide comfortable, democratic living conditions conducive alike to successful work as a student and to complete participation in the wholesome activities of campus life. Living conditions within the halls are made as nearly like that of a good modern home as possible. In addition, the method of government, the distribution of responsibility, and the opportunities for sharing in all the privileges and activities of a congenial social group are such as to promote social coherence and develop college spirit—that indefinable but truly memorable element in the life of a student in an institution of higher learning.

Men's Halls. Five halls of residence for men, Buxton, Cauthorn, Hawley, Poling, and Weatherford Halls, are maintained, accommodating a total of 344 students. The five halls are part of a single structure described elsewhere under "Buildings" as the "Men's Dormitory Building."

Rooms accommodate two students each and are equipped with study tables, chairs, dressers, and wardrobe facilities. All floors are covered with a good grade of linoleum. Adequate lighting is provided, besides which there are attachments for study lamps. Each floor has lavatory and shower-bath facilities. For each floor common sleeping rooms are provided, equipped with cots, mattresses, mattress-covers and pillows. Each student furnishes his own study lamp, bedding, towels, and personal furnishings. In each hall a club or social room, comfortably and tastefully furnished, is available for the use of all students in the hall. Telephone service is provided on each floor of each hall, and in the basement of each hall laundry facilities with electric irons and trunk storage accommodations are available. In addition, one of the halls contains a general reception room and guest suite for the entertainment of parents and other guests.

Women's Halls. Three halls of residence for women are provided, including Ida Kidder, Margaret Snell, and Waldo. All the halls are home-like and attractive and are supplied throughout with pure mountain water, both hot and cold, electric lights, and steam heat. The rooms are furnished with single beds, mattresses, dressers, tables, and chairs. Other furnishings, including pillows, pillow-cases, sheets, blankets, bed spreads, curtains, rugs, and towels are furnished by the student. The bedrooms average about 12 feet by 15 feet with one window 3 feet by 7 feet. Many of the rooms are larger and a few of them have two or three windows. All rooms in Margaret Snell Hall have two or more windows. Each hall contains reception and social rooms for the use of students. Laundry facilities and trunk storage accommodations are also available in each hall. Telephone service is provided. Ida Kidder Hall will not be in use during 1934-35.

Living Expenses. The rate for board and room in the halls is $25.00 for each calendar month. Making allowance for vacation periods, this amounts to about $70.00 for the first term and will not exceed $200 for the academic year.

The charges listed for room and board do not include vacation periods. The right is reserved to increase the price of room and board should advance in costs require. A corresponding decrease will be made whenever decreased costs make it possible.

Students are not expected to arrive at halls of residence until the day the dormitories are open, usually one day before the opening date of a term.

Room Deposits. A deposit of $5.00 must be sent to the Director of Dormitories at the time of application for room. On registration this deposit applies on the first month's bill for board and room.

In case a student who has applied for a room does not enter the institution, the deposit will be refunded provided notification is sent at least one week before the opening date. Rooms will not be held after the first day of registration.

College Tea Room. A tea room in the Memorial Union under the supervision of the Department of Institution Economics in the School of Home Economics serves attractive luncheons during the regular school week. The tea room also makes a specialty of catering for luncheon and dinner parties.

PRIVATE BOARD AND ROOM

Board and room can be obtained in private homes or boarding houses at rates from $18.00 to $35.00 a month. The Housing Committee exercises general supervision over student living. This committee endeavors to see that all students have comfortable rooms and wholesome living conditions.

STUDENT EXPENSES

In thinking of the cost of a year in college, the student usually has in mind the amount which he will spend from the time he leaves home until he returns at the close of the year. Such an estimate includes, of course, such personal items as clothing, travel, and amusements, items which vary according to the thrift, discrimination, and habits of the individual. The following table gives as nearly as possible the average expenses incurred by a student during an academic year. Board and room costs are based on charges in the halls of residence. The incidental item varies greatly with the individual. Cost of clothing is not included. The expenses of the first term are listed also, since the first term involves expenses not incurred during the second and third terms.

Items	First Term	Year
Fees	$31.50	$94.50
Deposit	5.00	5.00
Books, supplies, etc.	25.00	50.00
Board and room	70.00	200.00
Incidentals	35.00	100.00
	$166.50	$449.50

SELF-SUPPORT

Many students earn a large part of their expenses by work in the summers and during the academic year. Some students are entirely self-supporting. In some cases students devote an occasional term or two to regular employment in addition to vacation periods, thus taking more than the usual number of years to complete a course.

The work available during the academic year consists of such tasks as janitor work, typewriting, reporting, tutoring, waiting on table, clerking, clothes pressing, caring for children, odd jobs, etc.

Organized effort is made to assist those desiring to find work. Remunerative employment cannot be guaranteed to all who may desire it, and the new student should have sufficient funds to cover the expenses of at least the first term. It is difficult to earn one's way while carrying a program of studies and only capable students of good health should attempt it. The attention of new students who intend to earn all or part of their living is called to the following results of past experience.

1. Work of any kind is much more readily obtained after the student has had opportunity to familiarize himself with the local conditions.

2. No student should expect to obtain employment by correspondence. It is advisable, however, to send an application to the employment bureau some time after September 1 and to come to the campus a day or two before the term opens to talk the matter over with the employment secretary. Positions for part-time employment are not listed, as a rule, until about the time the term opens.

3. No student should come expecting to earn money unless he knows how and is willing to work. Only those students who do their work well can succeed in obtaining sufficient employment to meet their needs.

4. There is a constant oversupply of those wishing to do teaching and clerical work. None but those having superior qualifications and experience are likely to obtain employment of this type during the first term.

5. There is a considerable demand for efficient stenographers, but generally there is not sufficient work of this kind to meet the needs of all applicants.

6. Students who can do any kind of domestic or manual labor well and who have good health can earn their board for three hours of work a day or board and room for three and one-half hours of work a day.

EMPLOYMENT BUREAUS

The employment bureau for men is conducted by the Young Men's Christian Association in Shepard Hall. The employment bureau for women is conducted by the Dean of Women's office in Commerce Hall.

Health Service

PROVISION is made for the safeguarding of student health at the State College through the organization of a health service. The purpose of the health service is to preserve health, to prevent disease, and to provide medical attention for ill students. The accomplishment of this purpose is sought through health education, detection of incipient disease, detection of remediable defects through the medium of complete medical examinations, and by appropriate medical attention for acute disease conditions.

The College health service is housed in a frame building in the East Quadrangle. This building is equipped with a secretary's office, a waiting room, three doctors' offices, a nurse's treatment room, a laboratory and pharmacy, and an X-ray room. The College hospital is located at 853 Harrison Street. The staff comprises three full-time physicians, one of whom is a woman; four nurses and a technician.

Students are entitled to general medical attention and advice at the health service during office hours. Complete medical examinations are required of all new students and are given to other students if requested. Any student whose condition demands hospitalization for general medical attention is entitled to free care at the College hospital not to exceed five days in any one term during the regular academic year. All expenses of, or connected with, surgical operations or highly specialized service must be borne by the students who require such attention. An ill student may, on request, be attended at his rooming place by health service physicians. Such calls, after health service hours, should be telephoned to the College hospital. For each call at student's place of residence an additional fee of $1.00 is charged, payable at the business office upon receipt of a statement from the health service.

Loan Funds

AS an aid to students in financing a part of their residence study at the State College a number of loan funds have been established. In addition to the general "Student Loan Fund," to which there are many donors, a number of special loan funds have been established. A special faculty committee with offices in the Memorial Union is charged with the responsibility of administering the Student Loan Fund and cooperates in the administration of the other loan funds available for students at the State College.

The Student Loan Fund. The Student Loan Fund is a perpetual revolving trust fund, established for the purpose of lending money to worthy students attending or who wish to attend Oregon State Agricultural College. It is administered by the Student Loan Fund of the College, a membership organization, incorporated under the laws of the State of Oregon, whose members are known and designated as trustees, and are appointed by the President of the College. This fund has arisen through the liberality of friends of Oregon State Agricultural College and through the accumulation of interest on loans.

PURPOSE. The purpose, as expressed by one of the donors, is "not to induce students to attend school by providing money that can be easily obtained, but rather to aid those who have determined to secure an education and are paying the cost wholly or in part from their own earnings." Students are eligible to loan aid after they have been in attendance at the College *at least one term.*

CONTRIBUTIONS. Among the many donors to the Student Loan Fund may be mentioned the following: Hon. R. A. Booth, Mrs. Clara Humason Waldo, Mr. Ashby Pierce, Mr. R. M. Johnston, Mr. L. J. Simpson, Mr. Ben Selling, the College Folk Club, the Agricultural Club, the Oregon Countryman, miscellaneous contributions by Faculty, Professors Paul Petri and Lillian Jeffreys Petri, Winter Short Course Students, Piano Practice Fund, Class Donations (1901, 1912, 1915, 1916), Y. M. C. A., Rifle Club, Marguerite Mac Manus String Quartet, Salem Oregon State Club, Portland Oregon State Club, Oregon State Barometer, Domestic Science Dining Room (Panama-Pacific International Exposition, San Francisco), bonds during the war—Waldo Hall Club, Cauthorn Hall Club, Miners' Club.

FUNDAMENTAL PRINCIPLES. The fundamental principles upon which the fund is administered and upon which the success of the fund has been built are:

(1) Care in the selection of student character as a credit basis.

(2) Detailed budgeting of expenses and receipts to assure that the sums borrowed are not disproportionate with the student's capacity to repay.

(3) Insurance against loss by a "Contract of Guaranty" signed by the parent or guardian.

(4) Effective follow-up system on delinquent loans.

The Crawford Loan Fund. By the wills of the late Edward G. Crawford and his wife Ida M. Crawford a fund has been left in trust with the United States National Bank of Portland to assist worthy young men desiring to

educate themselves. Applications for assistance under this will are made through the local loan office. Applicant must be a native-born citizen of the United States, have attended primary school, either public or private, and have shown a desire and ability to help and educate himself. He must be regularly enrolled as a student in the school or college at which the proceeds of the loan will be used. According to the terms of the will, this fund can be used to assist young men who require financial aid in obtaining an education in any of the mechanical arts, trades, or in practical business, or along any particular line of study save and except the professions of medicine, law, theology, pedagogy, and music.

Federation of Women's Clubs Educational Fund. This fund provides loans to women students who are well recommended.

Masonic Educational Funds. The Grand Lodge of the State of Oregon has assigned two thousand dollars ($2,000) to a fund which may be used by needy sons and daughters of Master Masons. Loans from this fund are made at the discretion of the Trustees of the Grand Lodge, upon the recommendation of the president of the institution and the approval of the master and wardens of the lodge located in the same place as the institution. Loans to any one student may not exceed three hundred dollars ($300) in a school year, subject to repayment in full or in installments at the borrowing student's earliest convenience.

The Knights Templar have a national fund available for the aid of students in their junior and senior years. The student applying need not necessarily have Masonic affiliations as a prerequisite. Loans from this fund are obtained in the manner above described.

The Grand Chapter of Royal Arch Masons of Oregon has established a loan fund of $2,500 jointly between Oregon State Agricultural College and the University of Oregon for the sons or daughters of Royal Arch Masons of Oregon. Loans from this fund are obtained as in the case of other Masonic loan funds.

Eastern Star Educational Fund. Loans are available to students who are members or daughters of members of the Order of the Eastern Star. Loans are made in amounts of not more than three hundred dollars ($300) in a school year. Notes are for one year and renewable at the pleasure of the Worthy Matron, and draw four per cent interest. Loans are made upon honor, no security being asked, and will be made by the Trustees of the Grand Lodge on the recommendation of the president of the institution which the student is attending and the approval of the Worthy Matron and Worthy Patron of the chapter of the Order of the Eastern Star located in the same place as the institution of learning.

The J. T. Apperson Agricultural College Educational Fund. By the will of the late Hon. J. T. Apperson, Regent of the College from its foundation, a fund amounting to between $55,000 and $75,000 is to be a perpetual endowment, administered by the State Land Board of Oregon, for the assistance of worthy young men and women, "who are actual bona fide residents of the State of Oregon, and who would otherwise be unable to bear the expense of a college course at the Oregon State Agricultural College." The income from this estate is lent to students at a low rate of interest. Applicants for loans must be recommended to the State Land Board by the President of the College and the State Superintendent of Public Instruction. Application is made through the Student Loan Committee.

The Simon Benson Fund. Mr. Simon Benson of Portland has placed the sum of two thousand dollars ($2,000) on deposit with the Loan Committee for the assistance of needy and worthy students. This fund is administered in the same manner employed with the other moneys of the regular Student Loan Fund.

The Arthur Palmer Tifft Memorial Loan Fund. By the will of the late Mrs. Joan C. Palmer Tifft, practically her entire estate is left as a permanent loan fund for deserving young men needing financial assistance while attending Oregon State Agricultural College. This fund is left as a memorial to her son, Arthur Palmer Tifft, Portland attorney, who died on January 14, 1919. The fund is irreducible and all interest accruing therefrom is added to the fund.

The Oregon State Pharmaceutical Association Educational Fund, established by the Oregon State Pharmaceutical Association at its thirty-sixth convention held at Corvallis in July 1925, is a fund to be used primarily in making loans to needy and deserving students of Oregon State School of Pharmacy. It may be used also, at the discretion of the trustees of the corporation, for endowing a pharmaceutical library or a chair of research or instruction in the School. The O. S. P. A. Educational Fund is maintained through subscription from Oregon druggists and other sources. On an average, subscriptions are for $100 each, payable in ten annual installments. John F. Allen, '95, of Corvallis, who initiated the establishment of the fund, subscribed $1,000. Granting of loans, rate of interest, and other features are on the same basis as that of the Loan Fund Committee for the other loan funds donated to the College.

The Joseph N. Teal Loan Fund. By bequest the late Joseph N. Teal of Portland gave to the College the sum of five thousand dollars ($5,000) "to be administered as a perpetual revolving fund to be loaned . . . to worthy students pursuing courses of instruction in said College."

A. W. S. Emergency Loan Fund for Women Students. The Associated Women Students set aside a sum of money which is available to women students who are in need of small amounts of money for short periods of time. This fund is under the auspices and administration of the Dean of Women.

Oregon State College Chamber of Commerce Loan Fund. The Oregon State College Chamber of Commerce has placed six hundred dollars with the Loan Committee for the assistance of worthy students. This money is to be administered by the Student Loan Board with special consideration for students in Business Administration.

1933 Senior Class Gift. The Class of 1933 has set aside a substantial sum as a perpetual revolving fund to help worthy students, especially seniors, who need financial assistance.

Honors and Prizes

IN addition to the various honor societies listed elsewhere in this catalog which have as a primary purpose the recognition of superior scholarship and other qualities, honors and prizes have been provided to be awarded to students of unusual achievement.

Senior Honors are conferred by the Administrative Council upon those members of the graduating class who have maintained throughout their entire college course the highest scholastic standing in their school or department. No student is eligible to such honor unless his general average for all subjects has been 2.25 or higher. Election is limited to ten per cent of the graduating members of a school or department.

The **Clara H. Waldo Prizes**, totaling one hundred and forty dollars annually, are awarded each spring in the proportions of fifty, forty, thirty, and twenty dollars respectively to the woman of highest standing registered as a regular student in the senior, junior, sophomore, and freshman year. The committee having charge of the award of these prizes is guided by the following points: (a) proficiency in scholarship, (b) success in student activities, (c) qualities of womanhood, and (d) qualities of leadership.

The Adolphe Wolfe Prizes, totaling two hundred dollars annually, were established in 1927 with the object of recognizing students showing superior business ability. Two prizes of fifty dollars each, two of thirty dollars, and two of twenty dollars are provided for the man and the woman respectively in the senior, junior, and sophomore classes, who in the opinion of the faculty committee on honors and awards gives the greatest promise of applying business principles to the advancement of industrial and social institutions. In awarding the prizes, character and scholarship as well as qualities of leadership are considered.

The **Joseph H. Albert Prize** of twenty-five dollars is an award annually made to the senior student who is adjudged by a joint committee of faculty and students to have made the greatest progress toward the ideal in character, service, and wholesome influence.

The **Chi Omega Prize**. Eta Alpha of Chi Omega offers an annual award of twenty-five dollars to the senior woman who is adjudged by a college committee on honors and awards to approach most nearly an ideal of intellect and spirituality and to have exerted the most wholesome influence upon her associates.

The **E. D. Ressler Memorial**. This award, given by the Oregon State Teachers Association is presented to the junior preparing to enter the teaching profession who in the judgment of the Education faculty, as approved by the committee on honors and awards, has made the best all-around record as an undergraduate.

The **Alpha Zeta Scholarship Cup** is awarded during the first term of the sophomore year to the student in Agriculture receiving the highest grade average in the freshman class.

The **Kappa Delta Pi Award** of twenty-five dollars is made annually to the sophomore enrolled in the School of Education who as a freshman in that school made the highest scholastic average.

The **American Society of Civil Engineers Prizes** comprise junior memberships in the society awarded annually for the three best papers prepared and delivered in the student branch of the society.

The **American Society of Mechanical Engineers Prizes** of twenty-five, fifteen, and ten dollars respectively are awarded annually for the three best papers prepared and delivered in the student branch of the society.

Eta Kappa Nu Cup. This cup is awarded annually to the best student in the sophomore Electrical Engineering class.

The Charles Lathrop Pack Forestry Prize. Through the generosity of Mr. Charles Lathrop Pack of New Jersey, a gift of two thousand dollars has been made to the College to encourage Forestry students to write for publication. The income from the gift is awarded each year to the junior or senior student in Forestry who produces the most interesting, logical, and technically significant paper for publication.

The Omicron Nu Plaque is awarded each year to the senior woman who has best lived the teachings of home economics throughout her college career. Candidates are first selected by a committee of the Home Economics faculty and their names then submitted to vote of the Home Economics Club, final decision resting with the committee.

The Home Economics Prize of a ten-dollar gold-piece was established (1928) by members of Omicron Nu for the purpose of promoting scholarship and leadership in home economics, the recipient being selected by a joint committee representing Omicron Nu and the faculty in Home Economics.

The Drucilla Shepard Smith Prizes. Through the generosity of John E. Smith of the Class of 1902 a sum of five hundred dollars 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 these prizes are appointed by the President of the College.

The Rho Chi Prize of ten dollars is awarded annually to the freshman in Pharmacy who in the judgment of the Rho Chi society and the faculty in Pharmacy has been most outstanding in scholarship and activities.

Scholarships

A NUMBER of scholarships and fellowships have been established largely through the generosity of private donors, providing funds in varying amounts for the encouragement of students showing special promise. Some of these are general scholarships, while others are limited to special fields.

Bernard Daly Educational Fund. Under terms of the will of the late Dr. Bernard Daly of Lakeview, Oregon, worthy self-supporting young men and women of Lake county, Oregon, may receive a part or all of their necessary college expenses. The terms of the will provide that the income from this fund be used to pay the college expenses of at least fifteen students each year. The fund is administered by a board of trustees who select candidates annually from a list of applicants recommended by the county

judge and county school superintendent, following a qualifying examination held in Lake county.

The College Folk Club Scholarship is an award of fifty dollars made annually to an outstanding woman, a high school graduate, selected by the scholarship committee of the College Folk Club.

Fleischmann Fellowship. A grant of nine hundred dollars for the year for chemical research on yeast is given by Standard Brands, Inc., of New York, successor to the Fleischmann Company. Seven hundred and fifty dollars of this amount is the stipend of the Fleishmann Fellowship. It is awarded and the research carried on under the direction of Dr. Roger J. Williams of the Chemistry department.

International Friendship Scholarship. The Home Economics Club of the College on March 2, 1926, established a scholarship of five hundred dollars which is awarded annually to a graduate foreign student to study Home Economics at Oregon State Agricultural 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.

Kingery Dematological Research Fellowship in Chemistry. A research fellowship is awarded for the study of chemical means of combating pathogenic yeast infections. The stipend of six hundred dollars is given by Dr. Lyle B. Kingery of Portland, and the work is to be directed by Dr. Roger J. Williams.

The Lee Scholarship is awarded at Commencement time each year to the woman student in Home Economics registered as a junior, who during her career in college has shown improvement in her work, stability and meritorious record in all her activities, and general all-around worthiness. This scholarship provides a sum of money derived from the annual income of a fund of one thousand dollars bequeathed by Minnie E. Lee as a memorial to her husband J. B. Lee and herself, to be paid to the recipient at the time of her registration in the senior year. The award is not open to any student who has received any other monetary prize.

The Mary J. L. McDonald Fellowship in Reforestation. Through the generosity of 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.

The American Association of University Women Graduate Scholarship. Every three years beginning 1931 the Oregon Division of the American Association of University Women gives a scholarship of twelve hundred dollars 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.

Research and Teaching Fellowships. A number of fellowships are open annually or biennially to graduate students. Most of these afford opportunity to combine teaching or research with study for an advanced degree.

Campus Activities

IMPORTANT in rounding out the benefits of college training is the formation of civic habits of responsibility and leadership through student self-government, student clubs, associations, and societies. The activities of these organizations involve the practice of citizenship in the campus community, the development of friendship through congenial associations, and the broadening of outlook and sympathies. As a result of the diverse interests of campus life and the varying tastes of the students, the following activities and organizations, among others, are maintained by students and faculty.

Student Self-Government

STUDENT self-government places the responsibility of student life, conduct, habits, development, and experience with the entire student body as a group. The students, in accepting the institution of self-government, have perfected an organization known as the Associated Students. Student officers are chosen by general election.

The activities of the Associated Students cover a wide range: the operation of intercollegiate athletics, student publications, forensics and dramatics, musical organizations, professional and technical organizations, honor societies, and class and social activities generally. Within the general student-body organization the Associated Women Students, a chapter of the Intercollegiate Association of Women Students, is responsible for all activities sponsored or participated in by women.

The Classes

EACH entering group of students forms an organization that retains its identity throughout the four years at the State College and after graduation. Class reunions are regularly held by alumni at Homecoming and Commencement.

During their undergraduate days students in the different classes uphold various distinctive traditions. Graduating classes usually leave a class gift to their Alma Mater. Classes returning for their silver anniversary or jubilee also may make gifts as an expression of their loyalty and appreciation toward the institution at which they received their undergraduate education. The classes of 1931 and 1932 jointly provided the main driveway and walks leading to the terrace of the Memorial Union. The Class of 1933 made a contribution to the Student Loan Fund.

Alumni Association

FOSTERED by the graduates and former students of the College, the Oregon State Alumni Association includes 9,037 graduates and approximately 16,500 former students. Alumni of the College live and work in all parts of the world. A magazine, THE OREGON STATE MONTHLY,

published regularly throughout the year, provides the chief means of keeping members, and the public in general, informed concerning happenings and the progress of the College and its alumni.

The Alumni Association is governed by a board of five directors, one of whom is elected each year at the annual business meeting held at Commencement time. The Association was a powerful factor in the building of the Memorial Union on the campus and maintains its permanent secretary and office staff in Room 111, Memorial Union, where complete files are kept of all graduates of the College.

The officers of the Association for 1933-34 are as follows:

CHARLES H. REYNOLDS, '13, La Grande	President
DON W. HOLGATE, '97, Portland	Vice-president
ARTHUR K. BERMAN, '07, Corvallis	Treasurer
EDWARD C. ALLWORTH, '16, Corvallis	Secretary
DAVID A. WRIGHT, '08, Salem, Oregon	Director
KENNETH C. POOLE, '23, Portland, Oregon	Director
R. EARL RILEY, '12, Portland, Oregon	Alumni Members Memorial Union Board of Governors
ROY A. CLARK, '09, Portland, Oregon	Alumni Members Memorial Union Board of Governors
E. E. WILSON, '89, Corvallis, Oregon	Alumni Members Memorial Union Board of Governors
F. EARL PRICE, '22, Corvallis, Oregon	Alumni Members Memorial Union Board of Governors
J. M. REYNOLDS, '10, Corvallis, Oregon	Alumni Member Board of Control
J. F. PORTER, '12, Corvallis, Oregon	Alumni Member Memorial Union Board of Directors

Miscellaneous Organizations

ON the following pages are listed various classifications of student organizations at the State College. In addition, a large number of miscellaneous organizations are maintained. Examples are the Bernard Daly Club, composed of those students holding Bernard Daly scholarships, Masonic and Eastern Star organizations, and clubs composed of students affiliated with certain religious denominations, such as the Newman Club, Westminster Association, and Wesley Association.

The Faculty Men's Club maintains a program of social, recreational, and professional activities centered in its suite of rooms in the Memorial Union. The American Association of University Women maintains a Corvallis branch. The Oregon State Dames, a social organization for wives and mothers of students, is affiliated with the national organization of University Dames. The College Folk Club includes women connected with the staff directly or through immediate family connection. The Biology Club, Sigma Xi association, and Phi Beta Kappa association are primarily faculty organizations.

The Young Men's Christian Association aims to give encouragement and effective expression to the highest Christian idealism, to render helpful service to promote social and religious activities on the campus and to develop interest in world problems. The organization cooperates with many institutional student welfare agencies and with the churches. In carrying out programs of religious education, outstanding leaders representing different religious and racial points of view are brought to the campus. Friendly international and interracial relations are fostered. Many personal and group conferences are held. The "Y" headquarters constitutes a social center for men students.

The Young Women's Christian Association provides women students with opportunities for religious education, social activity, friendship, study,

and entertainment. The Association cooperates with other student welfare agencies on the campus and with the local churches. Open forums, discussion groups, services of worship, personal conferences, and social gatherings are held.

The Cosmopolitan Club, a local chapter of the Association of Cosmopolitan Clubs of the World, includes in its membership representatives of all foreign countries represented on the campus together with many Americans interested in world relations. The organization provides social and educational advantages for its members and seeks to promote international friendship.

Athletic Organizations

CLOSELY related to the instruction in physical education, athletic organizations are maintained both for men and for women students. The State College is a member of the Pacific Coast Athletic Conference composed of ten leading universities and colleges of the Coast. In addition to intercollegiate athletics, a comprehensive program of intramural sports is sponsored. Athletic organizations supplement the organized sports.

Men's Sports. Major intercollegiate sports for men include football, basketball, baseball, and track. Minor intercollegiate sports include swimming, rowing, and polo. Intramural sports include speedball, track, basketball, swimming, touch football, cross country, golf, wrestling, volleyball, handball, tennis, baseball, and boxing.

The Minor "O" Association includes all men who have been awarded a letter in any of the minor sports.

The Varsity "O" Association includes all men who have been awarded a major-sport letter in recognition of service on the intercollegiate athletic team and who have been duly voted upon and initiated into the Association. Annual reunions are held at Homecoming.

Women's Sports. Organized sports for women include hiking, volleyball, archery, dancing, hockey, baseball, basketball, swimming, tennis, badminton, deck tennis, horseshoes, and golf. Supplementing the facilities of the Women's Building and the athletic fields, Kinlani Lodge, a cabin retreat in the Coast Range mountains, provides an outdoor center for the sports activities.

The Women's Athletic Association sponsors women's athletic contests. Members are chosen for achievement in athletics and outstanding character. The Association develops student leadership, furnishes student athletic managers, stimulates and regulates participation. As a member of the Athletic Conference of American College women, it correlates its program with a nation-wide effort to maintain women's athletics on a high educational level.

The Orange "O" Association is composed of women holders of the Orange "O," awarded to those members of the Women's Athletic Association who have met the requirements, including the earning of points in interclass athletics.

Forensic and Dramatic Organizations

FORENSIC and dramatic activities are fostered at the State College not only for the benefits which such activities bring to those participating but also for their intellectual and cultural value to the campus generally. The State College is a member of the Pacific Forensic League, composed of the leading colleges and universities of the Coast, and of the Intercollegiate Forensic Association of Oregon, composed of ten of the colleges and universities of the state. Chapters of the national societies, Delta Sigma Rho and National Collegiate Players, are maintained.

Drama. In connection with the instruction in community drama, groups of short plays are regularly presented. The National Collegiate Players present three major plays each year. Special student organizations such as Salmagundi, the Wesley Players, and the Westminster Players afford further opportunity for participation in dramatic activities.

Forensic Division of the Associated Students. This organization brings together for cooperative activity all campus organizations and individuals interested in any phase of forensics.

Intercollegiate Debate and Oratory. From thirty-six to forty Oregon State teams, supporting both the negative and the affirmative of many questions, each year participate in approximately seventy intercollegiate debates. The College participates in the old-line State Oratorical Contest, the state Peace oratorical contests, and the state and Pacific Coast extempore speaking contests.

Local Debate and Oratory. Interclass and interorganization contests are held in debate, oratory, and extempore speaking. Approximately forty teams participate each year, the winners receiving loving cups.

Honor Societies

VARIOUS societies having as their chief purpose the promotion and recognition of scholarship elect annually from among the student body limited numbers of those who have shown superior scholastic attainment, qualities of leadership, and personal character. The fact that most of these societies are national in scope with chapters in the leading colleges and universities and with uniform high standards of membership makes election to one of the honor societies a distinction greatly prized. Some of these organizations maintain activities calculated to promote appropriate development of their members and an interest in scholarly or professional achievement in their respective fields.

The following list includes the honor societies at present represented at the State College:

Phi Kappa Phi (All-College, men and women).
Alpha Tau Delta (Nursing, women).
Alpha Lambda Delta (Underclass women).
Alpha Zeta (Agriculture, men).

Delta Sigma Rho (Forensics, men and women).
Eta Kappa Nu (Electrical Engineering).
Euterpe (Music, women).
Gamma Sigma Delta (Agriculture).
Intercollegiate Knights (Beaver Knights, sophomore men).
Kappa Kappa Alpha (Art, men and women).
Kappa Kappa Psi (Band).
Mortar Board (Senior women).
Mu Beta Beta (4-H Clubs, men and women).
National Collegiate Players (Dramatics, men and women).
Omicron Nu (Home Economics).
Orchesis (Dancing, women).
Parthenia (Physical Education, women).
Phi Lambda Upsilon (Chemistry).
Phi Sigma (Biology, men and women).
Rho Chi (Pharmacy, men and women).
Sigma Alpha (Physical Education, men).
Sigma Pi Sigma (Physics, men).
Sigma Tau (Engineering).
Tau Beta Pi (Engineering).
Talons (Sophomore women).
Theta Sigma Phi (Journalism, women).

Musical Organizations

EFFORT is made to stress the cultural benefits of music as an extra-curricular activity. Musical organizations are recognized not only as of great value to the students participating but as essential agencies for developing musical appreciation throughout the institution.

The Oregon State Symphony Orchestra prepares regular programs of orchestral music of a type suitable to the proficiency of the members and also assists in the programs of the College Chorus and at the Commencement exercises. Students and faculty members who play violin, viola, cello, or double bass as well as wood-wind and brass instruments are eligible to membership in the orchestra on passing an individual test given by the conductor.

The R. O. T. C. Band. Membership in the 75-piece, uniformed R.O.T.C. Band is open to students passing a satisfactory examination in the elements of music and ability to perform on a band instrument. Individual practice and attendance at rehearsals are required. The Band furnishes basses, baritones, altos and drums; otherwise, members must furnish their own instruments, which must be in low pitch.

The Glee Club is a student men's organization, membership in which is determined by the conductor through individual examination of candidates. Programs of male choruses, glees, and compositions of a lighter nature are prepared.

The Madrigal Club is a student women's organization, membership in which is determined by the conductor through individual examinations of candidates. Compositions for women's voices of various types are studied. Concerts are given alone and in conjunction with the Glee Club at various times during the year.

The College Chorus. Besides attending regular rehearsals of the Club to which they belong, the members of the Glee and Madrigal Clubs are required to attend additional rehearsals of the combined Glee and Madrigal Clubs, at which numbers are rehearsed for concerts given at Christmas time, Easter time, and Commencement. Occasionally the two clubs unite in the production of a light opera.

The Mandolin and Guitar Club gives opportunity to students proficient on instruments of this nature to play in ensemble under the instructor in small-stringed instruments. Regular weekly rehearsals are held.

Professional Societies

A NUMBER of departmental and professional societies, most of them national organizations having chapters in colleges and universities throughout the country, are maintained by students for the purpose of fostering high professional standards in scholarship. Election to membership is as a rule on the basis of special fitness or attainment in the respective departmental or professional fields. The professional societies at the State College comprise the following:

Alpha Delta Sigma (Advertising, men).
Alpha Kappa Psi (Commerce, men).
Beta Alpha Psi (Accounting).
Chi Alpha Chi (Advertising).
Epsilon Pi Tau (Industrial Arts).
Kappa Delta Pi (Education, men and women).
Kappa Psi (Pharmacy).
Phi Chi Theta (Commerce, women).
Pi Mu Epsilon (Mathematics, men and women).
Scabbard and Blade (Military).
Sigma Delta Chi (Journalism, men).
Sigma Delta Psi (Physical Education, men).
Xi Sigma Pi (Forestry).

Social Organizations

THROUGH social organizations, particularly through living groups, students enjoy association with fellow students and personal contact with members of the faculty. The contacts thus afforded constitute one of the pleasantest features of campus life. All students have opportunity to belong to some type of social organization. Students living in halls of residence are organized into groups with their own officers and social programs. Faculty counsel is provided for all such groups.

Independent Students. Students living outside the halls of residence include independent students and those belonging to fraternities or sororities. Independent students are organized for social activities on plans varying somewhat at the different institutions. Independent women are organized in Phrateres, national society for independent women, and independent men maintain a group of clubs. All independent students, includ-

ing those residing in the dormitories, are represented in the Independent Student Council, which is a member of the Independent Intercollegiate Student Association.

Fraternities and Sororities. Similarly, the fraternities are organized into the Interfraternity Council, which is a member of the national Interfraternity Conference. The sororities (women's fraternities) are organized into the Panhellenic Council, which is a member of the national Panhellenic Congress.

Fraternities at the State College are: Alpha Chi Rho, Alpha Gamma Rho, Alpha Sigma Phi, Alpha Tau Omega, Beta Kappa, Beta Theta Pi, Chi Phi, Delta Chi, Delta Sigma Phi, Delta Tau Delta, Delta Upsilon, Kappa Delta Rho, Kappa Sigma, Lambda Chi Alpha, Phi Delta Theta, Phi Gamma Delta, Phi Kappa Tau, Phi Mu Delta, Phi Sigma Kappa, Pi Kappa Alpha, Pi Kappa Phi, Sigma Alpha Epsilon, Sigma Chi, Sigma Nu, Sigma Phi Epsilon, Sigma Phi Sigma, Sigma Pi, Tau Kappa Epsilon, Theta Chi, Theta Kappa Nu, Theta Xi.

Sororities at the State College are: Alpha Chi Omega, Alpha Delta Pi, Alpha Gamma Delta, Alpha Omicron Pi, Alpha Xi Delta, Beta Phi Alpha, Chi Omega, Delta Delta Delta, Delta Zeta, Gamma Phi Beta, Kappa Alpha Theta, Kappa Delta, Kappa Kappa Gamma, Pi Beta Phi, Sigma Kappa, Zeta Tau Alpha.

Technical and Professional Clubs

A NUMBER of clubs and associations in the various technical schools and departments have as their object the advancement of interest and information in the respective technical fields. Some of these are student or local branches of national professional societies. Further details concerning some of these clubs are given under the respective schools.

Among the technical and professional clubs are the following: Advertising Club, Agriculture Club, Agricultural Engineers, American Institute of Electrical Engineers, American Society of Civil Engineers, American Society of Mechanical Engineers, American Society of Military Engineers, Engineering Council, Chamber of Commerce, Charles Eliot Club (Landscape Architecture), American Institute of Chemical Engineers, Communications Club, Dairy Club, Farm Crops Club, Forestry Club, 4-H Club, Home Economics Club, Horticultural Club, Industrial Arts Club, Miners' Club, Pharmaceutical Association, Soils Club, Withycombe Club (Animal Husbandry).

Student Publications

STUDENT and alumni periodicals are published at the State College as indicated below. In addition, the official publications of the State Board of Higher Education and institutional publications are listed on another page.

The Oregon State Barometer, published as a four-page, eight-column daily, chronicles campus news together with selected items of general and educational news. Every student receives the paper free.

The Beaver, a carefully compiled, illustrated, substantially bound volume published annually, gives a comprehensive record of the campus year.

The Oregon State Monthly, edited and issued by the Alumni Association of the College in cooperation with the undergraduate student bodies of the several schools, is devoted to the up-building of the institution and its program of service to the state. It reports news of the schools, alumni, and faculty and affords expression of both alumni and undergraduate opinion.

The Oregon State Technical Record is a quarterly magazine devoted to engineering and industry. The magazine is a member of Engineering College Magazines Associated.

The Oregon State Directory comprises a complete directory of all students, faculty members, and institutional employees.

The Annual Cruise, an illustrated annual magazine published by the Forestry Club, aims to unite more closely the forestry and lumbering industries of the Pacific Northwest and to advance scientific forestry and lumbering.

The Student Handbook is a pocket-size booklet issued by the Associated Students giving information for new students, especially regarding the organizations, regulations, and traditions for which the students are primarily responsible. It includes the constitution and by-laws of the Associated Students, as well as some of the established songs and cheers.

Part III

Resident Instruction

Lower Division

MAHLON ELLWOOD SMITH, Ph.D., Dean and Director of Lower Division, Oregon State System of Higher Education.
GERTRUDE FULKERSON, Secretary to the Dean.

FRESHMAN and sophomore work in the liberal arts and sciences is unspecialized and is offered through the Lower Division organization at both the University and the State College on a parallel basis leading to the Junior Certificate. At the close of the sophomore year the student selects a major course of study.

For students who plan to complete work for the bachelor's degree the two lower division years provide breadth of general education and the foundation for specialization in some major field on the upper division level of liberal arts and sciences or in the professional or technical curricula. Students explore several fields of lower division study with a view to determining special interests and aptitudes. For students who complete no more than the first two years of college or university, the lower division aims to afford a balanced cultural program and preparation for intelligent citizenship.

Purpose

THE primary purpose of the lower division organization in the Oregon State System of Higher Education, as established by the State Board of Higher Education, is as follows:

(1) Basic Education.

Insuring to all students the elements of a sound general education during their first two years; delaying specialization until the junior and senior years and then encouraging it to a high degree.

(2) Orientation.

Providing students with a period of exploratory contact which will enable the institution to assist them to make a wise selection of specialization on the basis of their abilities and aptitudes.

Lower Division Requirements

FOR the purpose of adjusting the work to the two-fold objectives of basic education and orientation, subjects have been arranged in three groups, each representing a comprehensive field of knowledge, as follows: LANGUAGE AND LITERATURE, SCIENCE (including the biological and physical sciences and mathematics), and SOCIAL SCIENCE.

Group Subjects. Students are required during the first two years to complete a prescribed amount of work selected in these groups. The purpose of the group requirements is to provide both breadth and depth to the student's lower division curriculum. In the Lower Division, students must complete at least 9 approved term hours in each of the three groups and at least 9 additional approved term hours in courses numbered 200-210, or equivalent, in any one of the same three groups. Unless otherwise authorized, freshmen take two year-sequences in the 100-110 courses and sophomores take one year-sequence in the 100-110 courses and one in the 200-210 courses.

Required Subjects. Besides fulfilling group requirements, all lower division students must take required work in English Composition, Hygiene and Physical Education. Men are required to take Military Science and Tactics. Students must also take the required aptitude and placement examinations, and make the adjustments indicated as a result of standing achieved in these tests.

Elective Work. Besides the group courses and the required subjects, students complete their study programs by electing, with the approval of the Dean of Lower Division, departmental or school requirements or exploratory subjects according to their respective interests and aptitudes. Those students who have determined on a major subject take the prerequisites prescribed by the major school or department. Students who are uncertain of their dominant interest or their vocational intentions, or who do not plan to pursue major specialization later, take a program of studies, approved by the Dean of Lower Division, designed to aid them in self-exploration and individual development.

Junior Certificate

STUDENTS who have met the group requirements and completed a total of at least 93 term hours of required and elective freshman and sophomore work, qualify for one of three certificates, depending on their objectives and attainments:

(1) **The Junior Certificate**, which admits to upper division standing and the opportunity to pursue a major curriculum leading to a degree. It requires a minimum grade-point average of 1.00.

(2) **The Junior Certificate with Honors Privileges**, which admits to the privilege of working for Honors in those schools providing Honors, work. It requires a grade-point average fixed by the Honors Council, usually about 1.75, represented by a scholastic average slightly below B.

(3) **The Lower Division Certificate**, which recognizes the successful completion of two years of lower division work and which is granted upon request to students whose desire has been only to round out their general education. It does not admit to upper division standing or classification as a junior, however, and hence does not require the higher scholastic average required of students who earn the other two certificates.

Group Courses

YEAR-SEQUENCES applicable in meeting group requirements are listed below. These courses are also available as electives. Descriptions of the courses are printed under the respective departments.

LANGUAGE AND LITERATURE GROUP*

English

Eng 101, 102, 103. Literature Survey, 3 hours each term.
Eng 104, 105, 106. Introduction to Literature, 3 hours each term.
Eng 201, 202, 203. Shakespeare, 3 hours each term.

Germanic Languages

GERMAN

Ger 101, 102, 103. German Literature (Third Year German), 3 hours each term.
Ger 201, 202, 203. German Literature (Third Year German), 3 hours each term.

Romance Languages

FRENCH

RL 101, 102, 103. French Literature, 3 hours each term.
RL 201, 202, 203. French Literature, 3 hours each term.

SPANISH

RL 107, 108, 109. Spanish Literature, 3 hours each term.
RL 207, 208, 209. Spanish Literature, 3 hours each term.

SCIENCE GROUP

Science Surveys

BiS 101, 102, 103. Biological Science Survey, 4 hours each term.
PhS 101, 102, 103. Physical Science Survey, 4 hours each term.

Bacteriology

Bac 201, 202, 203. Elementary Bacteriology, 3 hours each term.
Bac 204. General Bacteriology, 3 hours first or second term.
Bac 205. General Bacteriology, 3 hours second or third term.
Bac 206. General Bacteriology, 3 hours third term.

Botany

Bot 201, 202, 203. General Botany, 3 hours each term.

Chemistry

Ch 201, 202, 203. Elementary General Chemistry, 3 hours each term.
Ch 204, 205, 206. General Chemistry, 5 hours each term.
Ch 208, 209. General Chemistry, 5 hours second and third terms.

Entomology

Ent 201, 202, 203. General Entomology, 3 hours each term.

Geology

G 201, 202, 203. Geology, 3 hours each term.
G 204, 205, 206. Geology Laboratory, 1 hour each term.

Mathematics

Mth 100. Intermediate Algebra, 4 hours one term.
Mth 101, 102, 103. Unified Mathematics, 4 hours each term.
Mth 108. Mathematics of Finance, 4 hours one term.
Mth 109. Elements of Statistics, 4 hours one term.
Mth 201, 202, 203. Differential and Integral Calculus, 4 hours each term.
Mth 204, 205, 206. Differential and Integral Calculus, 4 hours each term.

*AA 100, 101, 102 (Art Appreciation), 3 hours each term, may be used by Lower Division students in satisfying this group.

Physics

Ph 201, 202, 203. General Physics, 4 hours each term.
Ph 204, 205, 206. Astronomy and Meteorology, 3 hours each term.

Psychology

Psy 201, 202, 203. Elementary Psychology, 3 hours each term. (Applicable in satisfying group requirements in Science group if accompanied by Psy 204, 205, 206.)
Psy 204, 205, 206. Elementary Psychology Laboratory, 1 hour each term.
Other lower division courses in psychology are listed under SOCIAL SCIENCE *group.*

Zoology

Z 201, 202, 203. General Zoology, 3 hours each term.
Z 204, 205, 206. Vertebrate Zoology, 4 hours each term.

SOCIAL SCIENCE GROUP

General Social Science

SSc 101, 102, 103. Background of Social Science, 3 hours each term.

Economics

Ec 201, 202, 203. Principles of Economics, 3 hours each term.

History

Hst 201, 202, 203. History of Western Civilization, 3 hours each term.
Hst 207, 208. England and the British Empire, 3 hours first and second terms.
Hst 209. The World Since 1914, 3 hours third term. } Hst 207, 208, 209 constitute a year sequence.

Political Science

PS 201, 202, 203. Modern Governments, 4 hours each term.

Psychology

Psy 201, 202, 203. Elementary Psychology, 3 hours each term.
Psy 204, 205, 206. Elementary Psychology Laboratory, 1 hour each term.

Sociology

Soc 201, 202, 203. Elements of Sociology, 3 hours each term.

Other Lower Division Courses

In addition to the courses applicable in meeting group requirements, the following courses in arts and sciences are available in meeting Lower Division and elective requirements. Descriptions of the courses are printed under the respective departments.

LANGUAGE AND LITERATURE

English

LITERATURE

Eng 161. American Literature, 3 hours first or third term.
Eng 261, 262. Individual Authors, 3 hours each term, second and third terms.
Eng 263. Great Books, 3 hours first term.
Eng 264, 265, 266. Continental European Literature, 3 hours each term.
Eng 271, 272, 273. Contemporary Literature, 3 hours each term.
Eng 274. The Short Story, 3 hours third term.
Eng 275. The Bible as Literature, 3 hours third term.
Eng 276. The Novel, 3 hours second term.

WRITTEN ENGLISH

Eng K. A one-term course for students failing to pass the English Placement examination. One hour first or second term.
Eng 111, 112, 113. English Composition, 3 hours each term.
Eng 118. Technical Report Writing, 3 hours third term.
Eng 211. Essay Writing, 3 hours, first term.
Eng 212. Advanced Essay Writing, 3 hours second term.
Eng 213, 214, 215. Short Story Writing, 2 hours each term.
Eng 217. Business English, 3 hours any term.

SPEECH

Sp 111, 112, 113. Extempore Speaking, 3 hours each term.
Sp 211, 212, 213. Oratory Squad, 2 hours each term.
Sp 214, 215, 216. Extempore Speaking Squad, 2 hours each term.
Sp 217, 218, 219. Debating, 2 hours each term.
Sp 220. Argumentation, 3 hours first or third term.
Sp 221. Speech Composition, 3 hours first term.
Sp 222. The Extended Address, 3 hours third term.
Sp 231. Parliamentary Procedure, 3 hours third term.
Sp 234. Radio Speech, 3 hours any term.

DRAMA

Sp 121, 122, 123. Interpretation, 3 hours each term.
Sp 244. Stagecraft and Lighting, 3 hours any term.
Sp 247, 248, 249. Community Drama, 3 hours each term.

Modern Languages

GERMAN

Ger 1, 2, 3. First Year German, 4 hours each term.
Ger 4, 5, 6. Second Year German, 4 hours each term.

FRENCH

RL 1, 2, 3. First Year French, 4 hours each term.
RL 4, 5, 6. Second Year French, 4 hours each term.

SPANISH

RL 11, 12, 13. First Year Spanish, 4 hours each term.
RL 14, 15, 16. Second Year Spanish, 4 hours each term.

SCIENCE

Chemistry

Ch 221. Organic Chemistry, 5 hours first term.
Ch 226, 227. Organic Chemistry, 5 hours each term, first and second terms.
Ch 231. Qualitative Analysis, 5 hours first term.
Ch 232. Quantitative Analysis, 5 hours second or third term.
Ch 233. Quantitative Analysis, 5 hours third term.
Ch 251. Elementary Biochemistry, 5 hours second term.

Entomology

Ent 211. Principles of Economic Entomology, 3 hours any term.
Ent 223. Elementary Entomology, 3 hours third term.
Ent 234. Entomology for Engineers, 2 hours, first or third term.
Ent 235. Bee Culture, 3 hours third term.

Geology

G 280, 281, 282. Introduction to Field Geology, 1 or 2 hours each term.

Mathematics

Mth 120. Intermediate Algebra for Engineers, 5 hours one term.
Mth 121, 122, 123. Trigonometry and Elementary Analysis, 5 hours each term.
Mth 131, 132, 133. Mathematical Analysis, 5 hours each term.

Physics

Ph 111, 112, 113. Engineering Physics, 3 hours each term.
Ph 161. Rudiments of Photography, 2 hours one term.

Zoology

Z 130. Principles of Zoology, 3 hours third term.
Z 210. Elementary Human Anatomy, 3 hours first term.
Z 211. Elementary Human Physiology, 5 hours second or third term.
Z 213. Field Zoology, 4 hours third term.

SOCIAL SCIENCE

Economics

Ec 211. Outlines of Economics, 4 hours any term.
Ec 212. Outlines of Economics, 3 hours any term.

History

Hst 224, 225, 226. History of American Civilization, 3 hours each term.

Philosophy

Phl 111, 112, 113. Practical Life Philosophies. Three terms, 2 hours each term.

Political Science

PS 212. American National Government, 3 hours any term.

Psychology

Psy 111. Mental Hygiene, 3 hours any term. (No credit allowed to students who have taken Ed 101).
Psy 112, 113, 114. Introduction to Reflective Thinking, 3 hours each term.
Psy 211. Outlines of Psychology, 4 hours any term.
Psy 212, 213, 214. Logic, 3 hours each term.

Sociology

Soc 211. General Sociology, 4 hours any term.
Soc 212. General Sociology, 3 hours any term.

Lower Division Curriculum

Junior Certificate, Junior Certificate with Honors Privileges, Lower Division Certificate

THE general distribution of work for Lower Division students is shown in the curriculum outlined below.

Freshman Year	Term hours 1st	2d	3d
Year-sequence in any one of the three groups	3–4	3–4	3–4
Year-sequence in another of the three groups (may be deferred until sophomore year)	3–4	3–4	3–4
English Composition (Eng 111, 112, 113)	3	3	3
Military Science	1	1	1
[1]Physical Education	1	1	1
[2]Departmental or school requirements or exploratory electives	5–3	5–3	5–3
	16	16	16

Sophomore Year			
Sophomore year-sequence in one of the groups begun in the freshman year	3–4	3–4	3–4
Year-sequence in a third group	3–4	3–4	3–4
Military Science	1	1	1
Advanced Physical Education	1	1	1
[2]Departmental or school requirements or exploratory electives	8–6	8–6	8–6
	16	16	16

[1]General Hygiene, 2 term hours, is taken one term in place of Physical Education.
[2]Chosen with the approval of the Dean of Lower Division. If one of the year-sequences in group requirements is deferred to the sophomore year, the opportunity for school requirements or electives is correspondingly increased. The elections may well be used for fulfilling requirements in a third group.

School of Science

Faculty

EARL LEROY PACKARD, Ph.D., Dean of the School of Science.
GLADYS LEIBBRAND, Secretary to the Dean.

Bacteriology

GODFREY VERNON COPSON, M.S., Professor of Bacteriology; Head of Department.
JOSEPH ELLSWORTH SIMMONS, M.S., Associate Professor of Bacteriology.
WALTER BENO BOLLEN, Ph.D., Assistant Professor of Bacteriology.
DAVID BERRY CHARLTON, Ph.D., Instructor in Bacteriology.

Botany

*HOWARD PHILLIPS BARSS, S.M., Professor of Botany; Head of Department.
CHARLES ELMER OWENS, A.M., Professor of Botany and Plant Pathology; Acting Head of Department.
WINFRED MCKENZIE ATWOOD, Ph.D., Professor of Plant Physiology.
WILLIAM EVANS LAWRENCE, B.S., Associate Professor of Plant Ecology.
HELEN MARGARET GILKEY, Ph.D., Associate Professor of Botany; Curator of Herbarium.
ETHEL IDA SANBORN, Ph.D., Associate Professor of Botany.

Chemistry

JOHN FULTON, M.S., Professor of Chemistry; Head of Department.
EARL C GILBERT, Ph.D., Professor of Physical Chemistry.
J. SHIRLEY JONES, M.S.A., Professor of Agricultural Chemistry.
ROGER JOHN WILLIAMS, Ph.D., Professor of Chemistry.
JOSEPH PARKE MEHLIG, Ph.D., Associate Professor of Analytical Chemistry.
WILLIAM ELMER CALDWELL, Ph.D., Assistant Professor of Chemistry.
LEO FRIEDMAN, Ph.D., Assistant Professor of Chemistry.
CHARLES S PEASE, Ph.D., Assistant Professor of Organic Chemistry.
BERT EINAR CHRISTENSEN, Ph.D., Instructor in Chemistry.
GLEN CHASE WARE, M.S., Instructor in Chemistry.
COWIN COOK ROBINSON, A.M., Instructor in Chemistry
EDWARD CLEVELAND CALLAWAY, M.S., Instructor in Chemistry.

Entomology

DON CARLOS MOTE, Ph.D., Professor of Entomology; Head of Department.
WILLARD JOSEPH CHAMBERLIN, Ph.D., Associate Professor of Entomology.
HERMAN AUSTIN SCULLEN, M.A., Associate Professor of Entomology.

*Resigned.

Geology

EARL LEROY PACKARD, Ph.D., Professor of Geology; Head of Department.
EDWIN THOMAS HODGE, Ph.D., Professor of Economic Geology.
IRA SHIMMIN ALLISON, Ph.D., Professor of Geology.
WILLIAM DONALD WILKINSON, Ph.D., Assistant Professor of Geology.

Mathematics

WILLIAM EDMUND MILNE, Ph.D., Professor of Mathematics; Head of Department.
CHARLES LESLIE JOHNSON, B.S., Professor of Mathematics.
EDWARD HIRAM MCALISTER, A.M., Professor of Mathematics.
EDWARD BENJAMIN BEATY, M.A., Professor of Mathematics.
NICHOLAS TARTAR, B.S., Associate Professor Emeritus of Mathematics.
HARRY LYNDEN BEARD, M.A., Assistant Professor of Mathematics.
JOHN ALBERT VAN GROOS, M.S., Assistant Professor of Mathematics.
GEORGE ALFRED WILLIAMS, A.M., Assistant Professor of Mathematics.
WILLIAM JOHN KIRKHAM, A.M., Instructor in Mathematics.

Nursing Education

*ELNORA ELVIRA THOMSON, R.N., Professor of Nursing Education; Director of Department.
*RUTH VEE WHEELOCK, M.A., R.N., Assistant Professor of Nursing Education.

Physics

WILLIBALD WENIGER, Ph.D., Professor of Physics; Head of Department.
WILLIAM PINGRY BOYNTON, Ph.D., Professor of Physics.
WILLIAM BALLANTYNE ANDERSON, Ph.D., Professor of Physics.
FRED BUCKNER MORGAN, M.S., Assistant Professor of Physics.
EDWIN ARTHUR YUNKER, Ph.M., Assistant Professor of Physics.
JOHN CLIFTON GARMAN, Ph.M., Assistant Professor of Physics.
WILLIAM ROY VARNER, M.S., E.E., Instructor in Physics.

Zoology

NATHAN FASTEN, Ph.D., Professor of Zoology; Head of Department.
†ARTHUR RUSSELL MOORE, Ph.D., Research Professor of General Physiology.
KENNETH LLEWELLYN GORDON, M.A., Assistant Professor of Zoology.
ROSALIND WULZEN, Ph.D., Assistant Professor of Zoology.
JOHN LYNN OSBORN, A.M., Assistant Professor of Zoology.
EDITH LIDA BENEDICT, M.A., Instructor in Zoology.

---

*Members of the faculty in Nursing Education, University of Oregon Medical School.
†On leave of absence as Visiting Instructor to the Tohoku Imperial University, Sendai, Japan.

General Statement

THE School of Science performs a threefold function. It provides major curricula in science for students whose objective is a liberal education and who proceed to a degree of Bachelor of Arts or Bachelor of Science. In the second place, the School of Science provides professional preparation for students planning to enter some scholarly occupation in the realm of science, and who therefore take both an undergraduate science major and from one to three or more years of graduate study in science. In the third place, the School of Science provides elective and service courses for students majoring in other schools, or those interested in science who require it as a basis for technical or professional work in other allied schools.

Training in science is afforded students preparing to teach science in secondary schools or in institutions of higher education; for positions in which a knowledge of science is fundamental for research, or for professional work in science or in its many applications to modern civilization.

The instruction in the first two years is made as broad and liberalizing as possible, laying a solid foundation for upper division and graduate work in the various fields of science and affording preparation in basic sciences underlying the work of technical and professional schools.

Science at the University. By action of the State Board of Higher Education March 7, 1932, all major work in the Oregon State System of Higher Education leading to baccalaureate and advanced degress in biological science, physical science, and mathematics was confined to the School of Science at the State College. Lower division work comprising instruction in the freshman and sophomore years was assigned to both the State College and the University.

The lower division work in botany, chemistry, geology, mathematics, physics, and zoology at the University constitutes essentially the equivalent of lower division work at the State College, and students finding it more convenient to spend their freshman and sophomore years at the University may transfer to the State College for their major work without loss of credit and with fundamental requirements for upper division work in these subjects fully met.

The lower division program in science at both institutions, besides laying a broad foundation for specialization, is intended also to serve the needs of students majoring in other fields. A limited number of special upper division service courses, basic to work given by other schools and prescribed by them, are offered at the University.

Complete course offerings in Science at the University are listed on pages 147-148.

Requirements for Admission

STUDENTS entering as freshmen with the definite intention of specializing in science or mathematics or of preparing to enter a medical school register in the Lower Division for the first two years, designating Science as their "group' of principal interest. The students objective

in the Lower Division is to obtain a broad general education and to determine upon a field in which he desires to major.

Preparation for Specialization. The Science advisers, representing the different departments in which upper division students may major, help students in the Lower Division in the selection of specific courses prerequisite to major work. In the Science curricula (pages 113-121), suggested lower division curricula are included designed to aid students in meeting the requirements for a Junior Certificate and in the selection of those courses which will best prepare for majoring in a given science.

Junior Certificate Required for Entrance. Students must obtain a Junior Certificate before admission to the School of Science. The requirements for this certificate may be briefly summarized as follows: The student must complete at least 93 term hours, with a minimum grade point average of 1.00; must satisfy the English composition, military, and physical education requirements; and must complete the group requirements in Language and Literature, Social Science, and Science.

Requirements for Graduation

BACCALAUREATE and advanced degrees are offered by the School of Science in all the science departments, including Bacteriology, Botany, Chemistry, Entomology, Geology, Mathematics, Physics, and Zoology. The bachelor's degree is also offered in General Science.

Baccalaureate Degrees. A student may be granted the degree of Bachelor of Arts or Bachelor of Science by meeting the institutional requirements for the respective degree and completing 192 term hours, of which 45 must be in upper division work and of these at least 24 must be in the major department.

In order to insure as broad a training as possible, curricula have been so planned that students are not required to take more than 90 term hours within the School of Science nor more than 54 term hours in the major department in order to meet the requirements in any field. A student is thus enabled to follow his own interests outside the School of Science while obtaining adequate training in science, including preparation for graduate work leading to advanced degrees.

Graduate Degrees. Through the Graduate Division graduate work is offered leading to the degrees of Master of Arts and Master of Science in each of the science departments and to the degree of Doctor of Philosophy in the departments of Botany, Chemistry, Geology, Mathematics, Physics, and Zoology.

For the requirements for the M.A., M.S., and Ph.D. degrees see the section of the catalog devoted to the Graduate Division.

Facilities

MATERIAL facilities for the work of the School of Science comprise the various laboratories equipped for instruction and research in science. The biological science laboratories are located in Agriculture Hall. The Mathematics department occupies the third floor of the

adjacent Dairy Building. The physical science laboratories are located in Science Hall, the Physics Building, and the Mines Building. Important adjuncts to the instruction in physics are radio station KOAC and the Science Photographic Service, both located in the Physics Building.

Oregon affords an almost unlimited region for field studies in plants, animals, and geological materials, thus offering many interesting research problems for advanced and graduate students.

Scientific Collections. In addition to the usual laboratory equipment available in each department, mention should be made of the Herbarium, consisting of 40,000 plants, a collection of insects numbering more than 35,000 specimens, a collection of representative birds of Oregon, and extensive collections of invertebrate fossils and igneous rocks of Oregon.

Oregon Marine Biological Laboratory. The Oregon Marine Biological Laboratory, established for undergraduate and graduate study and research work in marine biology, is organized as an integral part of the School of Science and is administered by the Dean of the School. The marine laboratory will be developed as a significant factor in science instruction and research throughout the state system of higher education.

Curricula in Science

As an aid to students in meeting the requirements in the various departments and divisions, curricula are outlined for undergraduate students majoring in general science or in one of the special sciences and for students preparing to study medicine or nursing.

Suggested Lower Division Curricula. In connection with the various major curricula, suggested programs for the freshman and sophomore years are presented for students in the Lower Division interested in Science. Such curricula have been provided in Bacteriology, Botany, Chemistry, Entomology, General Science, Geology, Mathematics, Nursing Education, Physics, Preparatory Medical, and Zoology.

Major Curricula. Curricula covering required work requisite to the degree of Bachelor of Arts or Bachelor of Science have been developed for the divisions of the School of Science. The curricula as outlined are designed to show the student the most satisfactory sequence of courses leading to a degree and to indicate the minimum courses required for a major in a given department. Each curriculum permits election of at least one-half of a student's work outside of the School of Science, thus enabling the student to obtain a broad college training even though he may be preparing for specialized work in some field of science. The electives in these curricula should be utilized to meet a definite objective rather than as an easy way of accumulating credit for graduation. By careful planning of the use of these electives a student may attain a definite objective whether that be a broad general education, preparation for advanced and graduate work in a specialized field of science, or training for a definite position dependent upon science. Students may prepare to teach science in the secondary schools by majoring either in General Science or in a specified science and fulfilling the requirements for a State Teacher's

Certificate. Under the School of Education are printed the State certification requirements, together with approved major and minor norms in Biological Science, Mathematics, and Physical Science.

Preparatory Medical and Nursing Curricula. The University of Oregon Medical School, one of the six units in the State System of Higher Education, is located in Portland. It was established in 1887 and since 1913 has been the sole medical school in the Pacific Northwest. The Medical School, which is rated Class A by the American Medical Association, offers a four-year professional curriculum in medicine (M.D. degree), following a three-year preparatory medical curriculum. The curriculum in medicine thus comprises a total of seven years beyond the high school. The number of students admitted to the Medical School each year is limited. In addition to the work in medicine, the Department of Nursing Education, as an integral part of the Medical School, offers training for the professional field of nursing.

Preparatory Medical and Preparatory Nursing curricula are offered at both the State College and the University. At each institution students pursuing these curricula are under the supervision of a special faculty advisory committee to assure such selection of studies as will meet the specific interests and needs of students. At the State College the chairman of this committee is Dr. Nathan Fasten.

PREPARATORY MEDICAL CURRICULUM. Courses prescribed by the American Medical Association for entrance to standard medical schools are offered by both the State College and the University. The University of Oregon Medical School requires for admission at least three years of preparatory work in which there is a balance in elective preparation between courses in liberal arts and social sciences and courses in the natural sciences particularly pertinent to the study of medicine.

Entrance to standard medical schools is conditioned upon not only the completion of prescribed work but also an estimate of the student's aptitude to undertake medical studies. The medical aptitude test of the Association of American Medical Colleges gives valuable evidence of the student's ability to undertake a medical course. The test is given during the first term of each year by the premedical advisory committee to all students who expect to apply during the academic year for admission to a medical school. Further knowledge of the student's ability is obtained by frequent conferences between the student and his instructors and authorized advisers.

A student desiring to meet the Junior Certificate requirements and planning to obtain a bachelor's degree (B.A. or B.S.) at the State College or at the University at the end of the first year at the Medical School should select a major department either in the School of Science at the State College or in the College of Arts and Letters or the College of Social Science at the University. His choice of major must be approved by his advisory committee. In order to satisfy the requirements for a bachelor's degree the student must satisfy in the lower division and junior years all requirements for the degree except those that may be met at the University of Oregon Medical School. The upper division course requirements for a major must be approved by his advisory committee and his major dean before he enters the Medical School.

A student may meet the requirements for a major in science in the first year in Medical School, in which case he may elect a more liberal program of non-science subjects. At the close of his first year in medical school he receives the bachelor's degree from the School of Science.

The preparatory medical curriculum recommended as meeting the needs of the majority of students preparing for entrance to the Medical School, is printed on page 120.

PREPARATORY NURSING CURRICULUM. The first two years of a five-year curriculum in Nursing Education offered by the University of Oregon Medical School and leading to the bachelor's degree (B.A. or B.S.) from that institution are offered at both the State College and the University.

The preparatory nursing curriculum is printed on page 121.

Undergraduate Curricula

Suggested Curriculum for Lower Division Students Interested in Science

Freshman Year	Term hours 1st	2d	3d
Year-sequence in any one of the three groups	3–4	3–4	3–4
Year-sequence in another of the three groups (may be deferred until sophomore year) and/or electives	0–3	0–3	0–3
English Composition (Eng 111, 112, 113)	3	3	3
Military Science (men)	1	1	1
[1]Physical Education	1	1	1
Two courses in Physical or Biological Science or exploratory electives	6–9	6–9	6–9
	14–18	14–18	14–18

Sophomore Year			
Sophomore year-sequence in one of the groups begun in the freshman year	3–4	3–4	3–4
Year-sequence in a third group and/or electives	3–6	3–6	3–6
Military Science (men)	1	1	1
Advanced Physical Education	1	1	1
Two courses in Physical or Biological Science or exploratory electives	6–9	6–9	6–9
	14–18	14–18	14–18

[1]General Hygiene, 2 term hours, is taken one term in place of Physical Education.

Curriculum in General Science

B.A., B.S. Degrees

SUGGESTED LOWER DIVISION CURRICULUM

Freshman Year	Term hours 1st	2d	3d
Group requirement in Language and Literature or Social Science	3	3	3
Group requirement in Science	3–5	3–5	3–5
English Composition (Eng 111, 112, 113)	3	3	3
Military Science (men)	1	1	1
[1]Unified Mathematics (Mth 101, 102, 103)	4	4	4
[2]Physical Education	1	1	1
	15–17	15–17	15–17
Sophomore Year			
Group requirement in Social Science or Language and Literature	3	3	3
Two year-sequences in Science	6–10	6–10	6–10
Military Science (men)	1	1	1
Advanced Physical Education	1	1	1
[3]Electives	4–2	4–2	4–2
	15–17	15–17	15–17

UPPER DIVISION MAJOR CURRICULUM

Junior Year			
Year-sequence in Science	3–5	3–5	3–5
[4]Upper division Science	4	4	4
[5]Electives	8	8	8
	15–17	15–17	15–17
Senior Year			
[4]Upper division Science	4	4	4
[5]Electives	11–13	11–13	11–13
	15–17	15–17	15–17

Curricula in Special Sciences

B.A., B.S. Degrees

Bacteriology
Botany
Chemistry
Entomology
Geology
Mathematics
Physics
Zoology

BACTERIOLOGY

SUGGESTED LOWER DIVISION CURRICULUM

Freshman Year			
Group requirement in Social Science or Language and Literature	3	3	3
General Zoology (Z 201, 202, 203)	3	3	3
English Composition (Eng 111, 112, 113)	3	3	3
Military Science (men)	1	1	1
[2]Physical Education	1	1	1
General Chemistry (Ch 204, 205, 206)	5	5	5
	16	16	16

[1]Upon approval of the Dean another science or mathematics course may be substituted for Mth 101, 102, 103.

[2]General Hygiene, 2 term hours, is taken one term in place of Physical Education.

[3]For State teacher's certificate Psy 201, 202, 203 should be elected in sophomore year as it is prerequisite to upper division courses in Education. Psy 201, 202, 203 meets the Social Science group requirement.

[4]These courses should be in fields related to work taken in the Lower Division. G 330, 331, 332, G 340, 341, and Bot 410 apply as either biological or physical science.

[5]Students wishing to qualify for a State teacher's certificate should elect 12 term hours in prescribed Education courses in the junior year and at least 11 term hours in the senior year.

Sophomore Year	Term hours 1st	2d	3d
[1]General Bacteriology (Bac 204, 205, 206)	3	3	3
[2]Group requirement in Language and Literature or Social Science	3	3	3
General Physics (Ph 201, 202, 203)	4	4	4
Military Science (men)	1	1	1
Advanced Physical Education	1	1	1
Organic Chemistry (Ch 226, 227)	5	5	----
Elementary Physical Chemistry (Ch 340)	----	----	3
[3]Elective	----	----	2
	17	17	17

Upper Division Major Curriculum

Junior Year			
Systematic Bacteriology (Bac 321)	5	----	----
Physiology of Bacteria (Bac 322, 323)	----	5	5
Elementary Physiological Chemistry (Ch 330, 331)	----	2	3
[3]Electives	10	8	7
	15	15	15

Senior Year			
Bacteriological Technique (Bac 431)	3	----	----
Bacteriological Problems (Bac 432, 433)	----	5	5
Seminar in Current Topics (Bac 407)	1	1	1
[3]Electives	11	9	9
	15	15	15

BOTANY

Suggested Lower Division Curriculum

Freshman Year			
[2]Group requirement in Language and Literature or Social Science	3	3	3
General Botany (Bot 201, 202, 203)	3	3	3
English Composition (Eng 111, 112, 113)	3	3	3
Military Science (men)	1	1	1
[4]Physical Education	1	1	1
[5]Elementary General Chemistry (Ch 201, 202, 203)	3	3	3
[3]Electives	3	3	3
	17	17	17

Sophomore Year			
[2]Group requirement in Social Science or Language and Literature	3	3	3
The Lower Plants (Bot 301)	4	----	----
The Higher Plants (Bot 302)	----	4	----
Systematic Botany (Bot 303)	----	----	4
General Zoology (Z 201, 202, 203)	3	3	3
Military Science (men)	1	1	1
Advanced Physical Education	1	1	1
[6]Unified Mathematics (Mth 101, 102, 103)	4	4	4
	16	16	16

[1]Or Bac 204, 332, 333.

[2]For State teacher's certificate Psy 201, 202, 203 should be elected in sophomore year as it is prerequisite to upper division courses in Education. Psy 201, 202, 203 meets the Social Science group requirement.

[3]Students expecting to meet the language requirements for a B.A. degree may elect two years of German or French. Students wishing to qualify for a State teacher's certificate should elect 12 term hours in prescribed Education courses in the junior year and at least 11 term hours in the senior year.

[4]General Hygiene, 2 term hours, is taken one term in place of Physical Education.

[5]Students interested in physiological and chemical aspects of plant life should take Ch 204, 205, 206 and elect Ch 221, 251, and 340 or their equivalent as early as convenient.

[6]May be postponed to junior year in favor of second-year German or French or Chemistry.

Upper Division Major Curriculum

Junior Year

	Term hours 1st	2d	3d
Principles of Plant Pathology (Bot 351)	4	---	---
Principles of Plant Ecology (Bot 341)	---	4	---
Principles of Plant Physiology (Bot 331)	---	---	4
General Physics (Ph 201, 202, 203)	4	4	4
[1]Electives	8	8	8
	16	16	16

Senior Year

Microtechnique (Bot 472)	---	3	---
Seminar in Current Topics (Bot 407)	1	1	1
Geology (G 201, 202, 203)	3	3	3
[1]Electives	11	8	11
	15	15	15

CHEMISTRY

Suggested Lower Division Curriculum

Freshman Year

[2]Group requirement in Language and Literature or Social Science	3	3	3
General Chemistry (Ch 204, 205, 206)	5	5	5
English Composition (Eng 111, 112, 113)	3	3	3
Military Science (men)	1	1	1
[3]Physical Education	1	1	1
Unified Mathematics (Mth 101, 102, 103)	4	4	4
	17	17	17

Sophomore Year

Qualitative Analysis (Ch 231)	5	---	---
Quantitative Analysis (Ch 232, 233)	---	5	5
[4]Group requirement in Language and Literature or Social Science	3	3	3
General Physics (Ph 201, 202, 203)	4	4	4
Military Science (men)	1	1	1
Advanced Physical Education	1	1	1
Differential and Integral Calculus (Mth 201, 202, 203)	4	4	4
	18	18	18

Upper Division Major Curriculum

Junior Year

[5]Organic Chemistry (Ch 430, 431, 432)	4	4	4
[5]Physical Chemistry (Ch 440, 441, 442)	4	4	4
[6]Electives	8	8	8
	16	16	16

Senior Year

[1]Electives	13	13	13

ENTOMOLOGY

Suggested Lower Division Curriculum

Freshman Year

[2]Group requirement in Language and Literature or Social Science	3	3	3
General Zoology (Z 201, 202, 203)	3	3	3
English Composition (Eng 111, 112, 113)	3	3	3
Military Science (men)	1	1	1
[3]Physical Education	1	1	1
[6]Elementary General Chemistry (Ch 201, 202, 203)	3	3	3
[2]Electives	3	3	3
	17	17	17

[1]Students wishing to qualify for a State teacher's certificate should elect 12 term hours in prescribed Education courses in the junior year and at least 11 term hours in the senior year. Botany majors should elect work in bacteriology and entomology and, if possible, advanced work in the botanical field of chief interest. Hrt 311 is advised for second term of junior or senior year.

[2]Students expecting to meet the language requirements for a B.A. degree or to obtain a reading knowledge of German or French in preparation for graduate work may elect a language in the freshman and sophomore years. If two years of German or French are elected in the freshman and sophomore years, the completion of the group requirement in either Language and Literature or Social Science may be postponed until the junior year.

[3]General Hygiene, 2 term hours, is taken one term in place of Physical Education.

[4]For State teacher's certificate Psy 201, 202, 203 should be elected in sophomore year as it is prerequisite to upper division courses in Education. Psy 201, 202, 203 meets the Social Science group requirement.

[5]Both of these sequences need not be taken in the junior year.

[6]Students interested in physiological or chemical aspects of applied entomology should elect more chemistry later. A course in General Physics also is advised.

Sophomore Year	Term hours 1st	2d	3d
General Entomology (Ent 201, 202, 203)	3	3	3
General Botany (Bot 201, 202, 203)	3	3	3
Military Science (men)	1	1	1
Advanced Physical Education	1	1	1
[1]Electives or Group Requirement	9	9	9
	17	17	17

UPPER DIVISION MAJOR CURRICULUM

Junior Year			
Advanced Entomology (Ent 471, 472, 473)	3	3	3
Insect Taxonomy (Ent 451, 452, 453)	3	3	3
Entomological Nomenclature and Literature (Ent 352)	---	3	---
Historical Entomology (Ent 353)	3	---	---
Principles of Plant Pathology (Bot 351)	4	---	---
Elementary Bacteriology (Bac 201)	---	3	---
[2, 3]Electives	2	3	9
	15	15	15

Senior Year			
Entomological Field Work (Ent 311, 312, 313)	2	2	2
Seminar in Current Topics (Ent 407)	1	1	1
[2, 3]Electives	12	12	12
	15	15	15

GEOLOGY

SUGGESTED LOWER DIVISION CURRICULUM

Freshman Year			
[4]Group requirement in Language and Literature or Social Science	3	3	3
Unified Mathematics (Mth 101, 102, 103)	4	4	4
English Composition (Eng 111, 112, 113)	3	3	3
Military Science (men)	1	1	1
[5]Physical Education	1	1	1
Elementary General Chemistry (Ch 201, 202, 203) *or* General Chemistry (Ch 204, 205, 206)	3–5	3–5	3–5
	15–17	15–17	15–17

Sophomore Year			
Geology (G 201, 202, 203)	3	3	3
Geology Laboratory (G 204, 205, 206)	1	1	1
[1]Group requirement in Language and Lierature or Social Science	3	3	3
Military Science (men)	1	1	1
Physics or Zoology	4	4	4
Advanced Physical Education	1	1	1
[1]Electives	3–4	3–4	3–4
	16	16	16

UPPER DIVISION MAJOR CURRICULUM

Junior Year			
Methods for the Determination of Materials (G 312, 313, 314)	4	4	4
[6]Structural Geology (G 321) *or* Physiography (G 322)	---	4	*or* 4
Stratigraphy (G 323)	4	---	---
[7]Invertebrate Paleontology (G 340, 341)	4	4	---
Paleobotany (Bot 410)	---	---	4
[2]Electives	4	4–8	4–8
	16	16	16

[1]For State teacher's certificate Psy 201, 202, 203 should be elected in sophomore year as it is prerequisite to upper division courses in Education. Psy 201, 202, 203 meets the Social Science group requirement.

[2]Students wishing to qualify for a State teacher's certificate should elect 12 term hours in prescribed Education courses in the junior year and at least 11 term hours in the senior year. The choice of electives in the junior and senior years is governed by the student's objective.

[3]Students interested in the statistical phases of applied entomology should elect Unified Mathematics and Statistical Methods. Prospective professional entomologists should elect Ch 221, 251, and 340 or their equivalent as early as convenient. Entomology majors should also elect courses in Geology.

[4]Students expecting to meet the language requirements for a B.A. degree may elect German or French.

[5]General Hygiene, 2 term hours, is taken one term in place of Physical Education.

[6]This course also serves as one of a sequence of elective junior courses of general interest to students expecting to teach or those majoring in General Science. This series is G 322, 350, 352.

[7]This is a technical course; the student having a general interest in paleontology would normally elect the sequence G 330, 331, 332.

Senior Year	Term hours 1st	2d	3d
Earth Materials (G 412, 413, 414)	4	4	4
[1]Electives	12	12	12
	16	16	16

MATHEMATICS

Suggested Lower Division Curriculum

Freshman Year			
[2]Group requirement in Language and Literature or Social Science	3	3	3
Unified Mathematics (Mth 101, 102, 103)	4	4	4
English Composition (Eng 111, 112, 113)	3	3	3
Military Science (men)	1	1	1
[3]Physical Education	1	1	1
[2]Electives	4	4	4
	16	16	16

Sophomore Year			
Differential and Integral Calculus (Mth 201, 202, 203)	4	4	4
[4]Group requirement in Language and Literature or Social Science	3	3	3
Physical or Biological Science	3–4	3–4	3–4
Military Science (men)	1	1	1
Advanced Physical Education	1	1	1
[4]Electives	3–4	3–4	3–4
	15–17	15–17	15–17

Upper Division Major Curriculum

Junior Year			
Differential Equations (Mth 421, 422) and other upper division mathematics courses	6	6	6
Physical or Biological Science	3–4	3–4	3–4
[1]Electives	7	7	7
	16–17	16–17	16–17

Senior Year			
Upper Division Mathematics	3	3	3
[5]Electives	13	13	13
	16	16	16

PHYSICS

Suggested Lower Division Curriculum

Freshman Year			
[2]Group requirement in Language and Literature or Social Science	3	3	3
Unified Mathematics (Mth 101, 102, 103)	4	4	4
English Composition (Eng 111, 112, 113)	3	3	3
Military Science (men)	1	1	1
[3]Physical Education	1	1	1
General Chemistry (Ch 204, 205, 206)	5	5	5
	17	17	17

[1]Students wishing to qualify for a State teacher's certificate should elect 12 term hours in prescribed Education courses in the junior year and at least 11 term hours in the senior year.

[2]Students expecting to meet the language requirements for a B.A. degree must elect two years of German or French.

[3]General Hygiene, 2 term hours, is taken one term in place of Physical Education.

[4]For State teacher's certificate Psy 201, 202, 203 should be elected in sophomore year as it is prerequisite to upper division courses in Education. Psy 201, 202, 203 meets the Social Science group requirement.

[5]Includes supporting science courses for students planning graduate work in Mathematics.

Sophomore Year	Term hours 1st	2d	3d
General Physics (Ph 201, 202, 203)	4	4	4
[1]Group requirement in Language and Literature or Social Science	3	3	3
Military Science (men)	1	1	1
Advanced Physical Education	1	1	1
Differential and Integral Calculus (Mth 201, 202, 203)	4	4	4
[1]Electives	3–4	3–4	3–4
	16–17	16–17	16–17

UPPER DIVISION MAJOR CURRICULUM

Junior Year

Physical Measurements (Ph 311, 312, 313)	3	3	3
Classical Theories (Ph 411, 412, 413)	3	3	3
[2]Electives	9	9	9
	15	15	15

Senior Year

Introduction to Modern Physics (Ph 471, 472, 473)	3	3	3
Modern Physics Laboratory (Ph 474, 475, 476)	1	1	1
[2]Electives	11	11	11
	15	15	15

ZOOLOGY

SUGGESTED LOWER DIVISION CURRICULUM

Freshman Year

[3]Group requirement in Language and Literature or Social Science	3	3	3
General Zoology (Z 201, 202, 203)	3	3	3
English Composition (Eng 111, 112, 113)	3	3	3
Military Science (men)	1	1	1
[4]Physical Education	1	1	1
[5]Elementary General Chemistry (Ch 201, 202, 203)	3	3	3
[3]Electives	3	3	3
	17	17	17

Sophomore Year

[1]Group requirement in Social Science or Language and Literature	3	3	3
Vertebrate Zoology (Z 204, 205, 206)	4	4	4
Unified Mathematics (Mth 101, 102, 103)	4	4	4
Military Science (men)	1	1	1
Advanced Physical Education	1	1	1
[1, 6]Electives	4	4	4
	17	17	17

UPPER DIVISION MAJOR CURRICULUM

Junior Year

Genetics (Z 314)	3	---	---
Evolution and Eugenics (Z 315)	---	3	---
Histology (Z 375)	3	---	---
Microtechnique (Z 376)	---	3	---
Vertebrate Embryology (Z 377)	---	---	3
General Physics (Ph 201, 202, 203)	4	4	4
[7]Electives	5	5	8
	15	15	15

[1]For State teacher's certificate Psy 201, 202, 203 should be elected in sophomore year as it is prerequisite to upper division courses in Education. Psy 201, 202, 203 meets the Social Science group requirement.

[2]Students wishing to qualify for a State teacher's certificate should elect 12 term hours in prescribed Education courses in the junior year and at least 11 term hours in the senior year.

[3]Students expecting to meet the language requirements for a B.A. degree must elect two years of German or French.

[4]General Hygiene, 2 term hours, is taken one term in place of Physical Education.

[5]Students interested in becoming professional zoologists take Ch 204, 205, 206.

[6]Ch 226, 227, Ch 232, and Bot 101. 102, 103 are recommended for those wishing a physiological major.

[7]Ent 351 and G 340, 341 and suggested electives outside the department.

Senior Year	Term hours 1st	2d	3d
General Physiology (Z 411, 412)	---	4	4
Invertebrate Zoology (Z 431, 432)	4	4	---
[1]Electives	11	7	11
	15	15	15

Preparatory Medical and Nursing Education Curricula

PREPARATORY MEDICAL CURRICULUM

Suggested Lower Division Curriculum

Freshman Year	Term hours 1st	2d	3d
General Zoology (Z 201, 202, 203)	3	3	3
English Composition (Eng 111, 112, 113)	3	3	3
Military Science (men)	1	1	1
[2]Physical Education	1	1	1
General Chemistry (Ch 204, 205, 206)	5	5	5
[3]Electives	4	4	4
	17	17	17
Sophomore Year			
Vertebrate Zoology (Z 204, 205, 206)	4	4	4
Organic Chemistry (Ch 226, 227)	5	5	---
Quantitative Analysis (Ch 232)	---	---	5
German or French	4	4	4
Military Science (men)	1	1	1
Advanced Physical Education	1	1	1
[3]Electives	1	1	1
	18	18	18

Upper Division Curriculum

(School of Science and Medical School)

Junior Year			
General Physics (Ph 201, 202, 203)	4	4	4
German or French	4	4	4
[3]Electives	9	9	9
	17	17	17

SCIENCE MAJOR AT THE STATE COLLEGE

B.A., B.S. Degrees

The student preparing for entrance to the Medical School should complete by the end of his junior year a major in some field of science and all requirements for a degree except the fourth year of undergraduate residence. The first year at the Medical School may be counted in lieu of the fourth year of undergraduate residence.

SCIENCE MAJOR AT THE MEDICAL SCHOOL

B.A., B.S. Degrees

A student who, during his three years in the Preparatory Medical Curriculum at the State College, meets all the institutional requirements for graduation except completion of a major and the fourth year of residence may meet the requirements for a major in science in the first year at the Medical School. The following courses in basic sciences which constitute the work of the first year in the University of Oregon Medical School are of upper division character and in conjunction with the preceding science work prescribed

[1]Students wishing to qualify for a State teacher's certificate should elect 12 term hours in prescribed Education courses in the junior year and at least 11 term hours in the senior year. The choice of electives in the junior and senior years is governed by the student's objective.

[2]General Hygiene, 2 term hours, is taken one term in place of Physical Education.

[3]Students should confer with their premedical adviser in the selection of all electives. These electives should include the non-science group requirements in Language and Literature and in Social Science in order to satisfy the requirements for a Junior Certificate.

in the above curriculum will be accepted as the full equivalent of a major in General Science or Zoology. A student counting these courses as his major receives his degree through the School of Science at the State College.

	Term hours
Anatomy	18
Histology	6
Embryology	4
Bacteriology	8
Biochemistry	11
Physiology	5
	52

PREPARATORY NURSING CURRICULUM

SUGGESTED LOWER DIVISION CURRICULUM

Freshman Year	Term hours 1st	2d	3d
Group requirement in Language and Literature or Social Science	3	3	3
Backgrounds of Nursing (Nur 211, 212, 213)	3	3	3
English Composition (Eng 111, 112, 113)	3	3	3
Elementary General Chemistry (Ch 201,202,203)	3	3	3
[1]Physical Education	1	1	1
Foreign language or approved elective	4	4	4
	17	17	17
Sophomore Year			
Group requirement in Social Science or Language and Literature	3	3	3
General Zoology (Z 201, 202, 203)	3	3	3
Physical Education	1	1	1
Organic Chemistry (Ch 221)	5	—	—
Elementary Biochemistry (Ch 251)	—	5	—
Foreign language or approved elective	4	4	4
Elective	—	—	5
	16	16	16

UPPER DIVISION CURRICULUM

Third, Fourth, and Fifth Years

These years are taken in the Department of Nursing Education, University of Oregon Medical School, and in one of the affiliated schools of nursing in Portland. See Medical School Catalog.

General Science

CERTAIN phases of the instructional work of the School of Science are of general character, being broader in scope and objectives than any of the departments. The survey courses for freshmen and sophomores aim to give the student a comprehensive view of science as a division of knowledge. The general science major provides opportunity for students to pursue a program of study in science broader than that of a single department.

General Science Major. A major undergraduate administrative division of general science has been organized to meet the needs of students whose scholarly interests are predominantly scientific, but whose needs are not met by a major curriculum in one of the special sciences. These students include, for example, those desiring a general education featuring the scientific field; the prospective teacher of high school science, who must be adequately prepared in a considerable range of high school subjects;

[1]Students in this curriculum postpone hygiene until their junior year, which is taken at Medical School and hence do not receive their Junior Certificate till after completion of the hygiene course.

or the prospective scholarly specialist in a border-line field between two or more sciences.

To meet the needs of such students a rather flexible curriculum has been authorized, the courses being selected from the offerings of the various departments. A committee representing the larger general fields of science administers the general science curriculum and is responsible for the advising of students majoring in this division. The members of the committee for the academic year 1933-34 are: Professors W. P. Boynton (Physical Science), Chairman, C. L. Johnson (Mathematics), C. E. Owens (Biological Science). The curriculum in General Science is printed on page 114.

Science Surveys. Science courses are provided which cover the fundamental fields of science rather than the content usually comprised in the specialized science departments. These courses are non-technical and are designed for the student interested in science more as a cultural subject than for any other specific purpose. The courses may serve as satisfaction of a Lower Division Science group requirement or as part satisfaction of educational norms but they are not usually considered as prerequisites to further work in Science or in the technical schools.

NOTE: *Students who already have earned 9 term hours or more in one of the biological sciences are not permitted to apply toward graduation credit earned in BiS 101, 102, 103 except with the approval of the Dean of the School of Science. The same limitation exists regarding PhS 101, 102, 103.*

SCIENCE SURVEY COURSES

BiS 101, 102, 103. **Biological Science Survey.** Three terms, 4 hours each term.

A non-technical year-sequence presenting the fundamental principles of biology as they apply to both plants and animals. Not designed as foundational or introductory to subsequent special work in bacteriology, botany, entomology, or zoology. Rather it is planned for general students and those majoring in other fields and is designed to acquaint them with the general phenomena of life as concretely illustrated in fields of biology. Three lectures; 1 demonstration-quiz period. Professor Atwood.

PhS 101, 102, 103. **Physical Science Survey.** Three terms, 4 hours each term.

A general introductory course in the field of the physical sciences, embracing cosmic relations, principles of physics and chemistry, geologic processes and man's reaction to them. Special attention is given to the development and application of the scientific method. Not a foundational course in the physical sciences, but is designed for students majoring in other fields who wish a broad view of the principles of physics, chemistry, and geology. Three lectures; 1 quiz period. Assistant Professor Wilkinson.

Bacteriology

INSTRUCTION in bacteriology is planned to afford a foundation for the applied fields and a thorough training in bacteriological subjects. Such training is essential to the appreciation of the importance these subjects occupy in our civilization and serves as a foundation for advanced

work leading to the graduate degrees. Since agriculture and allied fields are of vital importance to the State of Oregon, a very valuable and practical field of research is open to the student seeking advanced work of this nature in bacteriology.

DESCRIPTION OF COURSES

LOWER DIVISION COURSES

Bac 201, 202, 203. **Elementary Bacteriology.** Three terms, 3 hours each term.

The fundamental principles of the bacteriology of food and water supplies; sanitation and hygiene; infectious disease; sewage disposal, etc. Designed to meet the needs of students who have had no training in chemistry but who desire a general knowledge of bacteriology. Two lectures; 1 two-hour demonstration period.

Bac 204. **General Bacteriology.** First or second term, 3 hours.

A series of lectures, recitations, and laboratory experiments to familiarize students with the fundamental principles of bacteriology. Prerequisite: one year of chemistry. Two lectures; 2 two-hour laboratory periods.

Bac 205. **General Bacteriology.** Second or third term, 3 hours.

A continuation of Bac 204. A course adapted to the bacteriology of food preservation, principles of sanitation, bacteriological studies of water, milk, and foods of all kinds; common infectious diseases; disinfection; germicides; and preservatives. Prerequisite: Bac 204. Two lectures; 2 two-hour laboratory periods.

Bac 206. **General Bacteriology.** Third term, 3 hours.

A continuation of Bac 205.

UPPER DIVISION COURSES

Bac 321. **Systematic Bacteriology.** First term, 5 hours.

History of bacteriological classifications; the *International Rules of Nomenclature* as applied to bacteriology; development of classifications of bacteria based on relationships. Prerequisite: Bac 206. Three lectures; 2 two-hour laboratory periods.

Bac 322, 323. **Physiology of Bacteria.** Second and third terms, 3 to 5 hours each term.

Characteristics of bacterial environments; influence of physical and chemical environments on changes produced by microorganisms; enzymes and fermentations. Prerequisite: Bac 206. Two lectures; 3 two-hour laboratory periods.

Bac 332. **Pathogenic Bacteriology.** Second term, 3 hours.

A course confined strictly to the micro-organisms associated with disease in man. Prerequisite: Bac 204. Two lectures; 2 two-hour laboratory periods.

Bac 333. **Immunity and Serum Therapy.** Third term, 3 hours.

A study of the theories of immunity and their application to serum therapy; preparation of toxins, anti-toxins, vaccines, etc.; study of

normal and pathological blood. Prerequisite: Bac 204 or 332. Two lectures; 2 two-hour laboratory periods.

Bac 401. **Research.** Terms and hours to be arranged.

Bac 403. **Thesis.** Terms and hours to be arranged.

Bac 405. **Advanced Studies.** Terms and hours to be arranged.

Bac 407. **Seminar in Current Topics.** One hour each term.

Bac 411. **Dairy Bacteriology.** First term, 3 hours.

Application of bacteriology to dairy practice; physiological activities of bacteria underlying bacterial analysis of dairy products; dairy sanitation; bacteriology of diseases of dairy cattle. Prerequisite: Bac 204. Two lectures: 2 two-hour laboratory periods.

Bac 412. **Dairy Bacteriology.** Second term, 3 hours.

A continuation of Bac 411. A more thorough study of specific problems in dairy bacteriology and practice in special technique. Prerequisite: Bac 204, 411. One lecture; 2 two-hour laboratory periods.

Bac 413. **Agricultural Bacteriology.** Third term, 3 hours.

(Advanced course.) A course in bacteriology for students in Agriculture. Application of bacterial activities to farm practices and to the farm home; rural sanitation, hygiene, control of infectious diseases, fermentation, food preservation, etc. Prerequisite: Bac 204, Ch 251. One lecture; 2 two-hour laboratory periods.

Bac 421. **Soil Bacteriology.** First term, 4 hours.

A study of micro-organisms of the soil and their relation to soil fertility; biochemistry of the decomposition of humus; nitrogen-fixation; ammonification, etc. Prerequisite: Bac 204 or Ch 330. Two lectures; 3 two-hour laboratory periods.

Bac 422. **Soil Bacteriology.** Second term, 3 hours.

A continuation of Bac 421. A review of literature on soil bacteriology. Prerequisite: Bac 421. One lecture; 2 two-hour laboratory periods.

Bac 431. **Bacteriological Technique.** First term, 3 hours.

An intensive study of the fundamental principles underlying methods used in the study of bacteria. A detailed study of the *Manual of Methods for Pure Culture Study of Bacteria.* Prerequisite: Bac 206. Two lectures; 2 two-hour laboratory periods.

Bac 432, 433. **Bacteriological Problems.** Second and third terms, 5 hours each term.

For students qualified to study intensively some of the problems concerned with systematic bacteriology and to carry on research studies concerned with the principles underlying some of the physiological activities of bacteria. Prerequisite: Bac 321, 322, 323.

Bac 441. **Sanitary Bacteriology.** Third term, 3 hours.

Lectures, recitations, and laboratory experiments to familiarize the student with the principles of bacteriology as applied to problems

of community and municipal sanitation. Prerequisite: Bac 205. Two lectures; 2 two-hour laboratory periods.

Bac 442. **Microscopy of Waters.** Third term, 3 hours.
Planned to give a thorough knowledge of the micro-organisms found in surface waters. Study of the treatment of water by chemicals, aeration, etc. Prerequisite: Bac 441. One lecture; 2 two-hour laboratory periods.

GRADUATE COURSES

Bac 501. **Graduate Research.** Term and hours to be arranged.

Bac 503. **Graduate Thesis.** Terms and hours to be arranged.

Bac 505. **Graduate Studies.** Terms and hours to be arranged.

Bac 507. **Graduate Seminar in Current Topics.** Terms and hours to be arranged.

Botany

THE courses in botany provide comprehensive basic and advanced training in the various branches of plant science. The department offers carefully selected undergraduate foundation courses for those interested in botany either as a cultural or as a professional field. It also purposes in these courses to meet the needs of those preparing (1) for high school teaching; (2) for advanced study and research in such fields as biochemistry, paleontology, horticulture, agronomy, soil science, and forestry; and (3) for technical positions in which a knowledge of botany is essential, such as in agricultural extension work, plant disease control work, plant quarantine inspection, grazing assistant work, seed testing, food and drug analysis, etc.

The department also provides graduate training leading to advanced degrees for those preparing for botanical teaching and research in colleges and universities or for professional careers, such as plant pathologists, physiologists, ecologists, taxonomists, etc. in experiment stations, in the Federal Department of Agriculture or in other research institutions.

The herbarium collections are under the care of a curator. They comprise between thirty and forty thousand classified specimen sheets of higher plants and several thousand packets of parasitic fungi. The plant collections at the University are also accessible to advanced students at the College.

Excellent greenhouse facilities are available at the College for botanical instruction and research.

An extensive and diversified research program relating to plant disease is conducted under the Botany department by a group of state and Federal investigators. This involves the use of modern equipment and technique for laboratory, greenhouse, and field. Students are therefore provided with exceptional opportunities for training in plant pathology and often for part-time employment under able scientists.

Botany students also have a special advantage at this instution since they may elect minor work in the fields of forestry, agriculture, etc. which provide the greatest opportunities for the useful application of plant science.

DESCRIPTION OF COURSES

LOWER DIVISION COURSES

Bot 201, 202, 203. General Botany. Three terms, 3 hours each term.
An introductory study of plant life. First term, structure and functions of higher plants. Second term, chief groups of plants. Third term, principles of plant reproduction and heredity with practice in plant identification. Prerequisite to further work in botany. Three two-hour class periods. Staff.

UPPER DIVISION COURSES

Bot 301. The Lower Plants. First term, 4 hours.
Typical structure and life-histories of the algae, fungi, hepatics, and mosses. Two lectures; 3 two-hour laboratory periods. Associate Professor Sanborn.

Bot 302. The Higher Plants. Second term, 4 hours.
Typical structure and life-histories of the ferns, fern allies, gymnosperms, and flowering plants. Two lectures; 3 two-hour laboratory periods. Associate Professor Sanborn.

Bot 303. Systematic Botany. Third term, 4 hours.
Principles of plant classification; a study of common plant families; collection and identification of Oregon higher plants. Two lectures; 3 two-hour laboratory periods. Associate Professor Gilkey.

Bot 304. Range and Pasture Botany. First term, 3 hours.
Grasses and other forage plants of range and pasture; stock poisoning plants; practice in identification. Principles of range and pasture management for maintaining ranges and pastures. Methods of preventing stock poisoning. Two lectures; 2 two-hour laboratory periods. Associate Professor Lawrence.

Bot 305. Forest Pathology. Second term, 3 hours.
Elementary study of parasitic and saprophytic fungi which attack forest trees and destroy structural timber; their effects on wood; preventive measures. One lecture; 2 two-hour laboratory periods. Professor Owens.

Bot 331. Principles of Plant Physiology. Third term, 4 hours.
Introductory study of the physiology of living plants with the aid of laboratory and greenhouse experiments. Prerequisite: at least one year of chemistry. Two lectures; 3 two-hour laboratory periods. Professor Atwood.

Bot 341. Principles of Plant Ecology. Second term, 4 hours.
Principles governing the interrelations of plants and environment; influence of living agencies and of light, heat, and other atmospheric and soil factors on the native vegetation and cultivated crops. Of particular interest to students in Forestry and Agriculture. Not open to freshmen or sophomores. Two lectures; 2 two-hour laboratory periods. Associate Professor Lawrence.

Bot 351. **Principles of Plant Pathology.** First term, 4 hours.
Causes, symptoms, effects, methods of spread and principles of control of plant diseases with laboratory examination of typical specimens. Two recitations; 3 two-hour laboratory periods. Professor Owens.

Bot 401. **Research.** Term and hours to be arranged.

Bot 403. **Thesis.** Term and hours to be arranged.

Bot 405. **Advanced Studies.** Term and hours to be arranged.

Bot 407. **Seminar in Current Topics.** Any term, 1 hour.

Bot 410. **Paleobotany.** Third term, 4 hours.
A study of plants that are important from a paleobotanical standpoint, followed by a study of floras from the Devoian to the Pleistocene, with special reference to the Tertiary floras of Oregon. Two lectures; 2 three-hour laboratory periods. Associate Professor Sanborn.

Bot 411, 412, 413. **Comparative Morphology.** Three terms, 3 hours each term.
The comparative structure and life-history of the chief plant groups with evolutionary trends and the basic principles of phylogeny and classification. First term, Thallophytes; second term, Bryophytes and Pteridophytes; third term, Spermatophytes, with evolution of stele and strobilus from Pteridophytes. Prerequisite: Bot 301, 302, or equivalent. One lecture; 2 three-hour laboratory periods. Offered alternate years. Associate Professors Lawrence and Sanborn.

Bot 421, 422, 423. **Advanced Systematic Botany.** Three terms, 3 hours each term.
Studies of special groups of higher plants. Prerequisite: Bot 303. One lecture; 2 three-hour laboratory periods. Offered alternate years. Associate Professor Gilkey.

Bot 431, 432, 433. **Advanced Plant Physiology.** Three terms, 3 hours each term.
Studies of the physiological processes and relations of plants with reviews of literature. Prerequisite: Bot 331, organic chemistry. One lecture; 2 three-hour laboratory periods. Offered alternate years. Professor Atwood.

Bot 441, 442, 443. **Advanced Plant Ecology.** Three terms, 3 hours each term.
First term, geographic distribution of plants with reference to the world floras and formations. Second term, the adjustments between plant structures and the environmental complex. Third term, methods employed in ecological work with practice in the field, with reference to agricultural and forestry ecology problems; the structure of the plant community including plant succession. Each term may be taken separately. Prerequisite: Bot 341. Two lectures; 1 three-hour laboratory period. Offered alternate years. Not offered 1934-35. Associate Professor Lawrence.

Bot 451. **Plant Pathological Technique.** First term, 3 hours.
The methods used in the isolation, culture, inoculation, and study

of organisms causing plant diseases. Prerequisite: Bot 351. One lecture; 2 three-hour laboratory periods. Offered alternate years. Not offered 1934-35. Professor Owens.

Bot 452. Field and Truck Crop Diseases. Second term, 3 hours.
The chief diseases of field crops and vegetables and the principles of control. Especially for students in farm crops and vegetable crops. Prerequisite: Bot 351. Three two-hour laboratory periods. Offered alternate years. Not offered 1934-35. Professor Owens.

Bot 453. Fruit Diseases. Third term, 3 hours.
The chief diseases of fruits and their control, especially for students in horticulture. Prerequisite: Bot 351. Three two-hour periods. Offered alternate years. Not offered 1934-35. Professor Owens.

Bot 461, 462, 463. Introduction to Mycology. Three terms, 3 hours each term.
First term, mushrooms, smuts, rusts, and other Basidiomycetes. Second term, Ascomycetes and imperfect fungi. Third term, Phycomycetes. Prerequisite: Bot 301. One lecture; 2 three-hour laboratory periods. Offered alternate years. Not offered 1934-35.

Bot 471. Plant Anatomy. First term, 3 hours.
Microscopic anatomy and development of plant tissues. One lecture; 2 three-hour laboratory periods. Offered alternate years. Professor Owens.

Bot 472. Microtechnique. Second term, 3 hours.
Principles and practice in fixing, embedding, sectioning, staining, and mounting plant tissues for permanent study. One lecture; 2 three-hour laboratory periods. Offered alternate years. Professor Owens.

Bot 473. Plant Cytology. Third term, 3 hours.
Structure of the plant cell with special attention to cell division and chromosome behavior. Of special interest in plant genetics. Two lectures; 2 two-hour laboratory periods. Offered alternate years. Professor Owens.

GRADUATE COURSES

Bot 501. Graduate Research. Terms and hours to be arranged.

Bot 503. Graduate Thesis. Terms and hours to be arranged.

Bot 505. Graduate Studies. Terms and hours to be arranged.

Bot 507. Graduate Seminar in Current Topics. Terms and hours to be arranged.

Chemistry

THE Department of Chemistry aims to prepare its major students for (1) governmental service; (2) teaching positions in colleges, universities, junior colleges, and secondary schools; (3) positions as chemists and technical experts in commercial laboratories of all sorts, having

to do with all types of manufactured articles; (4) positions as chemists in various food industries, dairying, experiment stations.

For the better positions in any of these fields the Ph.D. degree is almost universally necessary for younger men. Research or original investigation plays a very important part in these better positions whether the work is that of governmental chemist, university professor, or industrial chemist. A strong fundamental training in all the main branches of chemistry is therefore essential. Specialization can come only after a very substantial amount of fundamental work is covered.

Positions for which the full training of the doctorate degree may not be required include junior chemists in the government service, teachers in secondary schools, holders of minor positions in colleges, analysts, and control chemists in various branches of industry, or experiment stations. Even in a minor position an advanced degree is highly advantageous.

DESCRIPTION OF COURSES

LOWER DIVISION COURSES

Ch 201, 202, 203. **Elementary General Chemistry.** Three terms, 3 hours each term.

A short introductory course designed to fit the needs of students intending to major in Home Economics, Agriculture, Physical Education, etc. One lecture; 1 recitation; 1 three-hour laboratory period.

Ch 204, 205, 206. **General Chemistry.** Three terms, 5 hours each term.

A thorough course intended for students whose major interest is in chemistry or allied fields. In the third term the laboratory work consists mainly of qualitative analysis. Two lectures; 1 recitation; 2 three-hour laboratory periods.

Ch 208, 209. **General Chemistry.** Second and third terms, 5 hours each term.

A two-term course designed to cover the same material as Ch 201, 202, 203 for students starting at the beginning of the winter term. Two lectures; 1 recitation; 2 three-hour laboratory periods.

Ch 221. **Organic Chemistry.** First term, 5 hours.

A study of the natural occurrence, laboratory methods of preparation, characteristic reactions, chemical and physical properties of the more common compounds of the aliphatic series. Prerequisite: Ch 203. Two lectures; 1 recitation; 2 three-hour laboratory periods.

Ch 226, 227. **Organic Chemistry.** First and second terms, 5 hours each term.

A substantial two-term sequence in the chemistry of the carbon compounds; the aliphatics, aromatics, and derivatives. Prerequisite: Ch 206. Two lectures; 1 recitation; 2 three-hour laboratory periods.

Ch 231. **Qualitative Analysis.** First term, 5 hours.

Classification, separation, identification of the common ions and cations. Prerequisite: Ch 206 or equivalent.

Ch 232. **Quantitative Analysis.** Second or third term, 5 hours.

Elementary quantitative analysis. Two lectures; 3 three-hour laboratory periods.

Ch 233. **Qualitative Analysis.** Third term, 5 hours.

Continuation of Ch 232.

Ch 251. **Elementary Biochemistry.** Second term, 5 hours.

A study of proteins, carbohydrates, fats, and other compounds having biochemical significance; qualitative and quantitative analyses of materials containing them; a study of the chemical changes which they undergo in processes of digestion and metabolism. The subject-matter varies somewhat with group needs and interests of students enrolled. Prerequisite: Ch 221 or 226. Two lectures; 1 recitation; 2 three-hour laboratory periods.

UPPER DIVISION COURSES

Ch 321, 322, 323. **Metallurgical Chemistry.** Three terms, 3 hours each term.

Analysis of limestone, iron in ores; phosphorus in iron and steel; chromium in steel, alloys and ores; analysis of aluminum and its alloys; copper and lead in ores; arsenic and antimony in ores; coal and coke; gases; water analysis, chemical examinations; determination of silica, iron, aluminum, lime, magnesia, alkalies, sulfates; total hardness, permanent hardness; free and albumenoid ammonia, etc. Prerequisite: Ch 232.

Ch 330, 331. **Elementary Physiological Chemistry.** Two hours second term, 3 hours third term.

Designed for students in Home Economics and Pharmacy. Prerequisite: Ch 251 or 227. Two lecture-recitation periods second term; 1 lecture-recitation and 2 three-hour laboratory periods third term.

Ch 340. **Elementary Physical Chemistry.** One term, 3 hours.

A non-mathematical course designed for those who desire a knowledge of the elements of physical chemistry. Discussion of such topics as kinetic theory, atomic structure, molecular weights, classification of elements, solubility, ionization, colloids, hydrogen-ion measurements, and electro-chemistry. Prerequisite: Ch 203 or equivalent.

Ch 351, 352, 353. **Agricultural and Biochemical Analysis in Specialized Fields.** Three terms, 3 hours each term.

Students registering in these courses are supposed to have some special interest, as in fertilizers, insecticides and fungicides, feeding stuffs, creamery products, horticultural products, irrigation and drainage waters. Intensive reading is required in addition to laboratory work on principles involved in manufacturing and utilization. Prerequisite: Ch 232. Three three-hour laboratory periods.

Ch 370. **Glass Blowing.** One term, 1 hour.

Elementary practice in the manipulation of glass. One laboratory period.

Ch 401. **Research.** Term and hours to be arranged.

Ch 403. **Thesis.** Terms and hours to be arranged.

Ch 405. **Advanced Studies.** Term and hours to be arranged.

Ch 407. **Seminar in Current Topics.** One hour each term.

Ch 411, 412, 413. **Advanced Inorganic Chemistry.** Three terms, 2 hours each term.

The chemical elements are first discussed as regards their prac-

tical and theoretical importance. Finally, such topics as radioactivity, the periodic table, and atomic structure are taken up. A minimum of two-years' work in chemistry is prerequisite. Two lectures a week.

Ch 414, 415. **Inorganic Preparations.** Terms and hours to be arranged.
The preparation and purification of typical inorganic compounds.

Ch 418. **History of Chemistry.** One term, 2 hours.
Rise and development of chemical theories and laws. Prerequisite: Ch 206 or equivalent.

Ch 420, 421, 422. **Advanced Analytical Chemistry.** Three terms, 3 hours each term.
This laboratory course acquaints the student with special analytical procedure such as those of electro-analysis, fuel analysis, water, iron and steel, etc.

Ch 423. **Microchemical Analysis.** First term, 3 hours.
Quantitative analysis by micro and semi-micro methods. Prerequisite: Ch 233.

Ch 424. **Optical Methods of Analysis.** Second term, 3 hours.
Basic principles and laboratory practice in the use of optical instruments such as refractometer, polarimeter, polorizing microscope, etc. Prerequisite: Ch 233, Ph 311.

Ch 425. **Chemical Microscopy.** Third term, 3 hours.
Microscopic, qualitative, inorganic analysis. Prerequisite: Ch 231.

Ch 426. **Gas Analysis.** One term, 3 hours.
Complete analysis of natural, artificial and flue gas; the determination of the heating power of gaseous fuels; the analysis of various substances by methods involving the use of different types of gas evolution apparatus. Prerequisite: Ch 233.

Ch 430, 431, 432. **Organic Chemistry.** Three terms, 4 hours each term.
The chemistry of the compounds of carbon. Deals with compounds which are important from the theoretical, technical, and biological standpoints. The first two terms are devoted to aliphatic compounds and the third term to those of the aromatic series. Prerequisite: two years of college chemistry. Three lectures; 1 laboratory period.

Ch 433. **Organic Analysis.** Third term, 5 hours.
Qualitative tests and analysis of organic compounds and mixtures. Prerequisite: Ch 227, 232, 432. Two lectures; 3 three-hour laboratory periods.

Ch 434. **Organic Combustion Analysis.** One term, 3 hours.
Quantitative analysis of organic compounds. Prerequisite: Ch 227, 232, 432.

Ch 435, 436. **Organic Preparations.** Terms and hours to be arranged.
The more important methods of synthesis, such as Grignard Friedel-Craft's, Perkin's reaction, and others are studied. Prerequisite: Ch 227 or Ch 432.

Ch 437, 438. **Organic Chemistry.** First and second terms, 2 hours each term.
A continuation of Ch 430, 431, 432. Emphasis placed upon the methods of synthesis, interpretation or reactions, and structure of organic compounds. Two lectures.

Ch 440, 441, 442. **Physical Chemistry.** Three terms, 4 hours each term.
A study of the more important principles of physical and electrochemistry. The laboratory work includes molecular weight determinations, properties of liquids, conductance of solutions, velocity of reactions, and electrochemical measurements. Two lectures; 2 three-hour laboratory periods.

Ch 443. **Chemical Literature.** First term, 1 hour.
Designed to train the advanced student in the use of the chemical literature and to instruct him in the character of various chemical journals, dictionaries, reference books, and other sources of information pertaining to chemistry and related fields.

Ch 445, 446. **Chemical Therodynamics.** Two terms, 3 hours each term.
Application of the principles of therodynamics to chemical phenomena; heats of reaction, entropy, free energy, chemical equilibrium, activity, etc.

Ch 447. **Electrochemistry.** One term, 3 hours.
A study of theoretical and applied electrochemistry.

Ch 448, 449. **Colloidal Chemistry.** Two terms, 3 hours each term.
A study of the properties and preparation of substances in the colloidal state. Laboratory courses Ch 467 and 468 accompany this course. Three lectures.

Ch 450, 451. **Biochemistry.** First and second terms, 3 to 5 hours each term.
A general course dealing with the chemistry of both plant and animal organisms, their tissue constituents, nutrition and metabolism. Prerequisite: organic chemistry.

Ch 452. **Animal Physiological Chemistry.** Third term, 3 to 5 hours.
Prerequisite: Ch 451.

Ch 453. **Plant Physiological Chemistry.** Third term, 5 hours.
Prerequisite: Ch 451.

Ch 454, 455, 456. **Agricultural Biochemical Methods.** Three terms, hours to be arranged.
Offered as an aid to students planning to enter research in plant or animal industries. Laboratory methods in Ch 454 are general in scope and application; those in Ch 455 and Ch 456 are specific in application to groups of plant and animal compounds and to enzymes that accomplish transformations in living bodies. Text: Morrow's *Biochemical Laboratory Methods.* Prerequisite: suitable preparation in quantitative analysis and organic chemistry.

Ch 460, 461, 462. **Pulp and Paper Chemistry.** Three terms, 3 hours each term.
A study of the chemistry of cellulose and of the fundamental, chemical processes of the pulp and paper industry.

Ch 467, 468. **Colloidal Chemistry Laboratory.** Two terms, 1 hour each term.

GRADUATE COURSES

Ch 501. **Graduate Research.** Terms and hours to be arranged.

Ch 503. **Graduate Thesis.** Terms and hours to be arranged.
Qualified students will have all the facilities of the laboratory at their disposal and will receive the advice and assistance of the department.

Ch 505. **Graduate Studies.** Terms and hours to be arranged.

Ch 507. **Graduate Seminar in Current Topics.** Any term, 1 hour each term.
A reading knowledge of German and French is expected.

Ch 520, 521, 522. **Advanced Analytical Chemistry.** Three terms, hours to be arranged.
Special analytical procedures adapted to those enrolling.

Ch 530, 531, 532. **Advanced Organic Chemistry.** Three terms, 2 hours each term.
The theoretical aspects of the subject are emphasized by discussion of theories of valence, chemical reactivity, free radicals, catalysis, etc., as these are related to particular groups of compounds.

Ch 540, 541, 542. **Advanced Physical Chemistry.** Three terms, 2 hours each term.
Atomic structure from the chemical standpoint; kinetic theory of gases; newer theories of solutions; phase rule and its applications. Offered alternate years. Not offered 1934-35.

Ch 543, 544, 545. **Advanced Physical Chemistry.** Three terms, 2 hours each term.
Solubility; properties of liquids, surface tension, dielectric constant, vapor pressure, and other topics; kinetics of chemical reactions; newer theories of valence; photochemistry. Offered alternate years.

Entomology

ENTOMOLOGY courses are planned to acquaint the student with the proper relationship of entomology to general agriculture and forestry and to train students for commercial honey production, prepare students for State and Federal service in economic entomology, and to meet the needs of students from other departments who desire work in entomology. Three fields of advanced work are offered: applied entomology, bee culture, and forest entomology.

Advanced courses are planned to equip students specializing in entomology with a fundamental ground-work in the science sufficient to prepare them for effective service in applied entomology and to fit them for advanced research study.

The student who intends to engage in research work or college teaching should clearly appreciate the fact that the four-year curriculum does not give him adequate preparation for a career in these fields. Additional study at the graduate level of from one to three years is essential. Certain

types of commercial and inspection work may not require more training than is represented by the bachelor's degree.

DESCRIPTION OF COURSES

LOWER DIVISION COURSES

Ent 201, 202, 203. **General Entomology.** Three terms, 3 hours each term.

Designed as basic instruction for students planning to take a major or a minor in entomology. Foundation work in morphology, taxonomy, general technique, and principles of insect control are included. Two lectures; 1 three-hour laboratory period.

Ent 211. **Principles of Economic Entomology.** Any term, 3 hours.

Designed primarily for Agriculture students. A consideration of typical economic forms of insects in the principal orders and more important families, and of the principles of insect-pest control. Two recitations; 1 three-hour laboratory period.

Ent 223. **Elementary Entomology.** Third term, 3 hours.

Designed primarily for prospective teachers of high school biology and others interested in insects from the biological point of view. Insects in their relation to human welfare, their collection, preservation, classification, and the rearing of living forms are emphasized. Laboratory work includes field trips. Two recitations; 1 three-hour laboratory period.

Ent 234. **Entomology for Engineers.** First or third term, 2 hours.

Designed to acquaint Engineering students, who will deal with timbers, lumber, and wood products, with the defects in wood caused by insects and how to combat them. Two lectures.

Ent 235. **Bee Culture.** Third term, 3 hours.

A practical course in actual apiary manipulations designed primarily for students interested in horticulture. The College has a small apiary where the simpler manipulations may be mastered. Two recitations; 1 three-hour laboratory period.

UPPER DIVISION COURSES

Ent 311, 312, 313. **Entomological Field Work.** Terms and hours to be arranged.

Field work, performed between sophomore and junior years or between junior and senior years, in connection with some State or Federal service; a written report based on an approved outline. Spring, summer, or fall; for summer work registration should be made and fee paid before close of third term. Prerequisite: permission of instructor.

Ent 321. **Principles of Forest Entomology.** First term, 3 hours.

A general introduction to entomology for Forestry students. A survey of the forest losses due to insects, the groups responsible and a consideration of typical examples of the various groups and methods of prevention and control. Required of Forestry and Logging Engineering students. Two lectures; 1 two-hour laboratory period.

Ent 322, 323. **Forest Entomology.** Second and third terms, 3 hours each term.

An intensive study of insects injurious to forests and forest products, forest insect surveys, and the principles of forest insect control. Prerequisite: Ent 321. Two lectures; 1 two-hour laboratory period.

Ent 331, 332, 333. **Commercial Bee Culture.** Three terms, 3 hours each term.

Designed primarily for the student planning to take up commercial honey production. Study of the selection and preparation of equipment; biology and life-history of the honey-bee; honey flora; fall, winter, spring, and summer management; marketing; disease control. Two recitations; 1 three-hour laboratory period.

Ent 352. **Entomological Nomenclature and Literature.** Second term, 3 hours.

A survey of rules, regulations, and practices in entomological nomenclature; the International Code; sources of entomological literature; Bureau of Entomology; periodicals and books; bibliographies.

Ent 353. **Historical Entomology.** First term, 3 hours.

The insects of the ancients; early works on entomology; beginnings in America; early entomological workers in America; introduced pests; development of the Bureau of Entomology; early work in Oregon.

Ent 401. **Research.** Term and hours to be arranged.

Ent 403. **Thesis.** Term and hours to be arranged.

Ent 405. **Advanced Studies.** Term and hours to be arranged.

Ent 407. **Seminar in Current Topics.** Any term, 1 hour each term.

Reading, discussing, and abstracting of the leading articles on entomological topics as they appear in current scientific literature.

Ent 411, 412, 413. **Economic Entomology.** Three terms, 3 hours each term.

An intensive consideration of specific insect pests of farm, garden, and orchard, man, and domestic animals, particularly of the Pacific Coast, and their control; latest developments in insecticides and their uses. Two recitations or lectures; 1 three-hour laboratory period.

Ent 415. **Principles of Insect Control.** Term and hours to be arranged.

Pests of special groups, such as fruit insects, truck crop insects, insects affecting man and animals, greenhouse and field crop insects; control measures and principles.

Ent 423. **Advanced Forest Entomology.** Any term, 4 hours.

An intensive study of the bark beetles injurious to forest trees. Prerequisite: Ent 323 or equivalent. Two lectures; 2 two-hour laboratory periods.

Ent 451, 452, 453. **Insect Taxonomy.** Three terms, 3 hours each term.

The classification of insects of the several orders; intensive study of insects of selected groups; attention to phylogenetic relationships and distribution. Prerequisite: Ent 203 or equivalent. Two recitations; 1 three-hour laboratory period.

Ent 471, 472, 473. **Advanced Entomology.** Three terms, 3 hours each term.
First term, insect morphology—anatomy, histology, embryology, and postembryonic development (1 lecture, 2 three-hour laboratory periods.) Second term, insect physiology—life processes of insects (2 lectures, 1 three-hour laboratory period.) Third term, insect ecology—environmental factors and their influence on insect development and distribution (2 lectures, 1 three-hour laboratory period). Prerequisite: Ent 203 and general physiology or equivalents.

GRADUATE COURSES

Ent 501. **Graduate Research.** Terms and hours to be arranged.

Ent 503. **Graduate Thesis.** Terms and hours to be arranged.

Ent 505. **Graduate Studies.** Terms and hours to be arranged.

Ent 507. **Graduate Seminar in Current Topics.** Terms and hours to be arranged.

Geology

THE courses in geology are planned to afford a foundation in the allied fields and a thorough training in geological subjects. Such training is essential to an appreciation of the importance these subjects occupy in our civilization and serves as a foundation for advanced work leading to the graduate degrees. The State of Oregon offers unusually rich fields for the graduate student working in many phases of physiographical, geological, or paleontological sciences. The department is equipped to afford facilities for graduate work in these fields.

DESCRIPTION OF COURSES

LOWER DIVISION COURSES

G 201, 202, 203. **Geology.** Three terms, 3 hours each term.
An introductory course dealing with those processes of nature by which the surface of the earth has been built up, deformed, and torn down. A study of the natural history and the currents of the common rocks and useful minerals and an outline of the history of the earth and significant events in the history of life. Three lectures. Professor Hodge.

G 204, 205, 206. **Geology Laboratory.** Three terms, 1 hour each term.
Laboratory and field work to accompany G 201, 202, 203 for all students desiring a more intimate knowledge of Geology.

G 280, 281, 282. **Introduction to Field Geology.** Three terms, 1 or 2 hours each term.
A course which may be conducted in the summer, during which time trips to regions of significant geology will be taken. This course is available to students in geology who wish to learn something of geology in nature's own laboratory. Prerequisite: G 201, 202.

UPPER DIVISION COURSES

G 312, 313, 314. **Methods for the Determination of Materials.** Three terms, 4 hours each term.

Physical and chemical methods useful in the recognition of the materials of which the earth is composed. Especial attention given to microphysical and microchemical methods. Prerequisite: chemistry. Assistant Professor Wilkinson.

G 321. **Structural Geology.** Third term, 4 hours.

Study of origin, interpretation and mapping of minor rock structures and joints, faults, and folds. Prerequisite: G 201, 202. Three lectures; 1 laboratory or field period. Assistant Professor Wilkinson.

G 322. **Physiography.** Second term, 4 hours.

Emphasis will be laid upon the physiographic cycle with a view to elaborating the general principles. Three lectures; 1 laboratory or field period. Professor Allison.

G 323. **Stratigraphy.** First term, 4 hours.

The genesis and subsequent history of stratified rocks including a study of the geologic processes concerned with sedimentation and cementation. Prerequisite: G 201, 202, 203. Three lectures; 1 laboratory or field period. Professor Allison.

G 324. **Engineering Geology.** One term, 3 hours.

A special course covering the general field from the engineering standpoint. Professor Allison.

G 330. **Development and History of Life.** First term, 3 hours.

A brief discussion of the origin of life on the earth and an outline of the history of life. Professor Packard.

G 331. **Geologic History of Vertebrates.** Second term, 3 hours.

A brief consideration of the rise and development of the vertebrates with especial emphasis on certain groups of ancient animals that once lived on the Pacific Coast. Professor Packard.

G 332. **Geologic History of Man.** Third term, 3 hours.

A study of the physical and cultural development of the ancient types of men, as shown by their fossil remains, their implements and art. Professor Packard.

G 340, 341. **Invertebrate Paleontology.** Two terms, 4 hours each term.

A study of major groups of fossil invertebrates and the characteristics of important West Coast genera. Two class periods and laboratory periods a week. (The third term of the year-sequence is Bot 410.) Professor Packard.

G 350. **Rocks and Minerals.** First term, 4 hours.

This course gives the student having a general interest in geology the opportunity to become acquainted with rocks and minerals without having to meet the requirements of the more technical courses. Can be combined with term courses in physiography and Oregon geology to form a junior sequence. Of interest to a student majoring in general science and especially useful to one expecting to teach general science. Assistant Professor Wilkinson.

G 352. **Geology of Oregon.** Third term, 3 hours.
Affords opportunity to obtain a general knowledge of the geology of the state without having to meet the technical requirements imposed on a professional geology major. Can be combined with term courses in rocks and minerals and physiography to form a sequence. Of interest to a student majoring in general science and especially useful to one expecting to teach general science. Professor Hodge.

G 380. **Advanced Field Geology.** Nine hours.
A general course in geologic mapping and surveying methods and an intensive study of a small area so chosen as to include a wide range of special problems. This work is conducted in a summer camp of four weeks. The course may be taken with full credit for a series of summers, since a different area is studied each season.

G 401. **Research.** Term and hours to be arranged.

G 403. **Thesis.** Term and hours to be arranged.

G 405. **Advanced Studies.** Term and hours to be arranged.

G 407. **Seminar in Current Topics.** Any term, 1 hour each term.

G 412, 413, 414. **Earth Materials.** Three terms, 4 hours each term.
The description, occurrence, origin, uses, and distribution of minerals, igneous, sedimentary, metamorphic rocks, and metallic ores. Laboratory work with hand specimens and microphysical and microchemical studies of fragments, slices, and polished sections. Mineral Resources, first term; Petrography, second term; Ore Deposits, third term. Prerequisite: A knowledge of methods for determination of materials. Professor Hodge.

G 424. **Advanced Paleontology.** Term and hours to be arranged.
Special work assigned to meet the requirements of the advanced student. Prerequisite: G 340, 341. Professor Packard.

G 431. **Geologic History of North America.** One term, 4 hours.
The geologic development of the North American continent. Prerequisite: stratigraphy. Professor Allison.

G 432. **Geologic History of the Pacific Coast.** One term, 4 hours.
The geologic history of the Pacific Coast of North America. Prerequisite: stratigraphy and paleontology. Professor Allison.

G 433. **Geologic History of Pacific Countries.** Third term, 4 hours.
A study of the broad problems of the Pacific region. Prerequisite: G 201, 202, 321, 323. Professor Allison.

GRADUATE COURSES

G 501. **Graduate Research.** Terms and hours to be arranged.

G 503. **Graduate Thesis.** Terms and hours to be arranged.

G 505. **Graduate Studies.** Terms and hours to be arranged.

G 507. **Graduate Seminar in Current Topics.** Terms and hours to be arranged.

G 512, 513, 514. **Microscopy.** Three terms, hours to be arranged.
A course on the use and theory of the microscope in the recognition and determination of the properties of organic and inorganic materials. Professor Hodge.

G 520. **Advanced Economic Geology.** Term and hours to be arranged.
Special work assigned to meet the requirements of advanced students in metallic and non-metallic mineral deposits. Professor Hodge.

G 580. **Graduate Field Geology.** Term and hours to be arranged.
Advanced field problems assigned to meet the requirements of the graduate student.

Mathematics

MATHEMATICS courses are planned to meet the needs of the following groups: first, those students seeking mental discipline through the study of an exact science; second, those desiring a mathematical basis for the study of the pure and applied sciences; third, those preparing to be teachers of mathematics in high schools; fourth, those desiring to proceed to graduate work in mathematics.

DESCRIPTION OF COURSES

LOWER DIVISION COURSES

Mth 100. **Intermediate Algebra.** One term, 4 hours.
For students entering deficient in algebra.

Mth 101, 102, 103. **Unified Mathematics.** Three terms, 4 hours each term.
Graphs, algebra, elements of calculus, trigonometry, and analytic geometry.

Mth 108. **Mathematics of Finance.** One term, 4 hours.
Courses Mth 101, 102, 108 form a year-sequence for Business Administration students.

Mth 109. **Elements of Statistics.** One term, 4 hours.
Mth 101, 102, 109 form a year-sequence for Forestry freshmen.

Mth 120. **Intermediate Algebra for Engineers.** One term, 5 hours.
For Engineering students entering deficient in algebra.

Mth 121, 122, 123. **Trigonometry and Elementary Analysis.** Three terms, 5 hours each term.
For Engineering students entering without trigonometry.

Mth 131, 132, 133. **Mathematical Analysis.** Three terms, 5 hours each term.
For Engineering students entering with trigonometry.

Mth 201, 202, 203. **Differential and Integral Calculus.** Three terms, 4 hours each term.
Prerequisite: Unified Mathematics or equivalent.

Mth 204, 205, 206. **Differential and Integral Calculus.** Three terms, 4 hours each term.
Prerequisite: Mathematical Analysis or its equivalent.

UPPER DIVISION COURSES

Mth 311. **History of Mathematics.** One term, 3 hours.
A course tracing the development of ancient, medieval, and modern mathematics. Prerequisite: Unified Mathematics or equivalent.

Mth 321, 322, 323. **Analytical Mechanics.** Three terms, 3 hours each term.
First term, statics. Second term, dynamics of a particle. Third term, dynamics of rigid body.

Mth 405. **Advanced Studies.** Terms and hours to be arranged.

Mth 411. **Theory of Equations and Determinants.** One term, 3 hours.
Properties and methods of solution of algebraic equations, and a brief study of determinants and their applications. Prerequisite: Unified Mathematics or equivalent.

Mth 412. **Higher Algebra.** One term, 3 hours.
A more advanced treatment of topics in earlier courses, together with much new material. Prerequisite: Unified Mathematics or its equivalent. Not offered 1934-35.

Mth 413. **Advanced Analytic Geometry.** One term, 3 hours.
A more advanced treatment of the subject and intended for students of fair mathematical maturity. Prerequisite: Unified Mathematics or its equivalent. Not offered 1934-35.

Mth 414. **Solid Analytic Geometry.** One term, 3 hours.
A course dealing with lines and planes in space, surfaces of the second degree, and a brief discussion of surfaces in general. Prerequisite: Unified Mathematics or its equivalent. Not offered 1934-35.

Mth 415. **Modern Geometry.** One term, 3 hours.
A study of the recent developments in synthetic Euclidean geometry. Prerequisite: Unified Mathematics or equivalent.

Mth 416. **Projective Geometry.** One term, 3 hours.
The ordinary equations of projective geometry are studied, covering the projective properties of conics and projective transformations. Both analytic and synthetic methods are used. Prerequisite: calculus.

Mth 420. **Numerical Calculus.** One term, 3 hours.
Finite differences, interpolation, numerical differentiation and integration, and numerical solution of differential equations. Prerequisite: differential equations.

Mth 421, 422. **Differential Equations.** Two terms, 3 hours each term.
A practical course in the solution of ordinary and partial differential equations. Prerequisite: calculus.

Mth 423. **Hyperbolic Functions.** One term, 3 hours.
Prerequisite: calculus.

Mth 424. **Theory of Measurements.** One term, 3 hours.
Theory of errors, method of least squares, and adjustment of observations. Prerequisite: calculus.

Mth 425. **Vector Analysis.** One term, 3 hours.
Prerequisite: calculus.

Mth 426. **Mathematical Theory of Probability.** One term, 3 hours.
A course for advanced students. Prerequisite: calculus.

Mth 431, 432. **Advanced Calculus.** Two terms, 3 hours each term.
Selected topics not covered in the first year of calculus. Prerequisite: Mth 421, 422. Not offered 1934-35.

Mth 441, 442. **Mathematical Theory of Statistics.** Two terms, 3 hours each term.
A course for advanced students. Prerequisite: calculus. Not offered 1934-35.

GRADUATE COURSES

Mth 501. **Graduate Research.** Terms and hours to be arranged.

Mth 503. **Graduate Thesis.** Terms and hours to be arranged.

Mth 505. **Graduate Studies.** Terms and hours to be arranged.

Mth 507. **Graduate Seminar in Current Topics.** Terms and hours to be arranged.

Mth 511, 512, 513. **Functions of a Complex Variable.** Three terms, 3 hours each term.
An introduction to analytic functions, fundamental for advanced study in mathematics.

Mth 514. **Calculus of Variations.** One term, 3 hours.
Not offered 1934-35.

Mth 516. **Potential Theory.** One term, 3 hours.
A study of the Newtonian and other potential functions. Not offered 1934-35.

Mth 521, 522, 523. **Differential Equations of Mathematical Physics.** Three terms, 3 hours each term.
Ordinary and partial linear differential equations and boundary value problems, with applications. Not offered 1934-35.

Mth 531, 532, 533. **Advanced Analytical Mechanics.** Three terms, 3 hours each term.
Topics selected according to needs of students, in relation to previous and contemplated work. Not offered 1934-35.

Mth 541. **Theory of Elasticity.** One term, 3 hours.
The mechanics of elastic solids; applications to the strength, resistance, and deformation of materials.

Mth 544, 545. **Hydrodynamics.** Two terms, 3 hours each term.
The mechanics of fluids, with special reference to liquids, but including also some applications to air and other gases. The work of the second term requires a knowledge of spherical and cylindrical harmonics. Three lectures.

Nursing Education

WHILE the first two years of the five-year Nursing Education curriculum as given at the State College (see pages 112-113, 121) are devoted chiefly to general and basic subjects in preparation for the professional training at the Medical School and in affiliated hospitals, a yearsequence is required in the freshman year in the backgrounds of the nursing profession.

DESCRIPTION OF COURSES

LOWER DIVISION COURSES

Nur 211, 212, 213. **Backgrounds of Nursing.** Three terms, 3 hours each term.

A study of the historical backgrounds of modern social and health movements, the relation of these to the evolution of nursing as a profession, and present aims and problems in nursing at home and abroad. Miss Wheelock.

Physics

STUDENTS planning to major in physics should offer a maximum of high school mathematics and physics for entrance. The lower division program should include mathematics through the calculus, general chemistry, and ordinarily two years of physics. Those planning for graduate study and research should also lay the foundations of a reading knowledge of German or French, or both. In special cases courses in closely related departments, involving a considerable study of physical principles, may be accepted as major work.

DESCRIPTION OF COURSES

LOWER DIVISION COURSES

Ph 111, 112, 113. **Engineering Physics.** Three terms, 3 hours each term.

A course in general physics adapted to students in Engineering. One lecture; 2 recitations; 2 one-hour laboratory periods. Professor Weniger and others.

Ph 161. **Rudiments of Photography.** One term, 2 hours.

A manipulation course intended for students not having the science prerequisites for Ph 361. One lecture; 2 two-hour laboratory periods.

Ph 201, 202, 203. **General Physics.** Three terms, 4 hours each term.

A general course covering mechanics sound, heat, light, electricity, and an introduction to the modern physics. Two lectures; 2 recitations; 1 two-hour laboratory period. Professor Anderson.

Ph 204, 205, 206. **Astronomy and Meterology.** Three terms, 3 hours each term.

This course is descriptive rather than mathematical. First term, Astronomy, emphasis on solar system. Second term, Meterology, and

the physics of the atmosphere (weather not suitable for astronomical observations). Third term, Astronomy, emphasis on types and groupings of stars. Students may enter any term. Three lectures or equivalent in observational and laboratory work. Professor Anderson.

UPPER DIVISION COURSES

(General Physics and Calculus are prerequisite to all upper division courses except Ph 331, 332, 333, 361, 362, 363, 380, 381, 396, 461, 462, 463.)

Ph 311, 312, 313. **Physical Measurements.** Three terms, 3 hours each term.
A second course in physics stressing instrumental technique. Optical, thermal, and electrical measurements are followed by an introduction to conduction in gases, radio activity, and electrons. Prerequisite: one year of college physics and calculus. Two lectures; 2 two-hour laboratory periods.

Ph 331, 332, 333. **Radio Communication.** Three terms, 3 hours each term.
Theory of radio transmission and reception; study of vacuum tubes; radio and audio frequency measurements; special problems. Two lectures or recitations; 1 laboratory period. Assistant Professor Yunker.

Ph 343. **Acoustics.** One term, 3 hours.
A study of the acoustics of buildings. Three lectures; occasional laboratory.

Ph 361, 362, 363. **Photography.** Three terms, 3 hours each term.
Theoretical and practical phases of the subject. First term: hand camera, photographic processes, enlarging, lantern slides, etc. Second term: special techniques. Third term: special problems. Prerequisite: physics or chemistry. One or two lectures; 2 two-hour laboratory periods. Mr. Garman.

Ph 380. **Laboratory Arts.** Term and hours to be arranged.
The construction, repair, and adjustment of physical apparatus. If desired, the study of the administration of the physical laboratory and points regarding home-made apparatus for high schools. Lectures, assigned readings, and laboratory.

Ph 381. **History of Physics.** One term, 3 hours.
Three lectures.

Ph 396. **Practical Astronomy.** One term, 3 hours.
Determination of time, latitude, longitude, and azimuth by astronomical methods. Prerequisite: Ph 206 and trigonometry. One lecture; 2 observation periods. Professor Anderson.

Ph 401. **Research.** Term and hours to be arranged.

Ph 403. **Thesis.** Term and hours to be arranged.

Ph 405. **Advanced Studies.** Term and hours to be arranged.
Readings and reports on special topics.

Ph 407. **Seminar in Current Topics.** Any term, 1 hour each term.

Ph 411, 412, 413. **Classical Theories.** Three terms, 3 hours each term.

The theoretical background of classical physics, especially the kinetic and electromagnetic theories. It is recommended that Ph 311, 312, 313 either precede or be taken concurrently. Three lectures. Professor Boynton.

Ph 461, 462, 463. **Advanced Photography.** Three terms, 3 hours each term.

Work in special fields such as color photography, photomicrography, microscopic motion pictures, miniature camera technique, etc. Prerequisite: Ph 362. One lecture; 2 two-hour laboratory periods. Mr. Garman.

Ph 464. **The Physics of Light Production.** One term, 3 hours.

A study of radiation and the development of modern illuminants. Two lectures; 1 three-hour laboratory period. Professor Weniger.

Ph 471, 472, 473. **Introduction to Modern Physics.** Three terms, 3 hours each term.

Cathode, canal and X-rays, ionization of gases, photoelectricity, radioactivity, atomic structure, thermoelectricity, metallic conduction, radiation, and wave mechanics. Three lectures. Professor Caswell.

Ph 474, 475, 476. **Modern Physics Laboratory.** Three terms, 1 hour each term.

Generally taken concurrently with Ph 471, 472, 473. One three-hour laboratory period. Professor Weniger.

GRADUATE COURSES

Courses at the graduate level are given when warranted by demand. A student may expect ordinarily to be able to take the courses necessary for his advanced degree during his normal period of graduate residence.

Ph 501. **Graduate Research.** Terms and hours to be arranged.

Ph 503. **Graduate Thesis.** Terms and hours to be arranged.

Ph 505. **Graduate Studies.** Terms and hours to be arranged.

Ph 507. **Graduate Seminar in Current Topics.** Terms and hours to be arranged.

Ph 524, 525, 526. **Advanced Mathematical Physics.** Three terms, hours to be arranged.

Lectures and assigned readings. The topics treated will be varied from year to year to suit the needs of the students.

Ph 531, 532, 533. **Advanced Electrical Theory.** Three terms, 3 hours each term.

Special attention to transient phenomena, oscillations and waves, thermionic vacuum tubes, and modern applications. Prerequisite: Ph 311, 312, 313. Professor Boynton.

Ph 534, 535, 536. **Advanced Electrical Laboratory.** Three terms, 1 or 2 hours each term.

To be taken with Ph 531, 532, 533. Professor Boynton.

Ph 551, 552, 553. **Theory of Heat.** Three terms, 3 hours each term.
Thermodynamics and the kinetic theory. Especially for students in physics and physical chemistry and those interested in industrial applications. Three lectures. Professor Boynton.

Ph 561, 562, 563. **Optics.** Three terms, 3 hours each term.
Physical optics; theory of optical instruments; spectroscopy. Prerequisite: Ph 473. Two lectures; 1 three-hour laboratory period. Professor Weniger.

Ph 571, 572, 573. **Modern Physical Theories.** Three terms, 3 hours each term.
A discussion of such topics as the electron theory, relativity, the quantum theory, and wave mechanics. Three lectures. Prerequisite: Ph 473. Professor Caswell.

Ph 576. **Quantum Mechanics.** One term, 3 hours.
A study of modern theories based on matrices, tensors, Schroedinger's equation, Heisenberg principle, and Dirac's transformation theory. Three lectures. Prerequisite: Ph 562, 573. Professor Caswell.

Ph 591, 592. **Cosmic Physics.** Two terms, 3 hours each term.
A study of the physical characteristics and behavior of the stellar universe with special emphasis upon the problems of the earth and the solar system. Three lectures. Professor Caswell.

Ph 593. **Geophysics.** One term, 3 hours.
Prerequisite: G 321, Ch 203, and differential equations. Three lectures. Professor Caswell.

Zoology

IN the lower division courses the purpose is to furnish the student with effective grounding in the principles of animal biology and in laboratory methods. These courses also form the basis for technical and professional work in the applied fields of zoology. The upper division courses provide for training in the special fields of the science and an acquaintance with recent developments. Advanced study courses and seminars introduce the student to research and give opportunity for advanced work in selected subjects.

DESCRIPTION OF COURSES

LOWER DIVISION COURSES

Z 130. **Principles of Zoology.** Third term, 3 hours.
The distribution, habits, and functions of animals with reference to their economic importance. Two lectures; 1 three-hour laboratory period.

Z 201, 202, 203. **General Zoology.** Three terms, 3 hours each term.
An introductory course dealing with principles of animal biology. Two lectures; 1 three-hour laboratory period. For premedical students,

pharmacy, physical education and psychology students, and others desiring a fundamental course in general zoology.

Z 204, 205, 206. **Vertebrate Zoology.** Three terms, 4 hours each term.
The elements of comparative anatomy, gross and microscopic, and of vertebrate embryology. Two lectures; 6 hours laboratory.

Z 210. **Elementary Human Anatomy.** First term, 3 hours.
For students in physical education and others desiring a one-term course dealing with the organization of the human body. Two lectures; 1 laboratory period.

Z 211. **Elementary Human Physiology.** Second or third term, 5 hours.
For students in Home Economics, Physical Education, Prenursing, and others desiring a general course in the principles of human physiology. Three lectures; 2 laboratory periods.

Z 213. **Field Zoology.** Third term, 4 hours.
The local vertebrates, their taxonomic arrangement, habits, and distribution. Two lectures; 6 hours of laboratory or field work, the latter being largely bird study.

UPPER DIVISION COURSES

Z 314. **Genetics.** First term, 3 hours.
A study of heredity and variation in plants and animals. Special emphasis on such topics as heredity versus environment, inheritance of acquired characteristics, the glands of internal secretion and development, Mendelian principles of heredity, newer developments in heredity and heredity in man.

Z 315. **Evolution and Eugenics.** Second term, 3 hours.
A study of the various ideas concerning the origin, development, and relation of organisms with emphasis on human welfare.

Z 375. **Histology.** First term, 3 hours.
A study of the tissues of higher animals. One lecture; 6 hours laboratory.

Z 376. **Microtechnique.** Second term, 3 hours.
Study and practice in the principal methods of preparing animal tissues for microscopic study. One lecture; 6 hours of laboratory work.

Z 377. **Vertebrate Embryology.** Third term, 3 hours.
A study of the morphology and physiology of the early development of mammals. One lecture; 6 hours laboratory.

Z 401. **Research.** Term and hours to be arranged.

Z 403. **Thesis.** Term and hours to be arranged.

Z 405. **Advanced Studies.** Term and hours to be arranged.
Readings and reports on special topics.

Z 407. **Seminar in Current Topics.** Any term, 1 hour each term.

Z 411, 412. **General Physiology.** Second and third terms, 4 hours each term.
The principles of physiology and their application to life processes in plants and animals. Prerequisite: general chemistry and general physics. Two lectures; 2 three-hour laboratory periods.

Z 431, 432. **Invertebrate Zoology.** First and second terms, 4 hours each term.
The structure, classification, distribution, and life-histories of the invertebrates. Two lectures; 6 periods laboratory work.

Z 436. **Parasitology.** One term, 3 hours.
A consideration of the role played by animals in the production of disease. Lectures, conferences, and laboratory work. Not offered 1934-35.

Z 437. **Cytology.** One term, 3 hours.
A study of the structure and function of the cell with special reference to the behavior and distribution of chromosomes. Lectures, conferences, and laboratory work. Offered if sufficient demand.

GRADUATE COURSES

Z 501. **Graduate Research.** Terms and hours to be arranged.

Z 503. **Graduate Thesis.** Terms and hours to be arranged.

Z 505. **Graduate Studies.** Terms and hours to be arranged.

Z 507. **Graduate Seminar in Current Topics.** Terms and hours to be arranged.

COURSES AT UNIVERSITY

The following lower division and service courses in Science are available at the University:

GENERAL SCIENCE

BiS 101, 102, 103. Biological Science Survey. Three terms, 3 hours each term.
PhS 101, 102, 103. Physical Science Survey. Three terms, 4 hours each term.

BOTANY

LOWER DIVISION COURSES

Bot 201, 202, 203. General Botany. Three terms, 3 hours each term.
Bot 204. Plant Activities. First term, 4 hours.
Bot 205. Plant Groups. Second term, 4 hours.
Bot 206. Plant Classifications. Third term, 4 hours.
Bot 217, 218. Field Botany. First and second terms, 2 or 3 hours each term.
Bot 219. Economic Botany. Third term, 3 hours.

CHEMISTRY

LOWER DIVISION COURSES

Ch 201, 202, 203. Elementary Chemistry. Three terms, 4 hours each term.
Ch 204, 205, 206. General Chemistry. Three terms, 4 hours each term.
Ch 211, 212, 213. Second Year Chemistry. Three terms, 4 or 5 hours each term.
Ch 220. Continuation Chemistry. First term, 4 hours.
Ch 221, 222. Elementary Organic Chemistry. First and second terms, 3 hours each term.
Ch 223. Elementary Biochemistry. Third term, 4 hours.
Ch 226, 227. Organic Chemistry. Two terms, 4 hours each term.
Ch 231. Qualitative Analysis. First term, 4 hours.
Ch 232. Quantitative Analysis. Second or third term, 3 to 5 hours each term.
Ch 233. Quantitative Analysis. Third term, 3 to 5 hours.

UPPER DIVISION SERVICE COURSE

Ch 340. Physical Chemistry. Third term, 3 hours.

GEOLOGY

LOWER DIVISION COURSES

G 201, 202, 203. General Geology. Three terms, 3 hours each term.
G 204, 205, 206. General Geology Laboratory. Three terms, 1 hour each term.
G 280, 281, 282. Introduction to Field Geology. Three terms, 1 to 3 hours each term.

MATHEMATICS

LOWER DIVISION COURSES

Mth 104, 105, 106, 107, 108. Unified Mathematics. Three terms, 4 hours each term.
- Mth 104. Intermediate Algebra. One term, 4 hours.
- Mth 105. Elementary Analysis. One term, 4 hours.
- Mth 106. Plane Trigonometry. One term, 4 hours.
- Mth 107. Plane Analytical Geometry. One term, 4 hours.
- Mth 108. Mathematics of Finance. One term, 4 hours.

Mth 109. Elements of Statistics. One term, 4 hours. Not offered 1934-35.
Mth 110. College Algebra. One term, 4 hours.
Mth 111, 112, 113. Introduction to Mathematical Analysis. Three terms, 2 hours each term.
Mth 200. Analytical Geometry. First term, 4 hours.
Mth 201, 202. Differential and Integral Calculus. Second and third terms, 4 hours each term.
Mth 203, 204, 205. Differential and Integral Calculus. Three terms, 4 hours each term.
Mth 214. Higher Algebra. One term, 3 hours.
Mth 215. Analytical Trigonometry. One term, 3 hours. Not offered 1934-35.
Mth 217. Elements of Projective Geometry. One term, 3 hours. Not offered 1934-35.
Mth 218. Theory of Equations. One term, 3 hours. Not offered 1934-35.
Mth 219. History of Elementary Mathematics. One term, 3 hours.

UPPER DIVISION SERVICE COURSE

Mth 333. Elements of Modern Geometry. One term, 3 hours.

NURSING EDUCATION

LOWER DIVISION COURSES

Nur 211, 212, 213. Backgrounds of Nursing. Three terms, 3 hours each term.

PHYSICS

LOWER DIVISION COURSES

Ph 200, 201, 202, 203, 204, 205, 206, 210. General Physics.
- Ph 200. Recitations in General Physics. Three terms, 1 hour each term.
- Ph 201, 202. 203. General Physics Lectures. Three terms, 2 hours each term.
- Ph 204, 205, 206. General Physics Laboratory. Three terms, 1 hour each term.
- Ph 210. Recitations in Theoretical Physics. Three terms, 2 hours each term.

Ph 207, 208, 209. Descriptive Astronomy. Three terms, 3 hours each term.
Ph 211, 212, 213. Advanced Physics. Three terms, 3 hours each term.

UPPER DIVISION SERVICE COURSE

Ph 346. Sound. Second term, 3 hours.

ZOOLOGY

LOWER DIVISION COURSES

Z 005. Elementary Problems in Zoology. Terms and hours to be arranged.
Z 201, 202, 203. General Zoology. Three terms, 3 hours each term.
Z 204, 205, 206. Vertebrate Zoology. Three terms, 4 hours each term.
Z 213. Field Zoology. Third term, 4 hours.
Z 240, 241, 242. Evolution, Heredity and Eugenics. Three terms, 2 hours each term.

UPPER DIVISION SERVICE COURSES

Z 311, 312, 313. Elementary Human Physiology. Three terms, 3 hours each term.

School of Agriculture

Faculty

WILLIAM ALFRED SCHOENFELD, M.B.A., Dean of the School of Agriculture.

ARTHUR BURTON CORDLEY, D.Sc., LL.D., Dean Emeritus of the School of Agriculture.

RALPH STEPHEN BESSE, M.S., Vice-Director of the Agricultural Experiment Station.

MARIE BERRY LEWIS, Pd.B., Secretary to the Dean.

DIVISION OF AGRICULTURAL ECONOMICS

ERMINE LAWRENCE POTTER, M.S., Professor of Agricultural Economics; In Charge, Division of Agricultural Economics.

Agricultural Economics

MILTON NELS NELSON, Ph.D., Professor of Agricultural Economics.

WILLIAM HENRY DREESEN, Ph.D., Professor of Agricultural Economics.

Farm Management

HENRY DESBOROUGH SCUDDER, B.S., Professor of Farm Management.

GUSTAV WESLEY KUHLMAN, M.S., Associate Professor of Farm Management.

DIVISION OF ANIMAL INDUSTRIES

PHILIP MARTIN BRANDT, A.M., Professor of Dairy Husbandry; In Charge, Division of Animal Industries.

Animal Husbandry

ORAN MILTON NELSON, M.S., Professor of Animal Husbandry.

BENJAMIN WILLIAM RODENWOLD, M.S., Assistant Professor of Animal Husbandry.

*ALFRED WEAVER OLIVER, M.S., Assistant Professor of Animal Husbandry.

Dairy Husbandry

GUSTAV HANS WILSTER, Ph.D., Professor of Dairy Manufacturing.

IDWAL RALPH JONES, Ph.D., Associate Professor of Dairy Husbandry.

HOWARD NOTSON COLMAN, A.B., B.S., Assistant Professor of Dairy Husbandry.

Poultry Husbandry

ALFRED GUNN LUNN, B.S., Professor of Poultry Husbandry.

FRANK ELMER FOX, M.S., Associate Professor of Poultry Husbandry.

Veterinary Medicine

BENNETT THOMAS SIMMS, D.V.M., Professor of Veterinary Medicine.

WALTER THEODORE JOHNSON, D.V.M., Professor of Veterinary Medicine.

JAMES NIVEN SHAW, D.V.M., Associate Professor of Veterinary Medicine.

OTTO HERBERT MUTH, D.V.M., Instructor in Veterinary Medicine.

*On leave of absence 1933-34.

DIVISION OF PLANT INDUSTRIES

GEORGE ROBERT HYSLOP, B.S., Professor of Farm Crops; In Charge, Division of Plant Industries.

Farm Crops

*DONALD DAVID HILL, M.S., Associate Professor of Farm Crops.

DAVID CLYDE SMITH, Ph.D., Assistant Professor of Farm Crops.

REX WARREN, M.S., Instructor in Farm Crops.

LINDEN ELI HARRIS, M.S., Instructor in Farm Crops.

†HENRY HARDY RAMPTON, M.S., Instructor in Farm Crops.

ALVIN EUGENE GROSS, B.S., Teaching Fellow in Farm Crops.

HOWARD THEODORE JOHNSTON, B.S., Teaching Fellow in Farm Crops.

Horticulture

WALTER SHELDON BROWN, D.Sc., Professor of Horticulture.

ARTHUR GEORGE BOUQUET, M.S., Professor of Vegetable Crops.

ERNEST HERMAN WIEGAND, B.S.A., Professor of Horticultural Products.

WILLIS PIERRE DURUZ, Ph.D., Professor of Pomology.

JAMES CECIL MOORE, M.S., Assistant Professor of Horticulture.

THOMAS ONSDORFF, B.S., Assistant Professor of Horticultural Products.

Soils

WILBUR LOUIS POWERS, Ph.D., Professor of Soils.

CHARLES VLADIS RUZEK, M.S., Professor of Soil Fertility.

ROSCOE ELMO STEPHENSON, Ph.D., Associate Professor of Soils.

EDWARD FRITCHOFF TORGERSON, B.S., Assistant Professor of Soils.

OTHER DEPARTMENTS

Agricultural Education

HEBER HOWARD GIBSON, A.M., Professor of Agricultural Education.

OLIVER KENNETH BEALS, B.S., Critic Teacher in Agricultural Education.

Agricultural Engineering

WILLIAM JAMES GILMORE, B.C.E., B.S., Professor of Agricultural Engineering.

CLYDE WALKER, M.S., Associate Professor of Agricultural Engineering.

RALPH NICHOLAS LUNDE, B.S., Assistant Professor of Agricultural Engineering.

Extension Methods

‡PAUL VESTAL MARIS, B.S., Professor of Extension Methods.

Curricula in Agriculture

UNDERGRADUATE and graduate curricula are offered in the School of Agriculture in General or Specialized Agriculture, in Agricultural Engineering, in Horticultural Products, and in Agricultural Technology.

*On leave of absence 1933-34.
†Resigned.
‡On leave of absence 1934-35.

The Bachelor's Degree. The degree of Bachelor of Science is granted on the completion of any of the undergraduate curricula, which comprise a total of 192 term hours of credit (including Military and Physical Education).

Graduate Degrees. Opportunities are provided in all the departments of these groups for graduates of this College, or of other institutions of standard rank, to do graduate work leading to the degree of Master of Science. In many of the departments work leading to the degree of Doctor of Philosophy is offered. The requirements for higher degrees are explained in full under Graduate Division.

Curricular Organization. The curricula offered in the School of Agriculture are organized into the following groups:

A. General and Specialized Agriculture.
B. Agricultural Engineering.
C. Horticultural Products.
D. Agricultural Technology.

A. General and Specialized Agriculture. Curricula in General and Specialized Agriculture (pages 153-161) are planned to train young men or women to become successful farmers, stockmen, dairymen, poultrymen, or fruit or truck growers; to be efficient managers of farm or orchard properties, commercial creameries, cheese plants and ice-ceam factories, market milk plants, and other business enterprises in which a knowledge of practical and scientific agriculture is of value; to serve as agricultural advisers and land appraisers for banks, trust companies, land companies and realtors, as specialists in the United States Department of Agriculture or in agricultural colleges as teachers, investigators, extension specialists, county agricultural agents, 4-H club leaders, or as teachers of agriculture in secondary schools or in charge of control laboratories in manufacturing industries related to agriculture.

The freshman year (page 153) is the same for all students in General and Specialized Agriculture. The curriculum in General Agriculture (page 153) provides liberal opportunity for students to carry a strong option in some other school or division, such as Business Administration, Social Science, or Education. Beyond the freshman year special curricula are offered in Agricultural Economics and Farm Management (pages 154-155) and in Agricultural Education (pages 155-156). All students majoring in Animal Industries (pages 156-158) pursue the same work in the sophomore year and in the junior and senior years pursue major electives in Animal Husbandry, Dairy Production, Dairy Manufacturing, or Poultry Husbandry. Students in Plant Industries (except in Landscape Maintenance, see below), pursue the same work in the sophomore year (page 158) and in the junior and senior years elect a major in Farm Crops (page 158), Horticulture (Pomology, pages 159-160; Vegetable Crops, page 160); or Soils (pages 160-161). The Curriculum in Landscape Maintenance (page 159) trains students for the practical application of landscaping principles to problems in the field, as in the management of estates, superintendency

of cemeteries and parks, ornamental nursery stock industry, teaching the practical phases of ornamental gardening, maintenance of golf courses, contracting and construction on new properties, and in other similar occupations.

B. Agricultural Engineering involves the application of engineering principles in the industry of agriculture. The curriculum (pages 161-162) includes work in mathematics, physics, and chemistry, and fundamental courses in the different engineering departments. Agriculture subjects are selected to familiarize the student with methods of scientific agriculture.

Graduates in Agricultural Engineering take up work along the following lines: college extension, experiment station, and government work in agricultural engineering; sales and development work with manufacturers of implements such as tractors and farm equipment; agricultural specialists with building materials and equipment companies. For those who desire to enter the commercial field, unusual opportunities are afforded in the farm implement and lumber retail business. The teaching of vocational agriculture in the public schools and service as managers or operators of farms where the knoweldge of drainage, farm structures, and machinery and power equipment is important also afford opportunities for graduate agricultural engineers.

C. Horticultural Products. In the Horticultural Products curriculum (pages 162-163) the objective is to train students in the fields of canning, preserving, fruit juice and vinegar making, carbonated beverage manufacturing, pickling, dehydrating, and the by-products of these industries. Training in these and other phases of food manufacturing and handling is both technical and practical. Positions open besides those connected with the actual manufacture in the above mentioned fields are: buyers of raw materials, salesmen, food brokers, food inspectors, food chemists, food bacteriologists, food research workers, and instructors in foods.

D. Agricultural Technology. The curriculum in Agricultural Technology (page 163) provides training for Agriculture students desiring a minor in Science leading to specialized or technical lines of work. Such work necessarily involves rather liberal electives. This curriculum is open to students with a definite technical objective. They should confer with the Dean of the School of Agriculture and the heads of the departments in whose fields they are especially interested and work out a complete program of electives leading to the special work. Training in this curriculum leads to technical work in the industries handling agricultural and related products and to specialized lines in State or Federal research and regulatory work. Men and women desiring to be dairy or milling chemists, dairy or agricultural bacteriologists, insecticide, fertilizer, or seed analysts, transportation or refrigeration specialists, specialists in processing of agricultural products, nursery and quarantine inspectors, managers of warehouses or elevators, plant explorers, and other specialists may be trained under this curriculum.

A. Curricula in General and Specialized Agriculture

B.S. Degree

General Agriculture
Agricultural Economics
Agricultural Economics
Farm Management
Agricultural Education
[1]Animal Industries
Animal Husbandry
Dairy Production
Dairy Manufacturing
Poultry Husbandry

Plant Industries
Farm Crops
Horticulture
Landscape Maintenance
Pomology
Vegetable Crops
Soils

FRESHMAN YEAR

	Term hours 1st	2d	3d
English Composition (Eng 111, 112, 113)	3	3	3
Elementary General Chemistry (Ch 201, 202, 203)	3	3	3
General Botany (Bot 201, 202)	3	3	—
Principles of Zoology (Z 130)	—	—	3
Cereal Production (FC 111)	3	—	*or* (3)
Livestock Management I (AH 221)	(3)	—	*or* 3
Practical Poultry Keeping (PH 211)	—	3	—
Agricultural Resources (AEc 111)	3	—	—
Elements of Horticulture (Hrt 111)	—	—	3
Agricultural Engineering (AE 111)	—	3	—
[2]Physical Education	1	1	1
Military Science	1	1	1
	17	17	17

GENERAL AGRICULTURE

Sophomore Year

Principles of Economics (Ec 201, 202, 203)	3	3	3
Soils (Sls 211, 212)	3	3	—
Soil Drainage and Irrigation (Sls 213)	—	—	3
Organic Chemistry (Ch 221)	5	—	—
Principles of Farm Management (FM 211)	—	—	3
Forage and Root Crop Production (FC 211)	3	—	*or* (3)
General Bacteriology (Bac 204)	—	3	—
Elements of Dairying (DH 211)	—	3	—
Electives	—	2	5
Advanced Physical Education	1	1	1
Military Science	1	1	1
	16	16	16

Junior Year

Elementary Journalism (J 111)	—	3	—
Extempore Speaking (Sp 111)	3	—	—
[3]Electives	13	13	16
	16	16	16

Senior Year

Modern Governments (PS 201, 202)	4	4	—
[3]Electives	12	12	16
	16	16	16

[1]At the graduate level major work is also offered in Veterinary Medicine.
[2]General Hygiene, 2 term hours, is taken the second term in place of Physical Education. Women are required to take Social Ethics (PE 131).
[3]Electives leading to specific objectives are chosen in conference with the Dean of Agriculture and must include a minimum of 36 upper division credits in agriculture.

AGRICULTURAL ECONOMICS AND FARM MANAGEMENT

Sophomore Year	Term hours 1st	2d	3d
Principles of Economics (Ec 201, 202, 203)	3	3	3
Agricultural Statistics (AEc 221)	—	3	—
Agricultural Economics (AEc 211)	—	—	3
Organic Chemistry (Ch 221)	5	—	—
General Bacteriology (Bac 204)	—	3	—
Principles of Farm Management (FM 211)	—	—	3
Elements of Dairying (DH 211)	—	3	—
Forage and Root Crop Production (FC 211)	—	—	3
Soils (Sls 211, 212)	3	3	—
Soil Drainage and Irrigation (Sls 213)	—	—	3
Farm Accounting (FM 311)	3	—	—
Military Science	1	1	1
Advanced Physical Education	1	1	1
	16	17	17

AGRICULTURAL ECONOMICS

Junior Year

Principles of Agricultural Marketing (AEc 441)	4	—	—
Rural Sociology (Soc 364)	—	—	3
Rural Finance (AEc 431))	—	3	—
Money and Banking (Ec 413)	—	—	4
Public Finance (Ec 418)	—	4	—
Modern Governments (PS 201, 202)	4	4	—
Seminar in Agricultural Economics (AEc 307)	1	1	1
[1]Electives	7	4	8
	16	16	16

Senior Year

Business Law (BA 256)	4	—	—
Cooperative Marketing Organization (AEc 411)	—	—	3
Enterprise Costs and Profits (FM 414)	—	—	3
Agricultural Land Economics (FM 416)	—	3	—
Agricultural Prices (AEc 451)	—	—	3
Seminar in Agricultural Economics (AEc 407)	1	1	1
Electives	11	12	6
	16	16	16

FARM MANAGEMENT

Junior Year

Operation Efficiency (FM 312)	3	—	—
Farm Organization (FM 411)	—	3	—
Enterprise Costs and Profits (FM 414)	—	—	3
Animal Breeding (PH 315)	—	3	—
Animal Nutrition (AH 411)	—	—	4
Electives	13	10	9
	16	16	16

Electives

Principles of Plant Pathology (Bot 351)	4	—	—
Soil Physics (Sls 422)	3	—	—
Soil Survey (Sls 327)	—	—	3
Practical Poultry Keeping (PH 211)	3 *or*	3	—
Elementary Journalism (J 111)	3 *or*	3 *or*	3
Farm Motors and Tractors (AE 318)	3 *or*	3 *or*	3
Farm Equipment Repair (Farm Shop II) (AE 222)	—	3	—
Rural Finance (AEc 431)	—	3	—
Pruning (Pom 431) *or* Fruit Production (Pom 415)	—	3 *or*	4
Landscape Architecture (LA 279)	3 *or*	3 *or*	3
Stock Judging II (AH 311)	—	—	3
Livestock Practice (AH 319, 320)	1	—	2
Secondary Education (Ed 311)	3	—	—
Educational Psychology (Ed 312)	—	3	—
Principles of Teaching (Ed 313)	—	—	3

[1]Students are expected to choose from their electives a sufficient number of courses in their junior and senior years to give them thorough familiarity with the production of at least one agricultural commodity.

Senior Year

	Term hours 1st	2d	3d
Enterprise Costs and Profits (FM 415)	2	—	—
Applied Farm Management (FM 403)	—	—	3
Agricultural Land Economics (FM 416)	—	3	—
Dairy Herd Management (DH 322)	—	3	—
Extempore Speaking (Sp 111)	3	—	—
Modern Governments (PS 201)	—	—	4
Electives	11	10	9
	16	16	16

Electives

Diseases of Livestock (VM 341)	4	—	—
Soil Fertility Lectures (Sls 425)	—	3	—
Extension Methods (EM 411)	—	—	3
Principles of Agricultural Marketing (AEc 441)	4	—	—
Cooperative Marketing Organization (AEc 411)	—	—	3
Agricultural Prices (AEc 451)	—	—	3
Livestock Economics (AH 424)	—	—	5
Seed Production (FC 414)	3	—	—
Turkey Management (PH 351)	3	—	—
Breeding Dairy Cattle (DH 421)	—	3	—
Milk Production (DH 422)	—	—	3
Business Law (BA 256)	4	—	—
House Planning and Architectural Drawing (AA 178)	—	—	3
Special Methods in Agriculture (Ed 328)	5	—	—
Supervised Teaching (Ed 315)	—	3	3
Methods in Teaching Evening and Part-Time Classes in Agriculture (AEd 313)	—	2	—

AGRICULTURAL EDUCATION

Sophomore Year

Principles of Economics (Ec 201, 202, 203)	3	3	3
Organic Chemistry (Ch 221)	5	—	—
Elements of Dairying (DH 211)	3	—	—
General Bacteriology (Bac 204)	—	3	—
Principles of Farm Management (FM 211)	—	—	3
Farm Motors and Tractors (AE 318) *or* Automobile Mechanics (AE 312)	—	3	—
Forage and Root Crop Production (FC 211)	—	—	3
Practical Poultry Keeping (PH 211)	—	3	—
Soils (Sls 211, 212)	3	3	—
Outlines of Psychology (Psy 211)	—	—	4
Military Science	1	1	1
Advanced Physical Education	1	1	1
	16	17	15

Junior Year

Farm Construction (Farm Shop I) (AE 221)	3	—	—
Animal Nutrition (AH 411)	4	—	—
Dairy Herd Management (DH 322)	—	3	—
Secondary Education (Ed 311)	—	3	—
Principles of Teaching (Ed 313)	—	—	3
Enterprise Costs and Profits (FM 414)	—	—	3
Educational Psychology (Ed 312)	3	—	—
Electives	7	11	11
	17	17	17

Electives

Automobile Mechanics (AE 313)	—	—	3
Farm Equipment Repair (Farm Shop II) (AE 222)	—	3	—
Landscape Architecture (LA 279)	3	—	—
Elementary Journalism (J 112)	—	—	3
Soil Fertility Lectures (Sls 425)	—	3	—
Principles of Plant Pathology (Bot 351)	4	—	—
Principles of Economic Entomology (Ent 211)	—	—	3
Elementary Journalism (J 111)	—	3	—
Fruit Production (Pom 415)	—	—	4
Plant Propagation (Hrt 311)	—	3	—

Senior Year	Term hours 1st	2d	3d
Special Methods in Agriculture (Ed 328)	5	---	---
Rural Survey Methods (AEd 533)	---	---	2
Supervised Teaching (Ed 315)	---	3	2
Modern Governments (PS 201)	---	---	4
Extempore Speaking (Sp 111)	---	---	3
Electives	12	13	5
	17	16	16

Electives

Seminar in Education (AEd 407)	---	2	2
Livestock Economics (AH 424)	---	---	5
House Planning and Architectural Drawing (AA 178)	---	---	3
Milk Production (DH 422)	---	---	3
Cooperative Marketing Organization (AEc 411)	---	---	3
Seed Production (FC 414)	3	---	---
Farm Organization (FM 411)	---	3	---
Poultry Feeding (PH 411)	4	---	---
Small Fruits and Grapes (Pom 341)	---	3	---
Diseases of Livestock (VM 341)	4	---	---
Special Crop Work (FC 305)	---	3	---
Farm Accounting (FM 311)	3	---	---
Pruning (Pom 431)	---	3	---
Animal Breeding (PH 315)	---	3	---
Principles of Agricultural Breeding (FC 315)	---	---	3
Principles of Agricultural Marketing (AEc 441)	4	---	---
Rural Finance (AEc 431)	---	3	---

ANIMAL INDUSTRIES

Sophomore Year

Principles of Economics (Ec 201, 202, 203)	3	3	3
Organic Chemistry (Ch 221)	5	---	---
Elementary Journalism (J 111)	---	3	---
Forage and Root Crop Production (FC 211)	---	---	3
Elements of Dairying (DH 211)	3	---	---
General Bacteriology (Bac 204)	---	3	---
Principles of Farm Management (FM 211)	---	---	3
Anatomy of Domestic Animals (VM 211)	3	---	---
Physiology of Domestic Animals (VM 221, 222)	---	3	3
Stock Judging I (AH 111)	---	3	---
[1]Optional	---	---	3
Advanced Physical Education	1	1	1
Military Science	1	1	1
	16	17	17

Junior Year

Physiology of Domestic Animals (VM 321)	3	---	---
Parasitic Diseases of the Domestic Animal (VM 361)	---	3	---
Animal Nutrition (AH 411)	4	---	---
Animal Breeding (PH 315)	---	3	---
Farm Accounting (FM 311)	3	---	---
Soils (Sls 211, 212)	3	3	---
Soil Drainage and Irrigation (Sls 213)	---	---	3
Principles of Economic Entomology (Ent 211)	---	---	3
Electives	3	6	9
	16	15	15

Senior Year

Diseases of Livestock (VM 441, 442, 443)	3	3	3
Extempore Speaking (Sp 111)	3	---	---
Modern Governments (PS 201)	---	4	---
Electives	9	8	12
	15	15	15

[1]Students who desire to major in Dairy Manufacturing or who wish to prepare themselves for more technical training will be required to make certain substitutions in the curriculum of the sophomore year in consultation with the department head.

MAJOR ELECTIVES OFFERED

The following major electives are available in the several fields of the Division of Animal Industries. Students may select from these technical subjects and in addition should elect liberally from the fields of Agricultural Economics and Plant Industries. Students are expected to plan their courses with the advice of department or division head.

Junior Year	Term hours 1st	2d	3d
Animal Husbandry			
Breeds of Livestock I, II (AH 315, 316)	3	3	—
Meats (AH 326)	—	3	—
Stock Judging II (AH 311)	—	—	3
Feeds and Feeding (AH 412)	—	5	—
Wool and Mohair (AH 418)	—	—	3
Pedigree Study (AH 421)	—	—	3
Special Studies (AH 305)	—	—	—
Dairy Production			
Dairy Products Manufacturing (DH 312, 313, 314)	4	4	4
Dairy Herd Management (DH 322)	—	3	—
Market Milk (DH 311)	—	—	3
Special Studies (DH 305)	—	—	—
Dairy Manufacturing			
Electives from the Division of Agricultural Economics and carefully selected courses in Poultry and Animal Husbandry.			
Poultry Husbandry			
Anatomy of the Fowl (VM 311)	—	3	—
Diseases of Poultry (VM 351)	—	—	3
Poultry-house Design and Construction (PH 331)	—	4	—
Turkey Management (PH 351)	3	—	—
Incubation and Brooding (PH 321)	—	—	4
Senior Year			
Animal Husbandry			
Livestock Economics (AH 424)	—	—	5
Stock Judging III (AH 312)	4	—	—
Reproduction Problems (AH 353)	—	3	—
Livestock Practice (AH 319)	1	—	—
Livestock Practice (AH 320)	—	—	2
Special Studies (AH 305)	—	—	—
Dairy Production			
Seminar (DH 407)	1	1	1
Breeding Dairy Cattle (DH 421)	—	3	—
Dairy Technology (DH 411, 412, 413)	3	3	3
Milk Production (DH 422)	—	—	3
Special Studies (DH 405)	—	—	—
Dairy Manufacturing			
Electives from the Division of Agricultural Economics and carefully selected courses in Poultry and Animal Husbandry.			
Poultry Husbandry			
Poultry Feeding (PH 411)	4	—	—
Marketing Poultry Products (PH 421)	—	4	—
Poultry Plant Management (PH 431)	—	—	4
Advanced Poultry Judging (PH 341)	2	—	—
Poultry Breeding (Ph 441)	—	—	4

DAIRY MANUFACTURING

Junior Year

Dairy Products Manufacturing (DH 312, 313, 314)	4	4	4
Market Milk (DH 311)	—	—	3
Dairy Bacteriology (Bac 411, 412)	3	3	—
Agricultural and Biochemical Analysis in Specialized Fields (Ch 352)	—	3	—
Dairy Herd Management (DH 322)	—	3	—
Electives	9	3	9
	16	16	16

[1]Options—
Dairy Breed Types (DH 321), 3 term hours.
Dairy Products Standards (DH 315), 1 term hour.
Incubation and Brooding (PH 321), 4 term hours.
Stock Judging II (AH 311), 3 term hours.

Senior Year	Term hours 1st	2d	3d
Dairy Technology (DH 411, 412, 413)	3	3	3
Extempore Speaking (Sp 111)	3	---	---
Modern Governments (PS 201)	---	4	---
Electives	9	8	12
	15	15	15

PLANT INDUSTRIES

Sophomore Year

(For sophomore year in Landscape Maintenance, see page 159)

Principles of Economics (Ec 201, 202, 203)	3	3	3
Soils (Sls 211, 212)	3	3	---
Soil Drainage and Irrigation (Sls 213)	---	---	3
Organic Chemistry (Ch 221)	5	---	---
Principles of Farm Management (FM 211)	---	---	3
Principles of Plant Physiology (Bot 331)	---	---	4
Forage and Root Crop Production (FC 211)	3	---	---
General Bacteriology (Bac 204)	---	3	---
Elements of Dairying (DH 211)	---	3	---
Plant Propagation (Hrt 311)	---	3	---
Elective	---	---	1
Advanced Physical Education	1	1	1
Military Science	1	1	1
	16	17	16

Recommended Electives

Farm Crops			
Stock Judging	---	3	*or* 3
Principles of Economic Entomology (Ent 211)	---	---	3
Elementary Biochemistry (Ch 251)	---	5	---
Climatology (Sls 319)	---	---	2
Potato Growing (FC 311)	---	2	---
General Botany (Bot 203)	---	---	3
Horticulture			
Landscape Architecture (LA 279)	---	---	3
Elementary Biochemistry (Ch 251)	---	5	---
General Botany (Bot 203)	---	---	3
Soils			
Quantitative Analysis (Ch 232) *or* Elementary Biochemistry (Ch 251)	---	5	---
Climatology (Sls 319)	---	---	2

FARM CROPS

Junior Year

Cereal Production Lectures (FC 322)	3	---	---
Cereal Production Laboratory (FC 323)	2	---	---
Crop Inspection (FC 411)	---	5	---
Forage and Related Crops (FC 324)	---	---	3
Principles of Agricultural Breeding (FC 315)	---	---	3
Principles of Plant Pathology (Bot 351)	4	---	---
Farm Accounting (FM 311)	---	3	---
Elementary Journalism (J 111)	---	3	---
Animal Nutrition (AH 411)	---	---	4
[1]Electives	7	5	6
	16	16	16

Senior Year

Seed Production (FC 414)	3	---	---
Applied Plant Genetics (FC 330)	5	---	---
Extempore Speaking (Sp 111, 112)	---	3	3
Soil Fertility Lectures (Sls 425)	---	3	---
Crop Efficiency (FC 421)	---	---	5
Business Law (BA 256)	4	---	---
Modern Governments (PS 201)	---	4	---
Seminar (FC 407)	1	1	1
[1]Electives	3	5	7
	16	16	16

[1]Electives leading to production, agricultural teaching, research, extension, or commercial careers are chosen in conference with the head of the department.

HORTICULTURE: LANDSCAPE MAINTENANCE

Sophomore Year	Term hours 1st	2d	3d
Principles of Economics (Ec 201, 202, 203)	3	3	3
Landscape Architecture (LA 279)	---	3	---
Organic Chemistry (Ch 221)	5	---	---
Principles of Plant Physiology (Bot 331)	---	---	4
Home Planning and Architectural Drawing (AA 178, 179, 180)	2	2	2
Unified Mathematics (Mth 102)	---	---	4
Lower Division Drawing (AA 291)	3	3	---
Soils (Sls 211, 212), Soil Drainage and Irrigation (Sls 213)	3	3	3
Military Science	1	1	1
Advanced Physical Education	1	1	1
	18	16	18
Junior Year			
Plane Surveying (CE 226, 223)	3	---	3
Plant Materials (LA 326, 327, 328)	3	3	3
Principles of Plant Pathology (Bot 351)	4	---	---
Principles of Economic Entomology (Ent 211)	---	3	---
Plant Propagation (Hrt 311)	---	3	---
Layout of Small Properties (LA 382, 383, 384)	3	3	3
Constructive Accounting (BA 111)	---	---	4
Electives	3	3	3
	16	15	16
Senior Year			
General Bacteriology (Bac 204)	3	---	---
Spraying (Pom 419)	---	---	3
Maintenance and Construction (LA 359, 360, 361)	2	2	2
Pruning (Pom 431)	---	3	---
History and Literature of Landscape Architecture (LA 356, 357, 358)	2	2	2
Greenhouse Crops (Hrt 313)	---	3	---
Greenhouse Crop Practices (Hrt 314)	---	---	3
Planting Plans (LA 392, 393, 394)	2	2	2
Modern Governments (PS 201)	4	---	---
Electives	3	3	3
	16	15	15

HORTICULTURE: POMOLOGY

Junior Year	1st	2d	3d
Principles of Plant Pathology (Bot 351)	4	---	---
Commercial Pomology (Pom 313)	4	---	---
History and Literature of Horticulture (Pom 312)	---	3	---
Principles of Economic Entomology (Ent 211)	---	3	---
Fruit Production (Pom 415)	---	---	4
Farm Accounting (FM 311)	---	3	---
Principles of Agricultural Breeding (FC 315)	---	---	3
Bee Culture (Ent 235)	---	---	3
Plant Pathological Technique (Bot 451)	3	---	---
Electives	4	6	6
	15	15	16
Electives			
Subtropical Pomology (Pom 321)	---	3	---
Small Fruits and Grapes (Pom 341)	---	3	---
Systematic Botany (Bot 303)	---	---	4
Elements of Dairying (DH 211)	3	---	---
Principles of Vegetable Production (VC 321)	3	---	---
Feeds and Feeding (AH 412)	---	5	---
French or German	3–4	3–4	3–4
Senior Year			
Dehydration of Fruits and Vegetables (HP 331)	3	---	---
Systematic Pomology (Pom 417)	4	---	---
Pruning (Pom 431)	---	3	---
Economic Entomology (Ent 411)	3	---	---
Extempore Speaking (Sp 111)	3	---	---
Modern Governments (PS 201)	---	---	4
Spraying (Pom 419)	---	---	3
Seminar (Hrt 407)	---	1	1
Electives	3	11	7
	16	15	15

Electives	Term hours 1st	2d	3d
Methods of Research (Hrt 411)	—	3	—
Small Fruits and Grapes (Pom 341)	—	3	—
Enterprise Costs and Profits (FM 414)	—	—	3
Applied Plant Genetics (FC 330)	5	—	—
Refrigeration (ME 462)	—	—	3

HORTICULTURE: VEGETABLE CROPS

Junior Year

Principles of Plant Pathology (Bot 351)	4	—	—
Farm Accounting (FM 311)	—	3	—
Principles of Agricultural Breeding (FC 315)	—	—	3
Principles of Economic Entomology (Ent 211)	—	3	—
History and Literature of Horticulture (Pom 312)	—	3	—
Bee Culture (Ent 235)	—	—	3
Principles of Vegetable Production (VC 321)	3	—	—
Vegetable Growing Practices (VC 323)	—	—	3
Plant Propagation (Hrt 311)	—	3	—
Electives	9	4	7
	16	16	16

Electives

Fruit Production (Pom 415)	—	—	4
Potato Growing (FC 311)	—	2	—
Principles of Canning Vegetables (HP 252)	—	—	3
Agricultural Statistics (AEc 221)	—	3	—
French or German	3–4	3–4	3–4
Plant Pathological Technique (Bot 451)	3	—	—

Senior Year

Extempore Speaking (Sp 111)	3	—	—
Modern Governments (PS 201)	—	4	—
Vegetable Forcing (VC 325)	—	—	3
Vegetable Varieties (VC 423)	2	—	—
Vegetable Marketing (VC 424)	3	—	—
Seminar (Hrt 407)	1	1	1
Electives	7	11	12
	16	16	16

Electives

Refrigeration (ME 462)	—	—	3
Methods of Research (Hrt 411)	—	3	—
Enterprise Costs and Profits (FM 414)	—	—	3
Applied Plant Genetics (FC 330)	5	—	—
Systematic Botany (Bot 303)	—	—	4
Greenhouse Construction and Management (Hrt 312)	3	—	—
Greenhouse Crops (Hrt 313)	—	3	—
Greenhouse Crop Practices (Hrt 314)	—	—	3

SOILS

Junior Year

Principles of Agricultural Breeding (FC 315)	—	—	3
Animal Nutrition (AH 411) *or* Fruit Production (Pom 415)	—	—	4
Farm Accounting (FM 311)	—	3	—
Farm Motors and Tractors (AE 318)	3	—	—
Irrigation Farming (Sls 311)	3	—	—
Western Land and Water Laws (Sls 411)	—	3	—
Soil Survey (Sls 327)	—	—	3
Soil Bacteriology (Bac 421)	4	—	—
Agricultural Land Economics (FM 416)	—	3	—
Principles of Economic Entomology (Ent 211)	—	—	3
Elementary Journalism (J 111)	—	3	—
Electives	6	4	3
	16	16	16

Senior Year

Extempore Speaking (Sp 111)	3	—	—
Modern Governments (PS 201)	—	4	—
Soil Physics (Sls 421)	5	—	—
Soil Fertility (Sls 424)	—	5	—
Soil Management (Sls 428)	—	—	5
Irrigation Investigations (Sls 414)	3	—	—
Seminar (Sls 407)	1	1	1
Electives	4	6	10
	16	16	16

Electives	Term hours 1st	2d	3d
General Physics (Ph 201, 202)	4	4	—
Geology (G 201)	3 *or*	3	—
Elementary Psychology (Psy 201), Secondary Education (Ed 311), Principles of Teaching (Ed 313)	3	3	3

B. Curriculum in Agricultural Engineering

B.S. Degree

Freshman Year	Term hours 1st	2d	3d
English Composition (Eng 111, 112, 113)	3	3	3
Unified Mathematics (Mth 101, 102, 103)	4	4	4
Engineering Physics (Ph 111, 112, 113)	3	3	3
Engineering Problems (GE 101)	2	—	—
Linear Drawing and Lettering (GE 111)	—	2	—
Elementary Mechanical Drawing (GE 112)	—	—	2
Agricultural Engineering Survey (AE 101, 102)	3	3	—
Cereal Production (FC 111)	—	—	3
Military Science	1	1	1
[1]Physical Education	1	1	1
	17	17	17
Sophomore Year			
Principles of Economics (Ec 201, 202, 203)	3	3	3
Elementary General Chemistry (Ch 201, 202, 203)	3	3	3
Soils (Sls 211, 212)	3	3	—
Machine Shop (IA 163)	—	—	3
Farm Implements (AE 231)	—	—	3
Farm Construction (Farm Shop I) (AE 221)	3	—	—
Farm Equipment Repair (Farm Shop II) (AE 222)	—	3	—
Agricultural Resources (AEc 111)	3	—	—
Elements of Dairying (DH 211)	—	3	—
Principles of Farm Management (FM 211)	—	—	3
Military Science	1	1	1
Advanced Physical Education	1	1	1
	17	17	17
Junior Year			
Mechanics (ME 212, 213)	3	3	—
Steam, Air, and Gas Power (ME 346)	—	—	3
Farm Motors and Tractors (AE 318)	—	3	—
Automobile Mechanics (AE 313)	—	—	3
Structural Analysis (CE 381)	4	—	—
Electives	8	9	9
	15	15	15

Recommended Electives	Term hours
Livestock Management I (AH 221)	3
General Bacteriology (Bac 204)	3
Stock Judging I (AH 111)	3
Elementary Journalism (J 111)	3
Materials of Engineering (MM 311)	3
Extempore Speaking (Sp 111)	3
Weed Eradication (FC 317)	2
Irrigation Farming (Sls 311)	3
Land Drainage (Sls 418)	3
Agricultural Economics (AEc 211)	3
Plane Surveying (CE 226)	3

Senior Year	Term hours 1st	2d	3d
Hydraulics (CE 311)	3	—	—
Industrial Electricity (EE 351, 352)	3	3	—
Pumps and Water Systems (AE 321)	—	—	3
Rural Electrification (AE 331)	—	—	3
Farm Structures (AE 361)	—	—	3
Research (AE 305)	3	3	3
Electives	6	9	3
	15	15	15

[1]General Hygiene, 2 term hours, is taken one term in place of Physical Education.

Recommended Electives

	Term hours
Spraying (Pom 419)	3
Forage and Root Crop Production (FC 211)	3
Journalism	—
Modern Governments (PS 201)	4
Principles of Accounting for Engineers (BA 385)	3
Farm Accounting (FM 311)	3
Land Clearing (AE 341)	2
Farm Organization (FM 411)	3
Soil Physics (Sls 422)	3
Irrigation Investigations (Sls 414)	3
Rural Finance (AEc 431)	3

C. Curriculum in Horticultural Products (Horticulture)

B.S. Degree

Freshman Year

	Term hours 1st	2d	3d
English Composition (Eng 111, 112, 113)	3	3	3
Elementary General Chemistry (Ch 201, 202, 203)	3	3	3
General Botany (Bot 201, 202, 203)	3	3	3
General Physics (Ph 201, 202, 203)	4	4	4
Agricultural Resources (AEc 111)	3	—	—
Elements of Horticulture (Hrt 111)	—	—	3
Military Science	1	1	1
[1]Physical Education	1	1	1
	18	15	18

Sophomore Year

Principles of Economics (Ec 201, 202, 203)	3	3	3
Elementary Journalism (J 111)	—	—	3
Extempore Speaking (Sp 111)	—	—	3
Landscape Architecture (LA 279)	—	—	3
Organic Chemistry (Ch 221)	5	—	—
Elementary Biochemistry (Ch 251)	—	5	—
Business Law (BA 256, 257)	4	4	—
Principles of Food Preservation (HP 250)	3	—	—
Principles of Canning Fruits (HP 251)	—	3	—
Principles of Canning Vegetables (HP 252)	—	—	3
Military Science	1	1	1
Advanced Physical Education	1	1	1
	17	17	17

Junior Year

General Bacteriology (Bac 204, 205, 206)	3	3	3
Principles of Plant Pathology (Bot 351)	4	—	—
Principles of Plant Physiology (Bot 331)	—	—	4
Dehydration of Fruits and Vegetables (HP 331)	3	—	—
Pickles, Relishes, and Condiments (HP 341)	3	—	—
Fruit Production (Pom 415)	—	—	4
Modern Governments (PS 201)	—	4	—
Elements of Organization and Production (BA 221)	—	4	—
Electives	3	5	5
	16	16	16

Recommended Electives

Labor Problems (Ec 405)	4	—	—
Money and Banking (Ec 413)	—	—	4
The Canning Plant and Its Equipment (HP 311)	—	—	3
French or German	—	—	—

[1]General Hygiene, 2 term hours, is taken one term in place of Physical Education.

Senior Year	Term hours 1st	2d	3d
Principles of Accounting for Engineers (BA 385)	---	3	---
Fruit Juice and Vinegar Manufacture (HP 351)	3	---	---
Commercial Jam and Jelly Manufacture (HP 352)	---	3	---
Preserves, Glacéd Fruits, and Candied Fruits (HP 361)	---	---	3
Commercial Pomology (Pom 313)	4	---	---
Seminar (Hrt 407)	1	1	1
Electives	6	7	10
	14	14	14
Recommended Electives			
Refrigeration (ME 462)	---	---	3
Vegetable Crops for Canning (VC 322)	---	3	---
Methods of Research (Hrt 411)	---	3	---
Special Problems in Horticulture (Hrt 405)	---	---	---
French or German	---	---	---

D. Curriculum in Agricultural Technology

B.S. Degree

Freshman Year	Term hours 1st	2d	3d
English Composition (Eng 111, 112, 113)	3	3	3
Elementary General Chemistry (Ch 201, 202, 203)	3	3	3
General Zoology (Z 201, 202, 203) *or* General Botany (Bot 201, 202, 203)	3	3	3
Unified Mathematics (Mth 101, 102, 103) *or* Lower division agricultural courses	4	4	4
Electives (Lower division agriculture courses)	2	2	2
[1]Physical Education	1	1	1
Military Science	1	1	1
	17	17	17
Sophomore Year			
Principles of Economics (Ec 201, 202, 203)	3	3	3
Organic Chemistry (Ch 221)	5	---	---
Genetics (Z 314)	3	---	---
General Bacteriology (Bac 204)	---	3	---
Lower Division Science Elective (Sequence courses)	3	3–5	3–8
Agricultural Electives from courses numbered 211 to 299	---	4–6	4–9
Advanced Physical Education	1	1	1
Military Science	1	1	1
	16	16	16
Junior and Senior Years			
Extempore Speaking (Sp 111)	3	---	---
Elementary Journalism (J 111)	---	3	---
Modern Governments (PS 201, 202)	4	4	---
[2]Electives	24	24	31
	31	31	31

Agricultural Economics

DESIGNED primarily to meet the needs of students interested in the business side of agriculture and its broader economic relationships, the department of Agricultural Economics offers in addition sufficient work in agricultural science and technique to give the student a scientific concept of the industry.

The growth of agriculture into a vast commercial industry and the increasing maze of economic, financial, and marketing problems accompany-

[1]General Hygiene, 2 term hours, is taken one term in place of Physical Education.

[2]Not less than 24 hours of upper division courses in Agriculture including 3 hours of Seminar.

ing that development are opening up attractive opportunities to well-trained students in agricultural economics. The curriculum (page 154) not only affords excellent preparation for those who intend to farm and assume positions of business, educational, and communtiy leadership, but also gives the basic training needed for professional careers as teachers, research workers, and extension specialists. It lays a foundation for a business career in connection with farmers' buying and selling associations, real estate and farm mortgage companies, banks, brokerage, jobbing, wholesale, and retail houses, and expert business service for the agricultural field. It should give the best possible training for positions as county agricultural agents, secretaries of chambers of commerce, and agricultural advisers to business houses or railway companies where aggressive qualities of leadership and an intimate knowledge of town and country relations are required.

In order that the student may have ample opportunity to acquire the broad and liberal training requisite for entry into many of these occupations, ample electives are provided for in the junior and senior years.

The practical character of instruction in agricultural economics is enhanced by the extension and research activities conducted by this department. Through the Agricultural Experiment Station investigations dealing with (a) rural taxation, (b) cooperative marketing, and (c) economic trends and the market situation and outlook for Oregon's leading agricultural commodities are being conducted.

Through the Extension Service, market news and agricultural situation and outlook material is disseminated to farmers and others who manifest an interest in receiving such information. Special attention is also given to the needs of agricultural cooperation in the state. Technical assistance is placed at the disposal of farmers in planning, promoting, organizing, financing, and managing cooperatives.

DESCRIPTION OF COURSES

LOWER DIVISION COURSES

AEc 111. **Agricultural Resources.** First term, 3 hours.

A study of the agricultural resources of the world, with special reference to the resources of the United States and of the State of Oregon. A broad survey of agriculture, including soil, climate, topography, institutions, and population. Three recitations. Professor Potter.

AEc 211. **Agricultural Economics.** Third term, 3 hours.

Fundamental principles of production, consumption, and distribution with special reference to agriculture; land tenure; land values; the law of proportions; pricemaking processes; money; banking; rural credit; cooperation; marketing; transportation; taxation; rent, interest, wages, and profits. Three recitations. Professor Potter.

AEc 221. **Agricultural Statistics.** Second term, 3 hours.

Sources of business and agricultural statistics; study of statistical devices used in the fields of business and agriculture, such as indices, trends, seasons; problems involved in comparing statistical results. Three recitations. Professor Nelson.

UPPER DIVISION COURSES

AEc 307. **Seminar.** Three terms, 1 hour each term.
Study of current topics in agricultural economics. Required of juniors in Agricultural Economics. Professor Nelson.

AEc 311. **Cooperation and Farmers' Movements.** Third term, 3 hours.
A review of the fundamentals of cooperation followed by a discussion of agrarian organizations such as the Grange, Farmers' Union, American Society of Equity, the Gleaners, Farm Bureau, Non-partisan League, and cooperative organizations for production, distribution, consumption, and credit purposes. Prerequisite: AEc 211. Three recitations. Professor Nelson.

AEc 331. **Economic Development of Agriculture.** Third term, 3 hours.
The evolution of the economic organization starting with the earliest stages in Roman and medieval times, but with special attention given to later agriculture in Europe and in America. Methods of agricultural production and marketing, types of farming, and systems of tenure are traced historically. Prerequisite: AEc 211. Three recitations. Professor Nelson.

AEc 407. **Seminar.** Three terms, 1 hour each term.
Study of current topics in agricultural economics. Required of seniors in Agricultural Economics. Professor Nelson.

AEc 411. **Cooperative Marketing Organization.** Third term, 3 hours.
Principles of organization, management, and operation of cooperative marketing associations; application to the various types of agricultural commodities. Emphasis on types of organization and methods of formation, financial and operating policies, membership relations, marketing machinery and functions, sales methods and policies, and public relations. Prerequisite: AEc 441. Three recitations. Professor Nelson.

AEc 421. **Land Economics.** First term, 3 hours.
Deals with the underlying principles pertaining to urban, agricultural, mineral, forest, and other types of land in their social setting. Attention is focused on land resources, their classification, valuation, and use and related problems of finance and taxation. Prerequisite: Ec 203. Three recitations. Professor Nelson.

AEc 431. **Rural Finance.** Second term, 3 hours.
Fundamental principles of credit and finance as applied to agriculture; the credit requirements of agriculture; existing agencies for supplying credit and ways and means of utilizing them; strength and weakness of present credit system and proposals for reform. Offered alternate years. Prerequisite: Ec 203; junior or senior standing. Three recitations. Professor Potter.

AEc 433. **Land Taxation.** Second term, 3 hours.
A critical study of the present system of land assessment and taxation; tax burden of real property compared with tax burden of

personal property, tangible and intangible; study of methods of taxing mineral wealth, forests, and water-power; analysis of effects of changes in taxation system. Prerequisite: Ec 203 or equivalent. Three recitations. Professor Dreesen.

AEc 441. **Principles of Agricultural Marketing.** First term, 4 hours.
A critical study of the marketing of staples, semi-staples, and perishable farm products, including the geographical location of producing areas, marketing routes from the producer to the consumer, types of middlemen, direct marketing, marketing costs, standardization, factors influencing prices, and a general description of our whole marketing system as it exists today. Prerequisite: Ec 203. Four recitions. Professor Nelson.

AEc 451. **Agricultural Prices.** Third term, 3 hours.
The purpose is to analyze trends of farm and market prices; compare prices of agricultural commodities with non-agricultural products and consider prices in their relation to production and marketing programs. The State and National agricultural situation and outlook will receive special attention. Prerequisite: Ec 203 or 211, AEc 441. Three lectures.

GRADUATE COURSES

AEc 501. **Graduate Research.** Three terms, hours to be arranged.
Opportunity is given students to undertake, under the direction of one of the instructors in the department, the study and investigation of special problems related to agricultural economics and rural sociology.

AEc 503. **Graduate Thesis.** Three terms, hours to be arranged.
The preparation of a thesis for an advanced degree.

AEc 507. **Seminar.** Three terms, 1 hour each term.
Study of current topics in agricultural economics. Professor Nelson.

Agricultural Education

THIS department is responsible for the training of teachers and supervisors of agriculture in elementary and secondary schools, and the training for leadership in rural life and education. Special attention is given to the training of directors, supervisors, and teachers of agriculture as provided for by the Federal law for vocational education known as the Smith-Hughes Act. Certain field studies and extension activities are included within the scope of this department's work.

The department of Agricultural Education is a joint department within both the School of Agriculture and the School of Education.

Preparation for Teaching Agriculture. Teachers of agriculture need to have a fundamental knowledge and a high level of doing ability in most of the departmental fields of the School of Agriculture. In order to increase the number of electives that can be taken during a four-year period, courses

in Psychology and Education may be taken in the Summer Session prior to the junior or senior year.

Former graduates of the School of Agriculture may prepare themselves very satisfactorily for teaching agriculture by returning for a fifth year of work during which they can elect certain courses in Agriculture that are fundamental for teaching and also complete the required courses in Education.

Requirements in Agriculture.

(1) Graduation from a college of agriculture of standard rank.

(2) The course requirements in Agriculture and Education (for Smith-Hughes teaching) can be met in either of two ways: first, by majoring in the Agricultural Education curriculum, which includes requirements in both Agriculture and Education; second, by pursuing one of the three other curricula in Agriculture in the sophomore year and any of the major curricula in General and Specialized Agriculture during the junior and senior years. The latter plan will be approved, provided sufficient electives are available for meeting the course requirements in Agriculture as outlined in the Agricultural Education curriculum on pages 155-156, as well as the 23 credits in Education.

(3) Depending on the student's previous training and experience and his choice of courses, 70 to 75 term hours of special work in Agriculture are required. The sequence and distribution of courses are given in the Agricultural Education curriculum. Regardless of the department in which the student majors he should have a minimum of subject-matter courses in the respective departments as follows:

(a) 9 hours in Agricultural Engineering
(b) 7 hours in Animal Husbandry
(c) 6 hours in Dairy Husbandry
(d) 6 hours in Horticulture
(e) 6 hours in Farm Crops
(f) 9 hours in Farm Management and Agricultural Economics
(g) 6 hours in Soils
(h) 3 hours in Poultry Husbandry
(i) 3 hours in Veterinary Medicine

As early as possible in his college course the prospective teacher should advise with the head of the Department of Agricultural Education regarding the courses he should select in each of the fields of agriculture mentioned above and the various qualifications essential in teaching vocational agriculture.

Requirements in Education. The courses in Education and Psychology required for state certification are described under School of Education. The sequence and distribution of these courses are as follows:

Junior Year	Term hours		
	1st	2d	3d
[1]Educational Psychology (Ed 312)	3	---	---
Secondary Education (Ed 311)	---	3	---
Principles of Teaching (Ed 313)	---	---	3

[1]Ed 312 must be preceded by Psy 211.

Senior Year	Term hours 1st	2d	3d
Special Methods in Agriculture (Ed 328)	5	----	----
[1]Supervised Teaching (Ed 315)	----	3	3
Methods in Teaching Evening and Part-Time Classes in Agriculture (AEd 313)	----	2	----
Rural Survey Methods (AEd 533)	----	----	2

Special Curricula in Agricultural Education will be outlined for students preparing to teach agriculture in city schools or a combination of subjects including Agriculture as requested in the smaller rural high schools. See School of Education section of the catalog for curriculum suggestion.

General Electives. Certain courses are open to all students in Agriculture and others who are interested in training for leadership in rural life. Special attention is called to Ed 341, Rural Education.

Graduate Study in Agricultural Education. Since the demands on teachers of agriculture the country over are becoming more exacting each year, graduate work in the fields of agriculture and education is desirable, and usually necessary for those who desire to enter the fields of supervision or teacher training. Programs of work leading to the master's degree are outlined by this department for students and teachers with approved standing.

DESCRIPTION OF COURSES

UPPER DIVISION COURSES

AEd 313. **Methods in Teaching Evening and Part-Time Classes in Agriculture.** Second term, 2 hours.

Students in this course participate in recruiting, organizing, and teaching evening and part-time classes for both young and adult farmers in the vicinity of Corvallis. Problems arising therefrom form the basis of the course. Prerequisite: Ed 328.

Ed 321. **Teaching General Agriculture and Related Science.** Second term, 3 hours.

For prospective teachers of science who may wish to be in a position to offer a separate course in agriculture or to strengthen their science teaching by the utilization of the materials in agriculture well adapted to apply the principles and laws of science commonly operative in the student's natural environment; aims, materials, methods. Three recitations. Prerequisite: Ed 311, 312, 313. Professor Gibson.

Ed 328. **Special Methods in Agriculture.** First term, 5 hours.

Problems and methods of organizing and teaching vocational agriculture in high schools, in accordance with the provisions of state and federal legislation. Prerequisite: Ed 313. Five recitations. Professor Gibson.

Ed 341. **Rural Education.** Second term, 3 hours.

Open to all students, prospective high school teachers, and others alike, who desire to acquire some foundation for a philosophy of rural life, and training for leadership in rural education. New methods of utilizing the student's rural, social, and economic environment as a

[1]Ed 315 may be taken any two terms.

means of vitalizing different phases of the high school instruction, achieving social objectives of education, and increaseing farm, home, and town-country efficiencies. Various forms of continuation and rural extension education for out-of-school youth and adults. Students in this course will actively participate in planning and executing studies and programs in rural education for high school pupils, out-of-school youth, and adults. Prerequisite: junior standing. Three recitations. Professor Gibson.

Ed 407. **Education Seminar.** Two terms, hours to be arranged.
Class and individual studies and reports on special problems in the teaching of agriculture and the administration of Agricultural Education. Prerequisite: Ed 311, 312, 313; 328. Professor Gibson.

GRADUATE COURSES

Ed 501. **Educational Research.** Terms and hours to be arranged.
Advanced and graduate students may select special problems which they are qualified to study. Ability to select and outline such problems will be a condition for taking this work. Professor Gibson.

Ed 503. **Thesis.** Terms and hours to be arranged.
The preparation of a thesis for an advanced degree.

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

AEd 516. **Extension Course in Teacher Training.** Any term, hours to be arranged.
Teachers of vocational agriculture in service who cannot be relieved of their professional duties to pursue courses that are offered in the Summer Session may make use of this course to continue their professional improvement. Personal conferences, follow-up instruction, and supervision, supplemented by correspondence and reports. Prerequisite: Ed 311, 312, 313; 328. Professor Gibson.

AEd 533. **Rural Survey Methods.** Third term, 2 hours.
The technique of making agricultural and rural education surveys, together with methods of analyzing, interpreting, and using the material and results as a basis for evaluating and formulating programs in Agricultural Education. Field studies required. Open to graduates with teaching experience and seniors by special permission. Prerequisite: Ed 311, 312, 313; 328. Professor Gibson.

Agricultural Engineering

THIS department offers two types of instruction: (1) a major curriculum in Agricultural Engineering (page 161) and (2) service courses for students majoring in other departments. The technical major is planned to give training in the application of engineering to agriculture. Phases of the work include farm equipment, farm power, farm structures, and the relation of electricity to agriculture. The sciences fundamental to engineering and agriculture, including mathematics, physics, chemistry, and eco-

nomics, serve as a basis for practical work in agriculture and agricultural engineering. Opportunity is given to elect non-technical work of cultural value.

Graduates are fitted for design and sales opportunities with farm equipment concerns, for positions with public utility companies, in Smith-Hughes teaching, as county agents, in consulting agricultural engineering, in research, or as effective farm operators.

The increasing importance of modern equipment in reducing cost of production, together with the desirability of improving rural living conditions, demands, in any branch of agriculture, a more complete and effective grasp of agricultural engineering. Students majoring in other departments who recognize the need for a knowledge of farm shop, farm implements, farm gas engines, tractors and automobile mechanics, building materials, and home conveniences may elect non-technical courses in Agricultural Engineering.

Equipment. The most up-to-date equipment is lent the institution by the leading implement dealers of the Northwest, so that the student has constantly before him and is working with and studying the very best equipment of all types. The large, well-lighted gas-engine laboratory contains many different makes of gas engines, trucks and tractors, and accessories, such as sectional carburetors, magnetos, and lubricators.

The laboratory is also equipped with two large brakes for the testing of tractors, dynamometers for determining the draft of the field machines and the draw-bar horse-power of tractors, a gas and steam indicator for determining the efficiency of farm engines and tractors, and electric motors and measuring devices, so that the student may become familiar with the power requirements of belt-driven farm machines. Many tractors of the latest design are available for use of the students in the laboratory and in the field.

Light and water systems, septic tanks, and other equipment for the farm home are installed in the Farm Conveniences laboratory. The design of farm structures and graphic methods are taught in a room provided with filing cases, blue-printing equipment, and individual drafting tables.

DESCRIPTION OF COURSES

LOWER DIVISION COURSES

AE 101, 102. **Agricultural Engineering Survey.** First and second terms, 3 hours each term.

A survey of the field of Agricultural Engineering; the application of principles of mathematics and physics to the solution of agricultural problems. For students majoring in Agricultural Engineering. One lecture; 2 two-hour laboratory periods.

AE 111. **Agricultural Engineering.** Second or third term, 3 hours.

Principles of mechanics, hydraulics, and electricity as applied to farm problems; mathematics essential to agriculture. One lecture; 2 two-hour laboratory periods.

AE 221. **Farm Construction (Farm Shop I).** First term, 3 hours.

Farm drawing, reading blue-prints, and estimating materials; farm building costs, construction of gates, fences, feeders, and various farm

buildings, types of farm buildings and their construction, building specifications, tool sharpening, farm shop equipment, painting and glazing. One recitation; 2 three-hour laboratory periods.

AE 222. **Farm Equipment Repair (Farm Shop II).** Second term, 3 hours.
Repairing farm machinery and farm equipment, care of farm tools, farm repair shop and equipment. Soldering, babbitting, bearings, hot and cold metal work, oxyacetylene welding, taps and dies and pipe work. One recitation; 2 three-hour laboratory periods.

AE 231. **Farm Implements.** Third term, 3 hours.
Study of the latest horse- and tractor-drawn farm implements, plows and their adjustments and hitches, cultivating machinery, seeding and planting machines, hay- and grain-cutting machines, and manure spreaders; fences and roads; adjustment of machines. One recitation; 2 two-hour laboratory periods.

UPPER DIVISION COURSES

AE 305. **Research.** Term and hours to be arranged.
Original investigation of some current agricultural engineering problem.

AE 311. **Graphic Methods.** Second term, 2 hours.
Plotting and charting of figures and statistics relating chiefly to agricultural subjects; analyzing such material, putting it into a form which is easily read and understood, and charting the material in an attractive manner; use of drawing instruments. Two three-hour laboratory periods.

AE 312. **Automobile Mechanics.** Any term, 3 hours.
A detailed survey of the automobile and its parts; their functions, adjustment and simple repairs; advantages and disadvantages of different features in automobile construction; latest developments in the automotive field. This course is designed for the student who wishes to understand the principles of automobile operation together with simple repairs and adjustments which the operator of an automobile may have occasion to make. Two recitations; 1 three-hour laboratory period.

AE 313. **Automobile Mechanics.** Any term, 3 hours.
Practical work in overhauling and repairing automobiles, tractors, and trucks, involving disassembling and assembling of parts, testing for and locating troubles, making replacements and repairs. Lectures, demonstrations, class discussions, and laboratory work. Prerequisite: AE 318 or 312. One recitation; 2 three-hour laboratory periods.

AE 314. **Automobile Mechanics.** Third term, 3 hours.
(Advanced course.) A continuation of AE 313 for students who wish to acquire additional skill and information relative to automobile repairing and overhauling, especially those intending to teach automobile mechanics. Prerequisite: AE 318 or 312, and AE 313. Two recitations; 1 three-hour laboratory period.

AE 318. **Farm Motors and Tractors.** Any term, 3 hours.
The principle, construction, operation, and adjustment of farm

motors and accessories, carburetors, magnetos, ignition, governing, cooling, and lubricating systems; fuels and oils; testing, timing, and trouble hunting of farm gas motors, such as are used in the tractor, truck, automobile, and stationary outfits. Two recitations; 1 three-hour laboratory period.

AE 321. **Pumps and Water Systems.** Third term, 3 hours.
The study, operation, and testing of different types of pumps, irrigation equipment, and farm water supply systems, farm sewage disposal and plumbing. Farm spray pumps and equipment, water wheels and farm water-power development. Prerequisite: AE 111. Two recitations; 1 three-hour laboratory period.

AE 331. **Rural Electrification.** Third term, 3 hours.
Uses of electricity on the farm. Farm electric lighting plants. Rural line extension policies. Farm wiring, study of farm electric motors and equipment such as water heaters, cooling, sterilizing, and refrigerating equipment. Prerequisite: AE 111. Two recitations; 1 three-hour laboratory period.

AE 341. **Land Clearing.** Second term, 2 hours.
The use of explosives, hand stump-pullers, horse pullers; tractor and donkey engine for removing stumps, char-pitting, stump burning, and chemical treatment; what is being done in other states; clearing, terracing, and leveling of lands. One recitation; 1 three-hour laboratory period.

AE 351. **Orchard Machinery.** Third term, 3 hours.
Construction, operation, and adjustment of orchard machinery, such as gas engine, pump, tillage and seeding implements; orchard plowing and cultivation; demonstration of tractors for orchard work. Intended for students in Horticulture. Two recitations; 1 three-hour laboratory period.

AE 361. **Farm Structures.** Third term, 3 hours.
Planning of all farm buildings, fences, etc.; building materials; types of construction; lighting; ventilating; heating; plans, specifications, and estimated costs; designing of farm equipment. Prerequisite: AE 221 or equivalent. One recitation; 2 three-hour laboratory periods.

AE 407. **Seminar.** Terms and hours to be arranged.
Special problems in Agricultural Engineering assigned to students for independent study and research; preparation of papers and reports on recent developments in Agricultural Engineering. For senior and graduate students. Prerequisite: fourteen term hours in Agricultural Engineering or equivalent.

Animal Husbandry

COURSES in animal husbandry are planned to fit the student for the actual raising of livestock on the farm so that he may produce the highest grade of stock in the most economical and business-like manner. The student is thoroughly grounded in the underlying principles

in order that he may successfully continue his study after leaving college, but the practical details are also thoroughly treated and a special effort is made to keep the student in close touch with the financial phases of the industry. Students who take this work as their specialty are expected not to devote their entire time to livestock; but, on the contrary, to familiarize themselves with veterinary science, crop production, soil fertility, range botany, and other phases of agriculture as well as general education subjects. Much work in economics and marketing is also expected.

Students majoring in Animal Husbandry (see curriculum, pages 156-157) must have had considerable practical experience in farming and stock raising before they may be graduated. The nature and extent of the experience required is left to the judgment of the head of the department. Students are given a very free range of electives so that they may fit their programs to their own particular needs.

Students not majoring in Animal Husbandry but desiring to elect some work in the department will be given careful attention to see that they get just the work fitted to their individual needs.

Equipment. The equipment of the Department of Animal Husbandry consists essentially of livestock, barns, and the College stock farms. The department maintains good representatives of all the leading breeds. The department has adequate equipment for the conduct of laboratory, lecture, and recitation work. Attention is called to courses and equipment in Veterinary Medicine listed elsewhere.

DESCRIPTION OF COURSES

LOWER DIVISION COURSES

AH 111. **Stock Judging I.** Second or third term, 3 hours.

The various types of farm animals are studied by score cards and comparative methods, and the student is made familiar with the desirable and undesirable types of beef and dairy cattle, sheep, swine, and horses. Three two-hour laboratory periods.

AH 221. **Livestock Management I.** First or third term, 3 hours.

Practical details of the care and management of livestock, stabling, grooming, sanitation, practical feeding, and kindred details of livestock farming, all with special reference to western conditions. Two recitations; 1 two-hour laboratory period. Professor Nelson.

UPPER DIVISION COURSES

AH 305. **Special Studies.** Any term, hours to be arranged.

The student selects some topic for individual investigation by library methods or otherwise. The object is: first, to allow the student to study some particular subject in which he is especially interested; and second, to give him training in working out problems for himself, such as he will have to undertake after leaving college. Professor Nelson.

AH 311. **Stock Judging II.** Third term, 3 hours.

Course in judging all kinds of stock, particularly market types. Prerequisite: AH 111. Three two-hour laboratory periods. Assistant Professor Rodenwold.

AH 312. **Stock Judging III.** First term, 4 hours.

Practical judging of all kinds of livestock, with occasional trips to fairs and stock farms. Judging teams for the Pacific International Stock Show are chosen largely from among the members of this class. Prerequisite: at least three credits in stock judging. Four two-hour laboratory periods. Assistant Professor Rodenwold.

AH 315, 316. **Breeds of Livestock I, II.** First and second terms, 3 hours each term.

First term deals with the breeds of sheep and beef cattle, their development, breeding, type, and best uses. Second term deals with the breeds of horses and swine, their development, breeding, type, and uses. Prerequisite: AH 111. Three recitations. Professor Nelson, Assistant Professors Oliver and Rodenwold.

AH 319. **Livestock Practice.** First term, 1 hour.

Laboratory practice in such work as dipping, dehorning, hoof trimming, shearing, horse training, and other common operations of the stock farm. (Note: The department reserves the right to limit the number of students in this course.) One two-hour laboratory period. Assistant Professor Oliver.

AH 320. **Livestock Practice.** Third term, 2 hours.

A continuation of AH 319. Two two-hour laboratory periods.

AH 323. **Reproduction Problems.** Second term, 3 hours.

A study of the breeding efficiency of livestock, covering the effect of nutritional, genetic, and physiological factors on reproduction; the care and management of young and breeding animals. In the laboratory work the student has opportunity to observe and study animals during breeding, pregnancy, parturition, and suckling. Prerequisite: AH 411, VM 321, PH 315. Two lectures; laboratory work to be arranged. Assistant Professor Rodenwold.

AH 326. **Meats.** Second term, 3 hours.

A study of meats of all classes of meat animals, covering butchering, location and cutting of standard and retail cuts, judging meat raw and cooked, economics of meat production, sanitation and inspection, abattoirs, packing houses, and retail markets. One lecture or recitation; 2 two-hour laboratory periods. Assistant Professor Oliver.

AH 411. **Animal Nutrition.** First or third term, 4 hours.

The chemical and physiological principles of animal nutrition; function of the various classes of nutrients when taken into the animal body; nutritive ratios; feeding standards; compounding ratios; feeds with special reference to chemical composition, energy values, and general adaptability to stock-feeding purposes. Prerequisite: Ch 251 or Ch 221. Four recitations. Professor Nelson.

AH 412. **Feeds and Feeding.** Second term, 5 hours.

An advanced course in the feeding of horses, beef cattle, sheep, and swine. Special study is made of the practices of the best stockmen, and of investigations carried on by the various experiment stations. Students desiring to take only such parts of the course as relate to certain kinds of livestock will be permitted to do so by arrangement

with the head of the department. Prerequisite: AH 411. Five recitations. Professor Nelson, Assistant Professors Oliver and Rodenwold.

AH 418. **Wool and Mohair.** Third term, 3 hours.
A study of wool and mohair, covering commercial value, physical and chemical structure, preparation and marketing, judging, sorting, grading, scouring, and principles of manufacture. Prerequisite: AH 315. Two lectures; 1 two-hour laboratory period. Professor Nelson.

AH 421. **Pedigree Study.** Third term, hours to be arranged.
A laboratory study of the blood lines of the various breeds of livestock. Each student is expected to select one or two breeds as the basis for special study rather than to attempt to cover all breeds. Assistant Professor Rodenwold.

AH 424. **Livestock Economics.** Third term, 5 hours.
(Advanced course.) Management, dealing particularly with economic and financial phases of livestock production. Prerequisite: AH 412. Five recitations. Professor Potter.

GRADUATE COURSES

AH 501. **Graduate Research.** Terms and hours to be arranged.
Graduate students are given opportunity to carry on research work along any lines desired. The department is well equipped for graduate work along lines of experimental feeding of hogs, sheep, and beef cattle, livestock management, and all forms of library work with either experiment station or general livestock literature. Professor Nelson, Assistant Professors Oliver and Rodenwold.

AH 503. **Graduate Thesis.** Terms and hours to be arranged.
The preparation of a thesis leading to an advanced degree. Professor Nelson.

Dairy Husbandry

AT the present time there are approximately 26,000,000 dairy cows in the United States. It is estimated that one-sixth of the food supply of the nation is derived from milk and its products. As the population of the country becomes more congested an increasing proportion of the animal food of the country will come from this source. Dairying is one of the most important agricultural industries of Oregon and the Pacific Northwest.

The student who plans to specialize in dairying may elect either dairy production or dairy manufacturing. The curriculum in dairy production (page 157) is designed primarily to fit the student for dairy farming, although he may enter upon extension, experiment station, or teaching work. The dairy manufacturing curriculum (pages 157-158) is designed to fit the student for technical and managerial work in the manufacturing field or for experiment station, teaching, inspection, and marketing work.

Equipment. The department has a herd of more than 100 head of purebred dairy cattle representing three major dairy breeds. These animals

are available for both instructional and experimental purposes and each year are used in teaching judging alone to more than 300 students. The herd is being developed in such a way as to be of unusual value in illustrating the important points in breeding and handling dairy cattle. The herd is free from both tuberculosis and infectious abortion. It is one of the first herds in the country from which infectious abortion has been eliminated. The methods of eradication found successful here are emphasized in teaching work.

The department has a well-equipped manufacturing laboratory. The manufacture of butter, ice-cream, and cottage-cheese, and the handling of market milk, are carried on continuously on a commercial scale. The student thus has opportunity to see this work done under practical conditions, and he receives his systematic instruction under the same conditions. The equipment includes a modern cold-storage plant with an 8-ton ammonia compressor, a 20,000-lb. zero-degree butter storage room, and a 150-gallon 5°-below-zero ice-cream hardening room, together with necessary brine tanks.

DESCRIPTION OF COURSES

LOWER DIVISION COURSE

DH 211. **Elements of Dairying.** First or second term, 3 hours.

Fundamental principles and correct practices of modern dairying; testing of milk and cream; principles of buttermaking; operation of farm separators. Prerequisite: Ch 203 or 221. Two lectures; 1 two hour laboratory period. Assistant Professor Colman.

UPPER DIVISION COURSES

DH 305. **Special Studies.** Terms and hours to be arranged.

Students who have demonstrated ability to do independent investigation may pursue various lines of study under supervision of members of the staff. Prerequisite: consent of department head. Professors Brandt and Wilster, Associate Professor Jones.

DH 311. **Market Milk.** Third term, 3 hours.

To train for the production of market milk and for work in city milk plants and as milk inspectors. Distribution problem of the small town and city; methods of buying, standardizing, and distributing milk from the point of view of the plant owner or manager. Prerequisite: DH 211. Two lectures; 1 two-hour laboratory period. Assistant Professor Colman.

DH 312, 313, 314. **Dairy Products Manufacturing.** Three terms, 4 hours each term.

Principles and practices of commercial manufacture of butter, cheese, casein, ice-cream and concentrated milk products. Two lectures; 2 four-hour laboratory periods. Prerequisite: DH 211. Professor Wilster.

DH 315. **Dairy Products Standards.** Third term, 1 hour.

A critical study of butter, cheese, milk, and ice-cream with score cards; discussion of defects and reasons therefor. One two-hour laboratory period. Professor Wilster.

DH 321. **Dairy Breed Types.** Third term, 3 hours.
The correlation of the form of dairy cattle with milk production; gross breed characteristics; comparative judging, terminology of the show ring, and fitting for show. Prerequisite: AH 111. Three two-hour laboratory periods. Associate Professor Jones.

DH 322. **Dairy Herd Management.** Second term, 3 hours.
History and characteristics of the breeds of dairy cattle and their adaptability to various conditions; the selection of a breed; development of a herd; keeping of records; raising calves and heifers; the principles of feeding dairy cattle. Prerequisite: AH 411. Three lectures. Professor Brandt.

DH 401. **Research.** Terms and hours to be arranged.
Senior students desiring to pursue advanced work may take up problems which they are qualified to study. Professors Brandt and Wilster, Associate Professor Jones.

DH 405. **Special Studies.** Terms and hours to be arranged.
Students who have demonstrated ability to do independent investigation may pursue various lines of study under supervision of members of the staff. Prerequisite: consent of department head. Professors Brandt and Wilster, Associate Professor Jones.

DH 407. **Seminar.** Three terms, 1 hour each term.
The object is to train students to do independent work and to develop the spirit of research. Each student prepares papers and discussions on recent scientific work. One recitation. Professor Brandt.

DH 411, 412, 413. **Dairy Technology.** Three terms, 3 hours each term.
Technical problems in dairy plant operation. Application of fundamental sciences in solving these problems. Analysis of dairy products. Standardization. Prerequisite: DH 211, Ch 232. One lecture; 2 two-hour laboratory periods.

DH 421. **Breeding Dairy Cattle.** Second term, 3 hours.
The application of the principles of genetics to the breeding of dairy cattle; selecting breeding animals; planning the breeding policy of a herd; study of pedigrees. Prerequisite: PH 315. Three lectures. Associate Professor Jones.

DH 422. **Milk Production.** Third term, 3 hours.
A further study of feeding for milk production; more detailed study of various feeding standards and recent feeding investigations; special problems. Prerequisite: AH 411. Three lectures. Professor Brandt.

GRADUATE COURSES

DH 501. **Graduate Research.** Terms and hours to be arranged.
Graduate students who desire to pursue advanced work may take up problems which they are qualified to study. Professors Brandt and Wilster, Associate Professor Jones.

DH 503. **Graduate Thesis.** Terms and hours to be arranged.
The preparation of a thesis leading to an advanced degree. Professors Brandt and Wilster, Associate Professor Jones.

DH 507. Seminar. Three terms, 1 hour each term.

The object of this course is to train the student to do independent work and to develop the spirit of research. Each student prepares papers and discussions on recent scientific work. For graduate students. One recitation. Professor Brandt.

Extension Methods

INSTRUCTION in this department is intended to supplement that of the subject-matter departments in the training of students for positions as county agricultural agents, home demonstration agents, Four-H club leaders, extension specialists, and similar service. The work is designed primarily for graduate students, who are expected to outline, in conference with the head of the department, a year's program of work of not less than 45 credits. Whenever possible, students are given opportunity to gain practical experience as assistant county agents, club leaders, etc. Excellent opportunities for training in journalism, public speaking and dramatics, economics, sociology, and the various production departments supplemented by work in extension methods should materially assist in meeting the need for better training on the part of extension workers.

DESCRIPTION OF COURSES

UPPER DIVISION COURSE

EM 411. Extension Methods. Third term, 3 hours.

Intensive study of the history and present organization of extension work and of the most successful methods employed by extension specialists, county agricultural agents, home demonstration agents, Four-H club leaders, etc. For senior or graduate students only. Three lectures; 1 laboratory period.

Farm Crops

PROBLEMS of production, improvement, marketing, manufacture, and uses of each of the field crops produced for food, forage, textile, and special purposes are dealt with by this department. The purpose of the major curriculum (page 158) is primarily to teach students scientific, practical, and economical methods of crop production, marketing, and improvement that may be put into actual use on the farm. In addition the courses are so arranged that men may fit themselves for business positions in connection with the marketing of farm crops; for civil service positions in agronomy, forage crops, grain standardization, plant breeding, and crop marketing; and for experiment station, extension, and teaching work. The object is to develop men with broad training for leadership along agricultural and general lines and to provide scientific training such that graduates may succeed in the professional and technical agricultural fields. Considerable flexibility in electives is encouraged in order to meet special needs of individual students.

Farm crops graduates occupy technical, commercial, and teaching positions involving considerable responsibility and are successful in farm operation. They are in Federal experimental and regulatory positions and State experimental positions, several are county agents, others are in the seed and grain business, several farm successfully, and some are in graduate study and teaching positions. The field is a large one and deals principally with well-known and staple crops that are constantly in use and in demand. Farm crops work is closely related to four important fields: (1) the daily food supply of our human population, (2) the feed requirements of all classes of farm animals, (3) the growth of plants for textiles, and (4) seed and special crops, such as drug plants. Crops courses make practical application of scientific principles from such fields as soils, physics, chemistry, bacteriology, plant pathology, and physiology.

Equipment. The department has excellent recitation rooms, greenhouses, and well-equipped laboratories. The Experiment Station plots and farm fields afford superior opportunities for field study and make possible extensive collection of valuable material for class work. Federal Cooperative investigations in seed testing, forage crop, fiber flax, cereals and hops form a distinct instructional asset. A large collection of the best books, periodicals, etc., dealing with the subject, is available. Oregon State Agricultural College is excellently equipped for grain and hay grading and inspection work; the crop inspection and grading work is a marked advance over anything heretofore offered.

DESCRIPTION OF COURSES

LOWER DIVISION COURSES

FC 111. **Cereal Production.** First or third term, 3 hours.
Fundamental principles of economic production, rotation, storage, costs, marketing, uses, and improvement of the leading small cereals, corn, the sorghums and broom corns, and fiber and seed flax. Prerequisite to all Farm Crops courses except FC 211, 311, 317 and 324. One lecture; 1 recitation; 1 two-hour laboratory period. Associate Professor Hill.

FC 211. **Forage and Root Crop Production.** First or third term, 3 hours.
Fundamental principles of economic production, rotation, storage, costs, marketing, uses, and improvement of the important forage and pasture crops and their seeds, the root crops, and potatoes. Weed-control principles. Two lectures; 1 two-hour laboratory period. Professor Hyslop, Assistant Professor Smith.

UPPER DIVISION COURSES

FC 301. **Research.** Terms and hours to be arranged.
Original investigation of some scientific problem.

FC 303. **Thesis.** Terms and hours to be arranged.
Preparation of a thesis based on reading and research.

FC 305. **Special Crop Work.** Terms and hours to be arranged.
Lectures or laboratory work, or both, for groups of students desiring additional work along special lines of crop production not

treated fully in other courses, or for students desiring to carry on advanced reading and conference work beyond that outlined in the regular courses. Professor Hyslop, Associate Professor Hill, Assistant Professor Smith.

FC 307. **Seminar.** Three terms, 1 hour each term.
Analyses of technical publications on farm crops and allied subjects. Especial attention is given to crop problems in production, breeding, standardization, economics, ecology, and related fields. One period. Professor Hyslop, Associate Professor Hill, Assistant Professor Smith.

FC 311. **Potato Growing.** Second term, 2 hours.
Potato production; improvement; storage; cost; marketing; distribution; uses; experimental work; varietal studies; identification, judging, and scoring. One recitation; 1 two-hour laboratory period. Professor Hyslop.

FC 313. **Lawns and Turfs.** First term, 2 hours.
Varieties, characteristics, and adaptability of turf plants and seeds; seed-bed preparation, seeding, fertilization, management, weed and pest control for lawns, golf courses, grass nurseries, playing and landing fields, parks, and other purposes. One recitation; 1 two-hour laboratory period. Professor Hyslop.

FC 315. **Principles of Agricultural Breeding.** Third term, 3 hours.
An introduction to the practical application of modern conceptions of breeding. Two lectures; 1 two-hour laboratory period. Assistant Professor Smith.

FC 317. **Weed Eradication.** Third term, 2 hours.
Lectures and reference work on weed types and their habits of growth; weed legislation; practical methods of prevention, control, and eradication; special attention to noxious, persistent, perennial, and poisonous weeds of ranch and range. One lecture; 1 two-hour laboratory period.

FC 319. **Range Improvement and Management.** Second term, 3 hours.
Reseeding, improvement, care and management of cut-over, overflow, marginal, and other lands used for range and pasture purposes. Prerequisite: FC 211 or equivalent. Two lectures; 1 two-hour laboratory period. Professor Hyslop.

FC 322. **Cereal Production Lectures.** First term, 3 hours.
Production and uses of cereals and allied grains; distribution; adaptability; ecological relationships; seed treatment; production methods; markets; manufacture and movement in commerce. Prerequisite: FC 111, Bot 202 or equivalents. Three lectures or recitations. Associate Professor Hill.

FC 323. **Cereal Production Laboratory.** First term, 2 hours.
Morphological and taxomomic studies of the cereals in the laboratory and in the field, cereal judging, studies of cereal manufacturing plants. Two two-hour laboratory periods. Associate Professor Hill.

FC 324. **Forage and Related Crops.** Third term, 3 hours.
Special studies in the production, handling, marketing, and uses of forage and related plants; use of various plants in green manuring, cover-cropping and sand-binding or soil-protecting purposes; comparative use and cost of different forage crops. Prerequisite: FC 211 or equivalent. Two lectures; 1 two-hour laboratory period. Professor Hyslop.

FC 327. **Production of Hops, Drug and Related Plants.** Second term, 3 hours.
The principles of production, harvest, storage, distribution, marketing and costs of hops, drug and related plants. Prerequisite: Bot 103 or equivalent. Two lectures; 1 two-hour laboratory period. Assistant Professor Smith.

FC 330. **Applied Plant Genetics.** First term, 5 hours.
Practical application of genetics to economic problems of improvement of field and horticultural crops. Methods of breeding for yield and special qualities are discussed. Modern conceptions of plant breeding, including Mendelism, disease resistance, mutation, selection, hybridization, and inbreeding are studied. Prerequisite: FC 111, 211; Bot 201, 202, 203; FC 315; or equivalents. Four lectures; 1 two-hour laboratory period. Assistant Professor Smith.

FC 401. **Research.** Terms and hours to be arranged.
Original investigation of some scientific problem.

FC 403. **Thesis.** Terms and hours to be arranged.
Preparation of a thesis based on reading and research.

FC 405. **Special Crop Work.** Terms and hours to be arranged.
Similar to FC 305. For seniors.

FC 407. **Seminar.** Three terms, 1 hour each term.
Similar to FC 307. For seniors.

FC 411. **Crop Inspection.** Second term, 5 hours.
The inspection, grading, and valuation of cereals, hay, forage, potatoes, beans, seeds, stock feeds, and miscellaneous agricultural commodities according to Federal, State, and other adopted standards; theory and practice of grade fixation and application. A course for persons buying or selling agricultural commodities, grain supervisers, samplers, inspectors, warehousemen, millers, and others. Prerequisite: FC 111, 211, 322, 323; Ch 221; or equivalents. Two lectures; 3 two-hour laboratory periods. Associate Professor Hill.

FC 414. **Seed Production.** First term, 3 hours.
Principles and special methods of production, distribution, and use of seed crops of grasses, alfalfa, clover, and other forage legumes; field beans, horse-beans, soy-beans, peas, and other food legumes; and other special seed crops. Seed inspection, seed certification, and seed legislation. Prerequisite: FC 111, 211, 322, 323; or equivalents. Two lectures; 1 two-hour laboratory period. Professor Hyslop.

FC 417. **Crop Breeding.** Second term, 3 hours.
The theory and technique of breeding plants; mode of inheritance;

factor interaction; factor linkage; qualitative inheritance; and variability and its measurement. This course is especially for students expecting to make a business of seed production and improvement and for those wishing to enter Federal or experiment station work in plants. Prerequisite: FC 111, 211, 322, 323 330; FC 315; or equivalents. Three recitations. Assistant Professor Smith.

FC 421. **Crop Efficiency.** Third term, 5 hours.
The production, storage, and marketing of farm crops; comparison of methods leading to cheaper and more efficient production; crop adaptability and its relation to substitutes and competing markets; relation of preparatory methods to returns; cropping systems and crop rotations; crop specialization; amendments affecting yield, quality, and profits of special crops; crop storage and conditioning; warehousing problems; grade and standard fixation; marketing of farm crops; export and import regulations; crop statistics, their value and use; disposal of crop by-products; other problems affecting successful production. Prerequisite: FC 322, 323, 414; Ch 221; or equivalents. Five lectures. Professor Hyslop.

GRADUATE COURSES

FC 501. **Graduate Research.** Terms and hours to be arranged.
Original research on some scientific problem.

FC 503. **Graduate Thesis.** Terms and hours to be arranged.
The preparation of a thesis based on reading and research.

FC 505. **Special Crop Work.** Terms and hours to be arranged.
Similar to FC 405. For graduate students.

FC 507. **Seminar.** Three terms, 1 hour each term.
Analyses of technical publications on farm crops and allied subjects. Especial attention is given to crop problems in production, breeding, standardization, economics, ecology, and related fields. One period. Professor Hyslop, Associate Professor Hill, Assistant Professor Smith.

Farm Management

FARM management deals with the organization, equipment, and operation of the farm as a business enterprise; with the cost of production; and with the economics of agricultural land. Its aim is to correlate and synchronize the operations in the various phases of production on the farm in such a way as to result in a smoothly-running, efficient plant from which maximum returns may be obtained. The curriculum in Farm Management (pages 154-155) is designed to give the student a broad, well-rounded training in all the phases of agriculture that will prepare him for successful production, with emphasis laid upon those studies which will best fit him for successful management of the farm. The work also prepares students for professional work as farm managers, county agriculturalists, extension specialists, Smith-Hughes teachers, farm appraisers, agricultural

statisticians, bank and railroad agriculturists, United States Department of Agriculture civil service candidates, college instructors, and experiment station research men.

Equipment. The farm management laboratory and seminar room is provided with drafting tables and instruments, surveying instruments, original data and record sheets, lantern slides and charts, and a periodical and bulletin reference library. Investigational work carried on in many different parts of the state affords the advanced student excellent opportunities for field work or thesis study.

DESCRIPTION OF COURSES

LOWER DIVISION COURSE

FM 211. **Principles of Farm Management.** Third term, 3 hours.

Major factors affecting the labor income; types of farming; selection and purchase of the farm; capital investment and distribution; use of credit; quality and diversity of business; farm leases and rental methods; man and horse labor efficiency; farm equipment costs and duty; farm and farmstead layout; cropping systems and crop rotations; cost of production; use of farm records and accounts; getting started in the farming business. Short field trips. Two lectures; 1 two-hour laboratory period. Professor Scudder, Associate Professor Kuhlman.

UPPER DIVISION COURSES

FM 311. **Farm Accounting.** First or second term, 3 hours.

Drill in setting up and analyzing accounts for agricultural enterprises and for farms of different types with emphasis on clarifying the student's understanding of debits and credits. Preparation of different forms of summary statements of the year's business, adapted to reporting income tax, enterprise costs and profits, etc. For agricultural students only. One lecture; 1 recitation; 1 two-hour laboratory period. Associate Professor Kuhlman.

FM 312. **Operation Efficiency.** First term, 3 hours.

A continuation of FM 211 in which the minor factors in successful farm management are discussed, stress being laid on operation efficiency. Two lectures; 1 two-hour laboratory period. Associate Professor Kuhlman.

FM 403. **Applied Farm Management.** Any term, 2 to 5 hours.

Field work on individual problems such as preparation of detailed organization and management plans for specific farms; efficiency testing of groups of farms; field studies of costs and profits of specific farm enterprises; field study of specific farm practices and their efficiency; studies in equipment and building improvement; farm management factor studies, etc.; directed and reviewed through weekly round-table discussions. This course normally follows FM 411. Prerequisite: FM 211. All laboratory and field work. Professor Scudder, Associate Professor Kuhlman.

FM 407. **Farm Management Seminar.** Three terms, 1 hour each term.

Senior and graduate students majoring in Farm Management meet together in seminar work, and juniors are required to attend open

meetings as listeners. The class constitutes the students' technical association in farm management. Phases of problems of research character are presented by the senior and graduate students working under the supervision of the instructor. Discussion of investigational methods and results; inquiry into opportunity and requirements for professional and practical work in farm management; presentation of management methods by successful farmers in the state, etc. Each year a three-day field trip is taken to successful farms. Fortnightly meetings. Professor Scudder, Associate Professor Kuhlman.

FM 411. **Farm Organization.** Second term, 3 hours.

Application of farm management principles to the organization of the individual farm; methods of measuring the efficiency of any given farm; organizing a farm business; standards for farm planning; efficiency practices in production and operation; planning production programs, cropping systems, and fertility balances; labor programs; livestock, machinery, and building equipment; methods of increasing productive business; methods of financing, etc. Field trips. Prerequisite: FM 211. Two lectures; 1 three-hour laboratory period. Professor Scudder, Associate Professor Kuhlman.

FM 414. **Enterprise Costs and Profits.** Third term, 3 hours.

A survey of the whole field of farm enterprises, particularly those of the Northwest and Pacific Coast, to give the student a needed basis for the correct selection of enterprises in different regions. The importance of each enterprise; causes of failure; size, capital, labor and maintenance requirements; production possibilities and markets; costs, prices, and profits, analyses of new or questionable enterprises; field study of major enterprises. Prerequisite: FM 211. Two lectures; 1 three-hour laboratory period. Professor Scudder.

FM 415. **Enterprise Costs and Profits.** First term, 2 hours.

Continuation of FM 414. One lecture; 1 three-hour laboratory period. Professor Scudder.

FM 416. **Agricultural Land Economics.** Second term, 3 hours.

Applied economics of the subject presenting an inventory of our agricultural land resources; bases and procedure in agricultural land classification, utilization, and disposal; costs and problems of land reclamation; land settlement plans, procedure, and results; problems in land tenure and conservation; agricultural land values and appraisal methods. Prerequisite: FM 211. Three lectures. Professor Scudder.

FM 417. **Agricultural Appraisal.** Third term, 3 hours.

For senior and graduate students. Devoted to field work in appraisal of farms of different types; appraisal of agricultural land areas and projects such as logged-off lands, reclamation projects, etc.; appraisal of farm enterprises. Advanced commercial and Federal appraisal methods used and newer methods tested. Weekly field trips. Prerequisite: FM 211, 414, 416. Professor Scudder.

FM 418. **Agricultural Cost Methodology.** First term, 3 hours.

For senior and graduate students. Methods of obtaining and determining costs of agricultural products, including the survey method; assembling, tabulation, analysis, and interpretation of cost data; cost

record forms for different types of farms and enterprises and for cost surveys. Prerequisite: FM 211, 311, 414. Three lectures. Professor Scudder, Associate Professor Kuhlman.

GRADUATE COURSES

FM 501. **Graduate Research.** Terms and hours to be arranged.
Graduate research other than thesis work. Professor Scudder, Associate Professor Kuhlman.

FM 503. **Graduate Thesis.** Terms and hours to be arranged.
Under this head all graduate thesis work in farm management is registered. Thesis work may be selected from a wide variety of subjects, related, if desired, to the economic phases of certain agricultural commodities, or practices or types of farming in which the student is especially interested. Professor Scudder, Associate Professor Kuhlman.

FM 507. **Seminar.** Three terms, 1 hour each term.
Senior and graduate seminar in farm management. See FM 407. Professor Scudder, Associate Professor Kuhlman.

Horticulture

INSTRUCTIONAL work in horticulture covers the broad fields of horticultural production and horticultural products. Horticultural production is concerned with the principles and practices that make for successful growing and marketing of horticultural crops. The field of horticultural products is that of the commercial utilization of horticultural crops. In all the work the student is first thoroughly grounded in the fundamentals and is then allowed to specialize as he desires.

Horticultural Production includes general horticulture, pomology, vegetable crops, floriculture, and landscape maintenance. The courses consist of lectures, reference reading, field exercises, and laboratory work. Much stress is placed upon the practical phases of all the work. Horticultural truths are illustrated by practice, whenever possible. Students are given field and laboratory exercises in all such operations as planting, seeding, budding, grafting, cultivating, thinning, pruning, harvesting, and spraying. Special curricula leading to the bachelor's degree are offered in pomology (see pages 159-160), in vegetable crops (see page 160), and in landscape maintenance (page 159). The work in landscape maintenance lays the foundation for professional careers in laying out, planting, and superintending country and city homes, parks, playgrounds, etc.

Horticultural Products. The curriculum in horticultural products (pages 162-163) is designed to fit the student to enter fields of commercial canning, dehydration, maraschino, preserves, jam, jelly, pickles and condiments, and juice manufacture, commercial food manufacture, and in addition, to prepare him for research work along all lines of home and commercial canning and commercial food manufacture. The laboratory work

is conducted on a commercial scale, and the student is trained to operate and repair machinery used in all manufacturing work.

Instruction in canning embraces grafting, blanching, siruping, exhausting, sealing, sterilizing, labeling, and storage. In dehydration, instruction covers the drying of prunes, pears, apples, and other fruits, and vegetables. Students have an opportunity to operate all dehydration equipment, where conditions are kept under constant control. Special opportunity is afforded also those wishing work on problems of by-products manufacture.

Equipment. The Horticulture wing of Agriculture Hall, the Horticultural Products Building, modern greenhouses, orchards, and gardens, the large campus containing good plant material, and a very good library are at the service of the department. The laboratories are well equipped for giving instruction in spraying, plant propagation, fruit packing, vegetable grading and crating, and systematic pomology. There are large lecture rooms, drafting rooms, and a photography room.

The Horticultural Products Building is equipped with a 40-horse-power boiler for high-pressure steam. Ample provisions are made for hot and cold water and electric power. In the basement are located boiler and storage rooms, also juice room for the manufacture of fruit juices, carbonated beverages, and vinegars. This room is equipped with hydraulic press, centrifuge, multiple drum, silver-lined filter, carbonating equipment, and settling vats. On the first floor is located dehydrating equipment, such as three-tunnel Oregon drier with recirculation, and a steam heated experimental dehydrator of one-ton capacity. This is automatically controlled by compressed air. Preparation machines, such as power peelers, slicers, washers, etc., are located in this room. This floor contains vacuum pans with distilling apparatus for manufacture of fruit essences, jams and marmalades under vacuum and various food products of like nature. A large research laboratory for chemical investigation of by-products of the fruit industry is also located on the first floor. On the second floor are located office and lecture rooms. The new wing, occupied entirely by the canning laboratory, is equipped with two complete lines of canning machinery. Cooling facilities are provided for the proper handling of the canned products. The new wing is of steel-girded construction, the interior finished in white enamel, lighted by windows around three sides and saw-tooth skylights, and amply ventilated. This wing contains equipment for the manufacture of fruit butters, jams and jellies on a commercial scale, finishers, copper-jacketed kettle, and various machinery.

In addition to the orchards and gardens of the College, the region is well provided with orchards, canneries, etc., which can be used in the laboratory work.

The department of Horticulture is well equipped for research work. The laboratories, the greenhouses, the experimental plots, and an excellent research library of scientific books and periodicals facilitate effective investigation in the field of horticulture.

NOTE: *The courses in Horticulture comprise the following groups, under each of which the respective courses are listed in numerical order: General Horticulture (including graduate and research courses), Horticultural Products, Pomology, Vegetable Crops.*

COURSES IN GENERAL HORTICULTURE

LOWER DIVISION COURSE

Hrt 111. **Elements of Horticulture.** Third term, 3 hours.

This course is designed as an introduction to the subject. Fruit growing from the farm and commercial standpoints; home vegetable growing and important truck crops; the fundamental phases of food preservation, including drying, cider and vinegar manufacture, etc. Two lectures; 1 three-hour laboratory period. Professors Brown, Bouquet, Wiegand, Duruz.

UPPER DIVISION COURSES

Hrt 311. **Plant Propagation.** Second term, 3 hours.

Different methods of propagating plants by seeds, cuttings, bulbs, tubers, budding and grafting. Students grow their own plants and keep records on them in greenhouse, nursery, and orchard. One lecture; 2 two-hour practicums. Professor Duruz.

Hrt 312. **Greenhouse Construction and Management.** First term, 3 hours.

Fundamental principles of greenhouse design and operation, including materials, equipment, heating, ventilation, watering, soils, soil sterilization, insecticides, and fumigation, as applied to greenhouse flower and vegetable crops. One lecture; 2 two-hour laboratory periods. Professor Bouquet.

Hrt 313. **Greenhouse Crops.** Second term, 3 hours.

Actual work in the greenhouse. Propagation; culture; soils; ventilation; watering; heating; as wide a range of experience as possible in growing of plants used in the florist trade. Prerequisite: Hrt 311. Nine periods laboratory work. Professor Brown.

Hrt 314. **Greenhouse Crop Practices.** Third term, 3 hours.

Production of floricultural bedding plants as well as young vegetable plants under glass, for spring and summer transplanting. One lecture; 2 two-hour laboratory periods. Professor Bouquet.

Hrt 316. **General Floriculture.** First term, 3 hours.

Production of flowers with special reference to annuals, biennials, herbaceous perennials, and bedding plants. Varieties, soils, fertilizers, planting, pest control, and cultural practices. Two lectures; 1 two-hour laboratory period. Professor Bouquet.

Hrt 405. **Special Problems in Horticulture.** Terms and hours to be arranged.

Students who have demonstrated their ability to do independent investigational work may pursue approved problems under the supervision of staff members. Professors Brown, Duruz, Bouquet, and Wiegand.

Hrt 407. **Seminar.** Any term, 1 hour.

For senior and graduate students. Current literature, experiment station and federal publications are reviewed. Students prepare papers on assigned subjects. Professor Brown and others.

Hrt 411. **Methods of Research.** Second term, 3 hours.

Conducted as a research round table. Drill in making of briefs and outlines of research problems, methods of procedure in conducting investigative work, processes of reasoning, weighing of evidence, and the preparation of bulletins and reports. Close study is made of research work presented in the literature. Seniors and graduate students. Three lectures. Assistant Professor Moore.

GRADUATE COURSES

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

Investigational work for graduate students in pomology, vegetable crops, horticultural products, plant breeding and plant physiology as related to horticulture. Horticulture staff.

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

Consists of work upon a specific problem and the completion of a graduate thesis dealing with that problem. The subject of the problem is chosen after conference with the major professor. Horticulture staff.

COURSES IN HORTICULTURAL PRODUCTS

LOWER DIVISION COURSES

HP 250. **Principles of Food Preservation.** First term, 3 hours.

Fundamental principles involved in freezing, drying, concentrating, salting, smoking, fermenting, carbonating, and the use of heat, electricity, and chemical preservatives for the preservation of all types of foods. Two lectures; 1 two-hour laboratory period. Professor Wiegand, Assistant Professor Onsdorff.

HP 251. **Principles of Canning Fruits.** Second term, 3 hours.

Designed to teach by lectures, recitations, and laboratory exercises the fundamental principles of canning fruits. Varieties; buying; handling before canning; grading; methods of preparation; blanching; siruping; water and steam exhausting; sealing; cooking; cooling; storage; causes of spoilage; judging canned foods; types of containers; marketing practices; working knowledge of methods used in commercial, farm, and home canning. Two lectures; 1 three-hour laboratory period. Professor Wiegand, Assistant Professor Onsdorff.

HP 252. **Principles of Canning Vegetables.** Third term, 3 hours.

Continuation of HP 251, with application to vegetable canning and vegetable products. Retort installation, operation, and control; handling methods; heat penetration; time of cooking and thermal death points; vegetables canned by different methods and results compared. Commercial plants are visited for study. Two lectures; 1 three-hour laboratory period. Professor Wiegand, Assistant Professor Onsdorff.

UPPER DIVISION COURSES

HP 311. **The Canning Plant and Its Equipment.** Third term, 3 hours.

The purpose of this course is to study the canning plant, its location, general plan of construction, equipment, and operation. Students

are given training in designing plants and estimating costs. Laboratory work covers the construction, installation, operation, and adjustment of canning machinery. Field trips to canneries to study their construction. Two lectures; 1 three-hour laboratory period. Assistant Professor Onsdorff.

HP 321. **Food Products.** Third term, 2 hours.
Commercial methods followed in the manufacture of such foodstuffs as fruit and vegetable by-products, spices, condiments, flavoring extracts, sirups, leavening agents, animal foods; the use of sugars, vegetable cooking oils, flours, and cereals. Two lectures. Professor Wiegand, Assistant Professor Onsdorff.

HP 331. **Dehydration of Fruits and Vegetables.** First term, 3 hours.
This course is especially for students majoring in Horticulture. Actual drying of fruits and vegetables is done, along with the study of the common types of driers and principles of dehydration. Methods of testing for moisture and adulteration are stressed. Two lectures; 1 three-hour laboratory period. Professor Wiegand.

HP 341. **Pickles, Relishes, and Condiments.** First term, 3 hours.
Theory, principles, and practice in vinegar and salt pickling. Making and packing of sour, sweet, and dill cucumber pickles; pickling of other products such as onions, melon rinds, carrots, beets, crab-apples, tomatoes; tomato products, salad dressings, relishes, and sauerkraut studied and manufactured. Causes of spoilage and testing methods are emphasized. Two lectures; 1 three-hour laboratory period. Assistant Professor Onsdorff.

HP 351. **Fruit Juice and Vinegar Manufacture.** First term, 3 hours.
Practical and scientific work in the handling of fruit juices; problems of filtration, sterilization, and bottling. Two lectures; 1 three-hour laboratory period. Professor Wiegand, Assistant Professor Onsdorff.

HP 352. **Commercial Jam and Jelly Manufacture.** Second term, 3 hours.
Principles of making jams and jellies from fresh and frozen fruits, correlated with laboratory practice and quantity manufacture; testing for yields, moisture content, pectin requirements, acidity, sugar, etc., stressed. Two lectures; 1 three-hour laboratory period. Assistant Professor Onsdorff.

HP 353. **Carbonated Beverages and Crushed Fruits.** Third term, 3 hours.
Designed to give instruction in the making of carbonated beverages by using pure and synthetic flavors. Study of the methods of freezing fruits and berries for retail and manufacturing purposes. The manufacture of crushed fruits for soda fountains and ice-cream making is emphasized. Designed especially for Dairy Manufacturing, Pharmacy, and other students interested. Two lectures; 1 two-hour laboratory period. Professor Wiegand, Assistant Professor Onsdorff.

HP 361. **Preserves, Glacéd Fruits, and Candied Fruits.** Third term, 3 hours.
Manufacture of preserves, marmalades, conserves, maraschino cherries, glacéd fruits, and candied fruits. Two lectures; 1 three-hour laboratory period. Professor Wiegand, Assistant Professor Onsdorff.

COURSES IN POMOLOGY

UPPER DIVISION COURSES

Pom 312. History and Literature of Horticulture. Second term, 3 hours.
Brief study of the history of horticulture; systematic survey of the literature of horticulture, acquainting the student with the various sources of horticultural knowledge. One lecture; 2 recitations. Professor Duruz.

Pom 313. Commercial Pomology. First term, 4 hours.
The problems of handling fruit, including the picking, grading, and packing of fruits; study of the problems of transportation, distribution, and marketing, storage and storage plants. Three lectures; 1 two-hour laboratory period. Prerequisite: Hrt 111; Ec 201, 202, 203. Professor Duruz.

Pom 321. Subtropical Pomology. Second term, 3 hours.
This course takes up in a general way the history, growing, and handling of such subtropical fruits as the citrus fruits, figs, olives, dates, oriental persimmons, pomegrantes, avocados papayas, jujubes, passion fruits and others. Prerequisite: Hrt 111. Two lectures; 1 recitation. Professor Duruz.

Pom 341. Small Fruits and Grapes. Second term, 3 hours.
Problems connected with the soils and slopes, pruning, training, harvesting, packing, and marketing of such small fruits as the strawberry, currant, gooseberry, raspberry, blackberry, loganberry, and cranberry; together with American and European grapes. Two lectures; 1 recitation. Professor Duruz.

Pom 415. Fruit Production. Third term, 4 hours.
Principles and practices of fruit growing as related to climate, soil and water requirements, varieties, root stocks, planting systems, pollination, thinning, frost, pest control, and other practical problems. Prerequisite: Hrt 111; Bot 331 prerequisite or parallel. Three lectures; 1 three-hour laboratory period. Professors Brown and Duruz.

Pom 417. Systematic Pomology. First term, 4 hours.
Descriptions, nomenclature and classifications of fruits and nuts. The student will study a sufficient number of varieties to become acquainted with the more important groups, species, and varieties. One lecture; 1 recitation; 2 two-hour laboratory periods. Professor Duruz.

Pom 419. Spraying. Third term, 3 hours.
Principles underlying spraying practices, insect and disease control, sprays and their mixing, operation of spray pumps, gas engines, and electric motors; utilization of portable and stationary outfits, operation of small sprayers and dusters, spray nozzles, guns, and rods, accessories; practice in orchard spraying. Prerequisite: Hrt 111, Bot 351, Ent 411. One recitation; 2 two-hour laboratory periods. Professors Duruz and Gilmore.

Pom 431. Pruning. Second term, 3 hours.
Thorough training in the fundamental principles underlying prun-

ing, including bud studies, tree building, maintaining vigor of the tree, rejuvenation and the like. Prerequisite: Hrt 111, Bot 331. Two lectures; 1 three-hour laboratory period. Professor Brown.

COURSES IN VEGETABLE CROPS

UPPER DIVISION COURSES

VC 321. **Principles of Vegetable Production.** First term, 3 hours.
The principles and practices involved in growing vegetables, including such subjects as soils, fertilization, varieties, seeds, plant growing, distribution of crops, succession cropping, irrigation, pest control, planting and cultivating, etc. Prerequisite: Hrt 111. One lecture; 1 recitation; 1 two-hour laboratory period. Professor Bouquet.

VC 322. **Vegetable Crops for Canning.** Second term, 3 hours.
Production and handling of cannery vegetables, including crops of especial importance to Northwest packers, such as beets, cabbage, carrots, cauliflower, squash, tomatoes, etc. Designed especially for students majoring in Horticultural Products. Two lectures; 1 two-hour laboratory period. Professor Bouquet.

VC 323. **Vegetable Growing Practices.** Third term, 3 hours.
Field and greenhouse work with lectures to acquaint the student thoroughly with proper growing and management methods in the production of vegetables for market. Prerequisite: Hrt 111. One lecture; 1 recitation; 1 two-hour laboratory period. Professor Bouquet.

VC 325. **Vegetable Forcing.** Third term, 3 hours.
Commercial practices in growing vegetable crops under glass, including tomatoes, cucumbers, lettuce, radishes, rhubarb, and French endive. Studies of commercial vegetable greenhouse operations. Open to juniors and seniors. Prerequisite: Hrt 111. Two lectures or recitations; 1 two-hour laboratory period. Professor Bouquet.

VC 423. **Vegetable Varieties.** First term, 2 hours.
Descriptions, nomenclature, and classifications of vegetables; a sufficient number of varieties of each vegetable studied so that the student may become acquainted with the more important groups of horticultural varieties; exercises in displaying and judging vegetables; assigned readings. Prerequisite: Hrt 111. Two two-hour laboratory periods. Professor Bouquet.

VC 424. **Vegetable Marketing.** First term, 3 hours.
Principles of commercial practices of field harvesting, grading, and packing of vegetables; methods of marketing; car loading, mixed cars, transportation, and distribution of truck crops, such as onions, onion sets, cabbage, cauliflower, broccoli, melons, tomatoes. Lectures, farm and market visits, field work in loading and observation of car loads; assigned readings. Prerequisite: Hrt 111. One lecture; 1 recitation; 1 two-hour laboratory period. Professor Bouquet.

Poultry Husbandry

POULTRY keeping as a specialized business has developed rapidly throughout the Northwest and especially in Western Oregon. Climatic conditions throughout the state are particularly adapted to successful breeding and raising of poultry.

With the development of the poultry industry in Oregon and throughout the country has come a demand for young men trained in the various lines of the industry. Besides the opportunities afforded in the actual work of poultry farming there is an increasing demand for properly qualified men for positions as government and experiment station workers, as field men and poultry feed specialists with the larger feed companies, and for positions with packing houses and cooperative marketing associations.

In the major curriculum (pages 156-157) poultry courses and elective subjects are so arranged that the student may receive training that will fit him for any of the lines of work mentioned.

Equipment. The equipment includes two poultry plants, one of forty-five acres, the other a fifteen-acre tract. The instructional plant is operated on a strictly commercial basis, offering an opportunity to the student to learn at first hand practices, costs, and general management of a specialized poultry business. The three-story Poultry Building, 53 by 140 feet, has laboratories for incubation, judging, killing, egg candling, and carpentry, equipped with appliances necessary for practical poultry keeping. Different makes of incubators, including three mammoth machines, are available for student practice in incubation. There are colony poultry houses and laying houses of various styles. Large flocks of White Leghorns are available for study, and pens of several others of the more common breeds and varieties are used for student study and judging practice. Sets of charts, lantern slides, motion pictures, and photographs are used to illustrate breeds of fowls, types of poultry houses, and equipment.

DESCRIPTION OF COURSES

LOWER DIVISION COURSE

PH 211. **Practical Poultry Keeping.** First or second term, 3 hours.

A brief course dealing with practical application of the principles of poultry husbandry to general poultry farm conditions. An introductory course for those intending to specialize in this field, recommended also for those who plan to teach agriculture or wish a single, elementary course in the fundamentals of poultry husbandry. Two lectures; 1 two-hour laboratory period. Professor Lunn, Associate Professor Fox.

UPPER DIVISION COURSES

PH. 305. **Special Studies.** Terms and hours to be arranged.

For students who have demonstrated their ability to carry on independent investigation or study under the supervision of staff members. Professor Lunn.

PH 307. **Seminar.** Three terms, 1 hour each term.

Discussion of poultry literature and current problems of interest to the advanced student, including critical examination of research

methods relating to poultry work. Frequent written reports are required. Professor Lunn.

PH 315. **Animal Breeding.** Second term, 3 hours.
The principles of heredity as applied to the breeding of domestic animals and fowls. Three lectures. Professor Knowlton.

PH 321. **Incubation and Brooding.** Third term, 4 hours.
A study of the principles and practices involved in natural and artificial incubation and brooding; study of the egg and its development; laboratory work in actual running of incubators and brooders; opportunity given when possible for students to work out some definite problem. Prerequisite: PH 211. Two recitations; 2 two-hour laboratory periods. Associate Professor Fox.

PH 331. **Poultry-house Design and Construction.** Second term, 4 hours.
A study of the principles of poultry-house designing; estimating the cost of building; studying building plans; practice in erecting, remodeling, and making appliances; excursions to neighboring farms. Prerequisite: PH 211. Two recitations; 2 two-hour laboratory periods. Associate Professor Fox.

PH 341. **Advanced Poultry Judging.** First term, 2 hours.
Practical judging of all kinds of poultry. Judging teams for intercollegiate judging competitions are chosen largely from the members of this class. Prerequisite: PH 211. Two two-hour laboratory periods.

PH 351. **Turkey Management.** First term, 3 hours.
Practical details in the breeding, feeding, rearing, and marketing of turkeys. Prerequisite: PH 211. One recitation; 2 two-hour laboratory periods.

PH 403. **Thesis.** Terms and hours to be arranged.
The preparation of a thesis. For senior students. Prerequisite: consent of department head. Professor Lunn.

PH 405. **Special Studies.** Terms and hours to be arranged.
For students who have demonstrated their ability to carry on independent investigation or study under the supervision of staff members. Professor Lunn.

PH 407. **Seminar.** Three terms, 1 hour each term.
Senior seminar in poultry husbandry. See PH 307. Professor Lunn.

PH 411. **Poultry Feeding.** First term, 4 hours.
A study of feeds suitable for poultry; principles and practice of feeding breeding stock, feeding for egg production, and fattening for market; feeding young and growing chicks; feeding appliances; the compounding of rations; actual practice in feeding a flock of hens. Prerequisite: PH 211. Two recitations; 2 two-hour laboratory periods. Associate Professor Fox.

PH 421. **Marketing Poultry Products.** Second term, 4 hours.
Preparation of poultry and eggs for market; methods of storage and preservation; methods of marketing; laboratory work in killing,

picking, grading, and shipping poultry; candling, grading, packing, and storing eggs. Prerequisite: PH 211. Two recitations; 2 two-hour laboratory periods. Associate Professor Fox.

PH 431. **Poultry Plant Management.** Third term, 4 hours.
Selection of the location, layout, and arrangement of buildings; study of records. Each student works out complete plans for the layout and management of a commercial poultry enterprise. Prerequisite: PH 321, 331, 411, 421. Two recitations; 2 two-hour laboratory periods. Associate Professor Fox.

PH 441. **Poultry Breeding.** Third term, 4 hours.
A study of breeds of poultry, their history and classification; principles and methods of breeding for different purposes. Prerequisite: PH 211. Two lectures; 2 two-hour laboratory periods. Professor Knowlton.

GRADUATE COURSES

PH 501. **Graduate Research.** Terms and hours to be arranged.
Students registering for graduate work in Poultry Husbandry may elect, with the approval of the head of the department, any branch of the subject upon which they desire to do their graduate work. With the great amount of data collected during the past twenty years the department affords special opportunity for research work, particularly along the lines of breeding for egg production. Professor Lunn.

PH 503. **Thesis.** Terms and hours to be arranged.
The preparation of a thesis for an advanced degree. Professor Lunn.

PH 507. **Seminar.** Three terms, 1 hour each term.
Poultry literature and current problems of interest to the advanced student, including critical examination of research methods. Frequent written reports. Professor Lunn.

Soils

COURSES in soils include soil physics, soil drainage, irrigation farming, dry farming, soil fertility, soil surveying, soil biology, and soil management and utilization. The purpose of the major curriculum in Soils (page 160) is to give the student thorough training in fundamentals of agriculture, making him competent to manage a farm or preparing him for positions in State or Federal service. The wealth of Oregon rests in her soil and water resources, and their intelligent development, management, and preservation. With the further extension of reclamation, there will be a greater demand for men who have a knowledge of how most successfully and economically to use water which the engineer's canals and reservoirs provide. These men must know the best time, amount, and method of irrigation, and the effects of irrigation upon soils and crops. They should also know the relations between soils, soil waters, and drainage, and understand how to locate and construct drains and to treat or fertilize the soil so as to obtain the highest possible efficiency for each unit of tiling or fertilizer employed.

Equipment. The Soils laboratories are equipped with apparatus for complete study of physical and chemical properties of soils and problems of soil management. Ample desk room, supplied with running water, gas, compressed air, and electricity, is available. Electric centrifuges and shakers, electric bridge for alkali testing, electric air baths, analytic and torsion balances, microscopes, blast lamps, aspirators, percolators, capillary tubes, mulch cylinders, soil sieves, scales, solution balance, compression filters, soil sampling tubes, moisture equivalent centrifuge, furnace, hoods, soil solution displacement apparatus, hydrogen electrode, conductivity equipment, etc., form a part of the equipment for the work in Soils. Soil surveying and mapping outfits, soil survey charts of the United States, and a collection of samples of the chief soil types of Oregon and the United States are available. The soil preparation room is equipped with soil-grinding and sifting machinery, and space for drying, preparation, and storage of large quantities of the different soil types used in the laboratories. For field work in drainage and irrigation, surveying instruments, tiles, and ditching tools, weirs, flumes, hook gauges, water-stage register, electric pumping plant, etc., are available. Weather-recording instruments of different kinds supply equipment for the course in Climatology. Laboratories and greenhouses afford opportunities for studies of the movement and retention of irrigation water in soil, the effects of irrigation upon soils and crops, the effect of tile drainage upon soils of different types, their rate of drainage, etc. On the College farm the students build weirs, measure water, lay out distribution systems, make cement pipes for laterals, and test pumping machinery. On the drainage plots, the rate of discharge is measured and the effects of drains and soil conditions on water-table are studied. The Exhibit Room is equipped with cases and racks for display of soil sample collections, subsoils, hard-pans, soil analyses, soil colors, soil drainage and irrigation exhibits, etc. A well-stocked reference library is available. The Experiment Station farms at Corvallis and in other parts of the state, together with the cooperative trials in different counties, afford opportunity for field study of soil problems.

Research. The department of Soils is well equipped for offering research work. The experiment fields, soil tanks, laboratories, and library, and the plans and methods used in soil, irrigation, and drainage investigations afford valuable opportunities to graduate students.

DESCRIPTION OF COURSES

LOWER DIVISION COURSES

Sls 211, 212. **Soils.** First and second terms, 3 hours each term.

Origin, formation, and classification of soils; study of the physical properties of soil moisture, heat, and air; effects of tillage, drainage, and irrigation; plant foods and soil fertility; fertilizers; crop rotations; manures; acid and alkali soils. Prerequisite: Ch 201, 202, 203. Two lectures; 1 three-hour laboratory period. Professor Ruzek, Assistant Professor Torgerson.

Sls 213. **Soil Drainage and Irrigation.** Third term, 3 hours.

Soil mapping, reclamation, and use; use of chain, level, and soil auger as applied to design; installation of tile drains or irrigation systems; their effect upon soils and crops; costs and benefits. Two lectures; 1 three-hour laboratory period. Professor Ruzek.

Sls 214. **Forest Soils.** Third term, 3 hours.

Origin, development, characteristics, and classification of forest soils; relation to vegetation, moisture reaction and fertility; forest nursery soil management, use and conservation. Two lectures, 1 three-hour laboratory period. Associate Professor Stephenson.

Sls 215. **Soil Improvement.** Third term, 2 hours.

Soil fertility gains and losses, maintenance and improvement; effect of manures, fertilizers, and crop rotations on soil productiveness. Required of students in Landscape Architecture. Two lectures. Associate Professor Stephenson.

UPPER DIVISION COURSES

Sls 311. **Irrigation Farming.** First term, 3 hours.

Methods of obtaining, distributing, and conserving irrigation waters; handling of different crops under irrigation; costs and profits; duty of water in various districts of Oregon; water rights, field and laboratory studies of irrigation qualities of different soils; laying out of irrigation systems. Two lectures; 1 three-hour laboratory period. Professor Powers.

Sls 312. **Irrigation Farming Lectures.** First term, 2 hours.

Special course for Irrigation Engineering students or other students who cannot take the laboratory course in Irrigation Farming. Two recitations. Professor Powers.

Sls 317. **Dry Farming.** Second term, 2 hours.

Advanced study of the subject of moisture conservation, special tillage methods and machinery, soil and climatic conditions in dry-farming regions, with particular reference to Oregon and northwestern states. Prerequisite: Sls 211 or 212. Two recitations. Offered alternate years. Professor Powers.

Sls 319. **Climatology.** Third term, 2 hours.

Practical meteorology; observing and recording local weather and forecasting; a study of the climate of Oregon and the effect of climate upon agriculture. One recitation; 1 two-hour laboratory period. Offered alternate years. Assistant Professor Torgerson.

Sls 327. **Soil Survey.** Third term, 3 hours.

For the advanced student who desires preparation for service at state experiment stations or in the Government Bureau of Soils. Study of the classification of soils and soil areas of the United States, of Oregon, and of the Northwest; much work in making regular and completed soil surveys of assigned areas, including field trips of inspection, with a report thereon. Prerequisite: Sls 421 or 424. One recitation; 2 three-hour laboratory periods. Offered alternate years. Assistant Professor Torgerson.

Sls 401. **Soil, Drainage or Irrigation Work.** Three terms, 3 hours each term.

The advanced student may study the various soil types of Oregon through mechanical analysis, and other physical tests; may undertake field work in soil surveying and mapping; or, through wire-basket pot-

culture and field-plot tests, may determine the effects of various systems of cropping or fertilizing, or of soil bacteria, upon soil fertility. Prerequisite: Sls 421, 424. Professors Powers and Ruzek.

Sls 407. **Seminar.** Three terms; 1 hour each term.

Semi-weekly meetings, alternating with those of the Soils Improvement Club, at which papers on soils subjects are read and discussed. Papers are prepared under supervision of the department. Professors Powers and Ruzek, Associate Professor Stephenson.

Sls 411. **Western Land and Water Laws.** Second term, 3 hours.

A brief history of the development of water laws. Homestead laws, water rights, and irrigation codes in the different states, particularly in the Northwest and Oregon; appropriation, adjudication, and administration of water; reclamation and other Government and State land acts affecting reclamation development; organization and administration of irrigation districts and projects; water users' associations, etc.; discussion of public questions relating to reclamation. Three recitations. Professor Powers.

Sls 414. **Irrigation Investigations.** First term, 3 hours.

Irrigation literature and methods of irrigation investigation; field and laboratory studies of irrigation experiments; calculation of depth of water applied and of the most economical production thereby obtained; costs and profits connected with irrigation; analysis of data and preparation of a thesis. Field examinations are made, where possible, of some of the largest projects in the state. One lecture; 2 three-hour laboratory periods. Professor Powers.

Sls 418. **Land Drainage.** Third term, 3 hours.

Field study of roads, oil, and sanitary drainage; actual surveying, laying out, drafting of plans, estimation of cost, and installation of drainage systems; preparation of a complete report on the organization of a drainage district. Prerequisite: Sls 211. One recitation; 2 three-hour laboratory periods (week-end). Professor Powers.

Sls 421. **Soil Physics.** First term, 5 hours.

Origin, formation, physical composition, and classification of soils; soil moisture, surface tension, osmosis, capillarity, diffusion, aeration, temperature, and the resulting alteration in crop-producing power; influence of washing, drainage, and irrigation upon soils; laboratory determination and comparison of physical properties of various soil types; physical effect of mulches, rotations, and cropping; soil sampling and judging; mechanical analysis of soils. Prerequisite: Sls 212, 213. Three recitations; 2 two-hour laboratory periods. Associate Professor Stephenson.

Sls 422. **Soil Physics.** First term, 3 hours.

Similar to Sls 421, but without laboratory work, for Agriculture students unable to take the regular course in Soil Physics and for students in Irrigation Engineering. Three recitations. Associate Professor Stephenson.

Sls 424. **Soil Fertility.** Second term, 5 hours.

Advanced work in composition and values of fertilizers and barnyard and green manures; maintenance and improvement of fertility;

effect of the various crops and different systems of farming upon the fertility of the soil; crop rotations and fertility in different sections of the state and the United States; field-plot and pot-culture investigations. Prerequisite: Sls 421. Three recitations; 2 three-hour laboratory periods. Professor Ruzek.

Sls 425. **Soil Fertility Lectures.** Second term, 3 hours.
Same as Sls 424, except no laboratory work. Three recitations. Professor Ruzek.

Sls 428. **Soil Management.** Third term, 5 hours.
Occurrence, composition, characteristics, productivity, plant-food requirements, comparative values, and management of different soil types. Prerequisite: Sls 424. Two recitations; 3 three-hour laboratory periods. Professor Powers.

GRADUATE COURSES

Sls 501. **Graduate Study and Research.** Terms and hours to be arranged.
Special laboratory investigation and library study of graduate character. Professors Powers and Ruzek, Associate Professor Stephenson.

Sls 503. **Graduate Thesis.** Terms and hours to be arranged.
Courses for graduate students either as major or minor. Students may select problems in soil physics, analysis, surveying, fertility, irrigation, drainage, soil management, dry-farming, or related subjects. The work of the three terms is limited to a total of 12 credits. Professors Powers and Ruzek, Associate Professor Stephenson.

Sls 507. **Graduate Seminar.** Three terms, 1 hour each term.
A thorough, critical study of advanced research in soils and reclamation, and their relation to plant nutrition. Prerequisite: graduate standing in soils or related courses. One two-hour recitation period. Professors Powers and Ruzek, Associate Professor Stephenson.

Sls 511. **Pedology.** First term, 2 hours.
Advanced soil classification and management. Critical study of soil-forming processes; evolution of soil profiles; principles of soil classification and utilization. Problems of land classification; distribution of soils of the United States in relation to vegetation and crops, geology, physiology, and climate. Limited to advanced and graduate students. Two recitations. Professor Powers.

Sls 512. **Soil Colloids.** Second term, 2 hours.
Study of the physical chemistry of soils with special reference to the nature and function of soil colloids, soil acidity, absorption, and base exchange. Limited to advanced and graduate students. Two recitations. Associate Professor Stephenson.

Sls 513. **Plant Nutrition.** Third term, 2 hours.
Advanced study of soil, water, and plant relationships and external factors that are controllable by agricultural practices. The character of the soil solution in relation to the nutrient requirements of plants.

Limited to advanced and graduate students. Two recitations. Professor Powers.

Sls 514. **Soil Organic Matter.** Second term, 2 hours.
Study of soil organic matter and humification processes, chemical and physical properties of humus, effect on soil reaction, biological processes and nutrient supplying power of the soil; relation of humus to soil conservation and to plant growth and adaptation. Two recitations. Associate Professor Stephenson.

Veterinary Medicine

THE object of the courses in Veterinary Medicine is to help fit the student for the successful handling of livestock. Anatomy and physiology of domestic animals familiarize the student with the normal structures and functions of the animal body, thus laying a foundation for courses in judging, breeding, feeds and feeding, nutrition, and diseases of animals.

The work in diseases is taken up from the standpoint of the livestock owner. The students learn to recognize diseases, to care for sick animals, and to prevent disease through proper methods of sanitation and management. The importance of quarantine, the different methods of control and eradication of disease, and the role of the stock owners in maintaining this work are considered.

Equipment. This department has its offices, physiological laboratory, and lecture room in the Poultry Building. The Veterinary Clinic building is equipped for dissection, autopsies, and clinics.

DESCRIPTION OF COURSES

LOWER DIVISION COURSES

VM 211. **Anatomy of Domestic Animals.** First or second term, 3 hours.
A laboratory course in the anatomy of domesticated animals. Special attention is given to the digestive systems of the horse and the cow; to the foot, the teeth, and the muscles of locomotion of the horse. The work includes complete dissection of the digestive, urinary, genital, and respiratory systems, and partial dissection of the circulatory, muscular, and nervous systems. Prerequisite: Z 130 or equivalent. Three two-hour laboratory periods. Assistant Professor Shaw and Dr. Muth.

VM 221, 222. **Physiology of Domestic Animals.** Second and third terms, 3 hours each term.
Study of the functions of the body; the physiological processes of all domestic animals with emphasis on the horse and the cow. Prerequisite: VM 211. Two lectures; 2 two-hour laboratory periods. Professor Simms, Assistant Professor Shaw, and Dr. Muth.

UPPER DIVISION COURSES

VM 311. **Anatomy of the Fowl.** Second term, 3 hours.
A study of the structure of the body of the fowl. Two lectures; 2 two-hour laboratory periods. Professor Johnson.

VM 321. **Physiology of Domestic Animals.** First term, 3 hours.
Study of the functions of the body; the physiological processes of all domestic animals, with emphasis on the horse and the cow. Prerequisite: VM 221, Ch 221 or their equivalent. Three lectures; 1 two-hour laboratory period. Professor Simms, Assistant Professor Shaw and Dr. Muth.

VM 341. **Diseases of Livestock.** First term, 4 hours.
A one-term course for students specializing in the Plant Group. The more common diseases, with methods of prevention and control, are considered. Two lectures; 2 recitations. Assistant Professor Shaw.

VM 351. **Diseases of Poultry.** Third term, 3 hours.
The parasitic, infectious, and non-infectious diseases of poultry; emphasis upon methods of prevention and control of the parasitic and infectious diseases; observations of autopsies, method of diagnosis, and treatment of fowls. Three recitations; 1 two-hour laboratory period. Professor Johnson.

VM 361. **Parasitic Diseases of the Domestic Animal.** Second term, 3 hours.
The intensive study of the common parasitic diseases of domestic animals. Two lectures; 2 two-hour laboratory periods. Professor Simms.

VM 441, 442, 443. **Diseases of Livestock.** Three terms, 3 hours each term.
The parasitic, infectious, and non-infectious diseases of domesticated animals. Prerequisite: VM 221, 321, or equivalent. Two recitations; 1 two-hour laboratory period. Professor Simms, Assistant Professor Shaw.

GRADUATE COURSES

VM 501. **Graduate Research.** Terms and hours to be arranged.
Problems in animal diseases. Professors Simms and Johnson.

VM 503. **Graduate Thesis.** Terms and hours to be arranged.
Problems in animal diseases. Professors Simms and Johnson.

School of Education

Faculty

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

CARL WALTER SALSER, Ed.M., Assistant Dean of the School of Education; Head of Personnel and Placement Service.

CLYTIE MAY WORKINGER, Personnel and Placement Secretary.

RUTH LANO, Secretary of the School of Education.

Agricultural Education

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

OLIVER KENNETH BEALS, B.S., Critic Teacher in Agricultural Education.

Commercial Education

BERTHA WHILLOCK STUTZ, M.S., Associate Professor of Secretarial Science.

MIRIAM EGAN SIMONS, M.A., Critic Teacher in Commercial Education.

Education

CARL WALTER SALSER, Ed.M., Professor of Education; Head of Department.

HERBERT REYNOLDS LASLETT, Ph.D., Professor of Educational Psychology; Director of Supervised Teaching.

ERNEST WILLIAM WARRINGTON, M.A., Professor of Religion.

FRANK WINTHROP PARR, Ph.D., Professor of Secondary Education.

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

GRANT ALEXANDER SWAN, B.S., Assistant Professor of Physical Education.

Home Economics Education

FLORENCE BLAZIER, Ph.D., Professor of Home Economics Education; Head of Department.

FRANCES WRIGHT JONASSON, B.S., State Supervisor and Teacher Trainer in Vocational Home Economics.

MERLE BONNEY DAVIS, B.S., Critic Teacher in Home Economics Education.

RUTH MORRIS FOREST, B.S., Critic Teacher in Home Economics.

Industrial Education

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

ORVILLE DANIEL ADAMS, M.S., Associate Professor of Trade and Industrial Education.

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

General Statement

THE general purpose of the School of Education, operating jointly at the University and the State College, is to organize and correlate all the forces under the control of the State Board of Higher Education which have for their ultimate aim growth in educational efficiency in the state of Oregon so far as the training of teachers for the high schools of the state is concerned, together with all other forms of education not distinctly elementary.

The preparation of teachers for high schools is provided on a parallel basis for assigned specialties at the University and the State College under the control of the Director of High School Teacher Training at Eugene.

At the State College are given major curricula preparing for teaching of biological and physical sciences, mathematics, agriculture, home economics, industrial arts, secretarial science, and approved combinations of subjects, and for educational and vocational guidance.

At the University are given general education courses, training for educational administrators, and major curricula preparing for teaching of literature, languages, arts and music, physical education, the social sciences, business administration, and approved combinations of subjects, and for work with atypical children.

In planning the curricula three principles have been observed: first of all, every teacher should be a master of the subject-matter which he is to teach; second, every teacher should understand the minds of the pupils to be taught and the professional problems to be met; third, every teacher should have a broad and liberal education so that he may fill his proper place in the citizenship of community, state, and nation.

School of Education Offices. The offices of the School of Education are in Shepard Hall, second floor. Practice teaching is carried on in both the senior high school and the junior high school of Corvallis.

Student Programs. It is assumed in the School of Education that no two students will take or need exactly the same courses. Consequently, special attention is given each student in planning his work and in making necessary adjustments in it from time to time. Members of the Education staff constitute a personnel clinic and give much of their time to individual work with students.

Supervised Teaching. Facilities are provided for supervised teaching in all the respective major subject-matter fields. Students have the opportunity of observing the application of the special methods of teaching, and then may acquire, under supervision, such skill as will lead to the actual work of the school. Model lessons by the supervisors in charge serve as illustrations to guide the student teachers in the applications of the principles underlying instruction. Lesson plans are worked out. Eventually supervised teaching is done.

All credit earned in supervised teaching is subject to the approval of the Director of Supervised Teaching.

Students must do their supervised teaching in some field in which major work is allocated to the State College, except that students minoring in physical education may do their supervised teaching in physical education when approved by the Director of Supervised Teaching.

Appointment Bureau. Full information is collected concerning the preparation and experience of graduates who are prepared and qualified to teach. This information is available at all times to superintendents and boards of education. Certification requirements and the school laws of other states are made available to students. Graduates elected to teach in other states are recommended for certificates when endorsed by the Dean of the School of Education and the Registrar. To pay in part for preparing credentials a fee of two dollars is charged for registration, and a fee of one per cent of the first year's salary is charged all who are placed in teaching positions through the appointment bureau. A postage fee of 25¢ is charged when papers are sent at the request of the candidate.

Baccalaureate Degrees. The degree of Bachelor of Arts or Bachelor of Science is conferred upon the students of the School of Education who have met the requirements for the respective degrees.

The degree of Bachelor of Science in Education is conferred upon students of the School of Education on completion of 192 term hours including the prescribed curriculum of the School of Education. At least 27 term hours in upper division Education courses must be submitted.

Graduate Degrees. The School of Education as a department of the Graduate Division at the State College offers the M.A. and M.S. degrees under those conditions and procedures which apply in the case of other branches of the State College. The regulations governing graduate study are given under Graduate Division.

Teachers' Certificates. Graduates are entitled to teaching certificates as provided in the Oregon school law. Applicants must apply for certification to the State Superintendent of Public Instruction. The records of all graduates who apply for the Secondary Certificate are furnished to the State Superintendent by the Registrar of the State College as a part of the application for the certificates. Certificates are issued also to acceptable graduates of other standard colleges and universities who have had at least 15 semester hours (23 term hours) in education.

The general regulations governing certification are as follows:

(1) One-year state certificates shall be issued without examination, upon application, to such graduates of standard colleges and universities, authorizing them to teach only in the high schools of this state.

(2) The holder of a one-year state certificate, issued in accordance with the provisions of this section, shall, after six months' successful teaching experience in this state and upon the recommendation of the county superintendent of the county in which the applicant last taught, receive without examination, a five-year state certificate authorizing him to teach only in the high schools of this state.

(3) The holder of a five-year certificate issued in accordance with the provisions of this section shall, after thirty months' successful teaching experience in this state and upon the recommendation of the county superintendent of the county in which the applicant last taught, receive, without examination, a state life certificate authorizing him to teach only in the high schools of this state.

(4) The holder of a one-year state certificate or a five-year state certificate or a state life certificate, secured in accordance with the provisions of this section is thereby authorized to act as city superintendent of the schools of any city.

(5) High school certificates are granted only to applicants who present credits amounting to at least three term hours each in Educational Psychology, Secondary Education, Principles (Technique) of Teaching and Supervised Teaching.

Fees are as follows, payable to the State Superintendent of Public Instruction at the time the application for certification is made:

One-year certificate	$2.00
Five-year certificate	3.00

Requirements for the Teaching Certificate. In conformity with the foregoing, the School of Education designates courses Ed 311, 312, and 313 as courses to be taken during the junior year for certification, and as prerequisites for other advanced courses in the department, and Ed 315, Supervised Teaching, to be taken during the senior year.

Graduation Requirements. Applicants for the bachelor's degree from the School of Education will submit 36 term hours of Education, not less than 27 of which will be upper division courses. The courses required for certification are stated in the paragraph above. In every case Elementary Psychology is a prerequisite for the advanced courses in Education but may not be counted in filling the 36-hour requirement. In addition to the 36-hour requirement in Education itself, candidates for graduation will submit also at least two subject-matter norms (see Norms for Prospective Teachers, page 207). Three subject-matter norms and an extra-curricular activity are recommended for every prospective high school teacher. At least one of these norms must be in the field in which major work is allocated to the State College.

Special Requirements. In the case of elementary year-sequences in the sciences, foreign languages, stenography or typing, the entire year-sequence must be completed (e.g., Ch 101, 102, 103) before credit is allowed. If an elementary foreign language is undertaken in this institution, two years of it must be completed if it is to be counted toward graduation in the School of Education.

Professional Curricula

THE following courses of study show the work in the School of Education that should be followed by students who are intending to become high school teachers or whose special interest lies in the fields of secondary education or guidance and counseling. Related work in other schools is shown only when it is necessary in building the proper curriculum.

SUGGESTED COURSES FOR NORMAL SCHOOL GRADUATES

Junior Year	Term hours 1st	2d	3d
Secondary Education (Ed 311), Principles of Teaching (Ed 313), Educational Psychology (Ed 312)	3	3	3
Principles of Economics (Ec 201, 202, 203)	3	3	3
Senior Year			
Adolescence: Its Psychology and Pedagogy (Ed 420)	---	---	3
Measurement in Secondary Education (Ed 416)	---	3	---

Normal school graduates will take Ed 311 and 313 in the junior year, also Ed 312 in case this field has not been covered previously. Two terms are required from Ed 420, 454, 528. The remaining hours in education are elective.

Norms: One teaching norm is required. If possible, one major and one minor norm, or two minor norms, should be met.

SUGGESTED COURSES FOR PROSPECTIVE HIGH SCHOOL TEACHERS

A. Senior High School Teachers

Freshman Year	Term hours 1st	2d	3d
Methods of Study (Ed 101)	3	---	---
Mental Hygiene (Ed 102)	---	3	---
Introduction to Education (Ed 103)	---	---	3
Sophomore Year			
Elementary Psychology (Psy 201, 202, 203) (no education credit)	3	3	3
Elementary Psychology Laboratory (Psy 204, 205, 206) (no education credit)	1	1	1
Junior Year			
Secondary Education (Ed 311)	3	---	---
Educational Psychology (Ed 312)	---	3	---
Principles of Teaching (Ed 313) (may be taken in senior year but must precede supervised teaching)	---	---	3
Measurement in Secondary Education (Ed 416)	---	---	3
Senior Year			
Special Methods	3 *or*	3	---
Supervised Teaching (Ed 315)	5	2	---
	or	2	5
One or more terms from Ed 420, 454, and one other course in Secondary Education	---	---	3

The remaining hours in education are elective.

B. Junior High School Teachers

Freshman and Sophomore Years

Same as for Senior High School Teachers.

Junior Year	Term hours 1st	2d	3d
Secondary Education (Ed 311)	3	---	---
Educational Psychology (Ed 312)	---	3	---
Principles of Teaching (Ed 313) (Must precede supervised teaching)	---	---	3
Measurement in Secondary Education (Ed 416)	---	---	3
Senior Year			
Supervised Teaching in Junior High School	5	2	---
	or	2	5
Adolescence: Its Psychology and Pedagogy (Ed 420), Civic Education (Ed 489)	---	3	3

Normal school graduates will take Ed 311, also 312, in case this field has not been covered previously, and Supervised Teaching in the Junior High School. The remaining hours in education are elective.

CURRICULUM FOR EDUCATIONAL AND VOCATIONAL GUIDANCE

The following general sequence of courses is suggested for those students looking forward to work as counselors, deans of girls, deans of boys, teachers of occupations courses, and other phases of guidance work in connection with the public schools and other social agencies and organizations.

Freshman and Sophomore Years	Term hours 1st	2d	3d
Methods of Study (Ed 101)	3	---	---
Mental Hygiene (Ed 102)	---	3	---
Introduction to Education (Ed 103)	---	---	3
English Composition (Eng 111, 112, 113)	2–3	2–3	2–3
Physical or Biological Science	3–4	3–4	3–4
Elementary Psychology (Psy 201, 202, 203)	3	3	3
Elementary Psychology Laboratory (Psy 204, 205, 206)	1	1	1
Principles of Economics (Ec 201, 202, 203)	3	3	3
History Cycle	3	3	3
Extempore Speaking (Sp 111, 112, 113)	3	3	3
Junior Year			
Secondary Education (Ed 311)	3	---	---
Educational Psychology (Ed 312)	---	3	---
Principles of Teaching (Ed 313)	---	---	3
Elements of Sociology (Soc 201, 202, 203)	3	3	3
Adolescence: Its Psychology and Pedagogy (Ed 420)	---	---	3
Educational Sociology (Soc 314)	3	---	---
Measurement in Secondary Education (Ed 416)	---	---	3
Literature (English or American)	3	3	3
Senior Year			
Vocational Guidance (Ed 485)	3	---	---
Occupational Information (Ed 487)	---	3	---
Vocational Counseling (Ed 486)	---	---	3
Supervised Teaching (Ed 315)			
Statistical Method in Education (Ed 417)	3	---	*or* 3
Civic Education (Ed 489)	3	---	---
Individual Investigation			

CURRICULUM FOR PROSPECTIVE TEACHERS OF GENERAL AGRICULTURE AND GENERAL SCIENCE

This curriculum is designed to serve the following purposes:

1. To make it possible for high schools of moderate size to obtain teachers prepared to offer a combination of courses in the fields of agriculture and natural and social sciences.
2. To familiarize prospective teachers of the natural and social sciences with concrete situations, materials, and problems in agriculture and rural life valuable in vitalizing the instruction.
3. To aid students in discovering problems and procedures involved in interpreting and achieving social conceptions of science and education in a changing agricultural and industrial civilization.
4. To prepare teachers to give to mixed high school classes of boys and girls, town and country students alike, an understanding of rural and urban interdependencies, and the new issues, trends, and problems of the present-day social and economic organization of which the agricultural industry is an integral and significant part.
5. To prepare teachers who can offer a separate course in agriculture for farm boys mainly for its vocational and vocational guidance values.
6. To prepare teachers who have ability to conduct adult classes in the study of social, economic, and agricultural problems on the group thinking and conference basis.

Freshman Year	Term hours 1st	2d	3d
Methods of Study (Ed 101)	3	---	---
Mental Hygiene (Ed 102)	---	3	---
Introduction to Education (Ed 103)	---	---	3
English Composition (Eng 111, 112, 113)	3	3	3
General Botany (Bot 201, 202)	3	3	---
Principles of Zoology (Z 130)	---	---	3
Elementary General Chemistry (Ch 201, 202, 203)	3	3	3
Agricultural Resources (AEc 111)	3	---	---
Stock Judging I (AH 111)	---	3	---
Military Science	1	1	1
[1]Physical Education	1–2	1–2	1–2
Electives in Agriculture	---	---	3
	17–18	17–18	17–18

[1]General Hygiene, 2 term hours, is taken one term in place of Physical Education.

Suggested Electives in Agriculture	Term hours 1st	2d	3d
Elements of Horticulture (Hrt 111)	---	---	3
Cereal Production (FC 111)	---	---	3
Forage and Root Crop Production (FC 211)	---	---	3
Sophomore Year			
Principles of Economics (Ec 201, 202, 203)	3	3	3
General Sociology (Soc 211)	---	---	4
Outlines of Psychology (Psy 211)	---	4	---
Soils (Sls 211, 212)	3	3	---
Principles of Plant Pathology (Bot 351)	4	---	---
General Bacteriology (Bac 204)	---	3	---
Military Science	1	1	1
Physical Education	1	1	1
Electives in Agriculture	(3)	*or*	3
Electives	5	2	5
	17	17	17
Suggested Electives in Agriculture			
Elements of Dairying (DH 211)	3 or	3	---
Livestock Management (AH 221)	3	---	*or* 3
Practical Poultry Keeping (PH 211)	3 or	3	---
Junior Year			
Public Finance (Ec 418)	---	4	---
Modern Governments (PS 201, 202)	4	4	---
Principles of Agricultural Marketing (AEc 441)	4	---	---
Cooperative Marketing Organization (AEc 411)	---	---	3
Principles of Farm Management (FM 211)	---	---	3
Animal Nutrition (AH 411)	---	---	4
Educational Psychology (Ed 312)	3	---	---
Secondary Education (Ed 311)	---	3	---
Principles of Teaching (Ed 313)	---	---	3
Electives	6	6	4
	17	17	17
Suggested Electives			
International Organization and World Politics (PS 407)	---	---	4
Civic Education (Ed 489)	3	or	3
Character Education (Ed 490)	---	3	---
Character Education Problems (Ed 492)	3	---	---
Senior Year			
Rural Finance (AEc 431)	---	3	---
Farm Organization (FM 411)	---	3	---
Enterprise Costs and Profits (FM 414)	---	---	3
Teaching General Agriculture and Related Science (Ed 321)	---	3	---
Rural Education (Ed 341)	---	3	---
Supervised Teaching (Ed 315)	---	3	3
Electives	16	3	11
	16	18	17
Suggested Electives			
International Trade (Ec 440)	4	---	---
Money and Banking (Ec 413)	---	---	4
History of American Civilization (Hst 224, 225, 226)	3	3	3
Character Education Problems (Ed 492)	3	---	---
Methods in Teaching Evening and Part-Time Classes in Agriculture (AEd 313)	---	2	---
Vocational Education (Ed 488)	---	3	---

Norms for Prospective Teachers

NO graduates will be recommended for teaching positions who have not completed, in addition to the professional requirements in Education and Psychology, the academic preparation outlined under either *A* or *B* below:

A. For students whose major courses are included in the subjects commonly taught in the high schools of the state—namely, biological science, general science, commercial branches, English, French, German, history, home economics, industrial arts, Latin, mathematics, music, physical education, physical science (physics and chemistry), and Spanish—the requirement is a major course of study including a major norm and a minor norm. Two minor norms should be completed, if possible, as insuring better opportunities for placement.

B. For students whose major courses are not included in the foregoing list of subjects commonly taught in the high school, the requirement is two minor norms.

C. Certain subject-matter courses entirely outside the norms are of such great help in the placement of teachers that students should provide places for them in their programs for the junior and senior years. These comprise those courses offered for teacher-training students in such fields as oral English, extemporaneous speech, journalism, economics, sociology, political science, biology, and others. Students should consult with their advisers in the School of Education as to the specific courses offered for them by the respective departments.

Following is the list of major and minor norms intended to correspond to the main lines of high school teaching which are undertaken by State College graduates seeking recommendation.

Agriculture

MAJOR NORM	Term hours
Agricultural Economics:	
Agricultural Resources (AEc 111)	3
Principles of Agricultural Marketing (AEc 441)	4
Cooperative Marketing Organization (AEc 411)	3
Rural Finance (AEc 431)	3
Farm Management:	
Principles of Farm Management (FM 211)	3
Enterprise Costs and Profits (FM 415)	2
Farm Organization (FM 411)	3
Soils and Crop Production:	
Soils (SIs 211, 212)	6
Elements of Horticulture (Hrt 111) *or* Cereal Production (FC 111) *or* Forage and Root Crop Production (FC 211)	3
Animal Production:	
Stock Judging I (AH 111)	3
Animal Nutrition (AH 411)	4
Elements of Dairying (DH 211) *or* Dairy Herd Management (DH 322) *or* Livestock Management I (AH 221) *or* Practical Poultry Keeping (PH 211)	3
	40

MINOR NORM

	Term hours
Agricultural Economics:	
Agricultural Resources (AEc 111)	3
Principles of Agricultural Marketing (AEc 441)	4
Farm Management:	
Principles of Farm Management (FM 211)	3
Enterprise Costs and Profits (FM 415)	2
Soils and Crop Production:	
Soils (Sls 211, 212)	6
Elements of Horticulture (Hrt 111) *or* Cereal Production (FC 111) *or* Forage and Root Crop Production (FC 211)	3
Animal Production:	
Stock Judging I (AH 111)	3
Elements of Dairying (DH 211) *or* Dairy Herd Management (DH 322) *or* Livestock Management I (AH 221) *or* Practical Poultry Keeping (PH 211)	3
	27

Biological Sciences

MAJOR NORM

General Zoology	9
General Botany	9
[1]Elementary Entomology	3
[1]General Bacteriology	3
Electives in the field of biology	9–12
	33–36

MINOR NORM

General Zoology	9
General Botany	9
[1]Elementary Entomology	3
[1]General Bacteriology	3
	24

General Science

MAJOR NORM

Physical Science—lower division work, including one year-sequence	16
Biological Science—lower division work, including one year-sequence	15
Biological or Physical Science—upper division work	6
	37

MINOR NORM

Physical Science—lower division work, including one year-sequence	16
Biological Science—lower division work, including one year-sequence	15
	31

Note: Survey courses in science are counted in General Science norms only with the written approval of the student's adviser.

Home Economics

MINOR NORM

	Term hours
Foods:	
Principles of Dietetics (FN 225)	2
Foods (FN 220, 221, 222) for those electing Chemistry *or* Foods (FN 211, 212 213) for those not electing Chemistry	9
Clothing:	
Textiles (CT 250), Clothing (CT 211, 212) for those electing Art; *or* Clothing Selection (CT 217), Clothing Selection and Construction (CT 218, 219) for those not electing Art	9
Household Adiminstration:	
Child Development (HAd 320 or HAd 411, 412)	3–6
Household Management (HAd 340)	4
[2]Introduction to Home Economics (HAd 101)	3
	30–33

[1]Other electives in the field of biology may be substituted when these courses are not offered.

[2]HAd 101 will be taken by freshmen and sophomores; upper division students will substitute another course in Household Administration.

MAJOR NORM

The minor norm	30–33
Electives from at least two of the following groups to complete a total of 40 hours—	
A. *Foods*	
Food Purchasing (FN 411), 3 hours	
Experimental Cookery (FN 435), 3 hours	
Quantity Cookery and Catering (IEc 311), 3 hours	
Cafeteria Management (IEc 320), 3 hours	
B. *Clothing*	
House Furnishing (CT 231), 3 hours	
Applied Design (CT 335), 3 hours	
Costume Design (CT 311), 3 hours	10–7
Clothing (CT 312), 3 hours	
House Furnishing (CT 331), 3 hours	
House Furnishing (CT 431), 3 hours	
C. *Household Administration*	
Home Management House (HAd 350), 4 hours	
Behavior Problems (HAd 421), 2 hours	
Family Relationships (HAd 422), 2 hours	
Economic Problems of the Family (HAd 441), 3 hours	
	40

Industrial Arts

MAJOR NORM (Basic Major—Woodworking emphasis)

	Term hours
Methods in Woodworking (IA 112, 113)	6
Wood Turning (IA 220)	2
Fiber Furniture Weaving (IA 326)	2
Millwork—Machine Woodwork (IA 312)	3
Furniture Construction (IA 313)	2
Linear Drawing and Lettering (GE 111)	2
Mechanical Drawing (GE 112, 113)	4
Lower Division Drawing (AA 291)	3
Machine and Tool Maintenance (IA 225)	2
Wood and Metal Finishing (IA 316)	2
Trade Analysis (IEd 472)	3
The General Shop and Its Problems (IEd 473)	2
Written and Visual Teaching Aids (IEd 474)	3
	36

MINOR NORM

Methods in Woodworking (IA 112, 113)	6
Wood Turning (IA 220)	2
Fiber Furniture Weaving (IA 326)	2
Millwork—Machine Woodwork (IA 312)	3
Linear Drawing and Lettering (GE 111)	2
Mechanical Drawing (GE 112, 113)	4
Industrial Arts Organization (IEd 330)	2
Trade Analysis (IEd 472)	3
The General Shop and Its Problems (IEd 473)	2
	26

Mathematics

MAJOR NORM

Unified Mathematics (Mth 101, 102, 103 or equivalent)	12
[1]Differential and Integral Calculus or equivalent	12
Two terms of upper division mathematics	6
	30

MINOR NORM

Unified Mathematics (Mth 101, 102, 103 or equivalent)	12
[1]Differential and Integral Calculus or equivalent	12
	24

[1]Students may substitute two terms of calculus and one term of either Modern Geometry, Higher Algebra, or Theory of Equations and Determinants, for three terms of calculus.

Physical Sciences

MAJOR NORM

General Chemistry	15
General Physics	12
General Geology or advanced courses in chemistry or physics	9–12
	36–39

MINOR NORM

General Chemistry	15
General Physics	12
	27

Secretarial Science[1]

MAJOR NORM

Stenography (SS 111, 112, 113)	9
Typing (SS 121, 122, 123)	6
Constructive Accounting (BA 111, 112, 113)	12
Applied Stenography (SS 211, 212, 213)	9
Office Procedure (SS 311)	5
Business Law (BA 256)	4
	45

MINOR NORM

Stenography (SS 111, 112, 113)	9
Typing (SS 121, 122, 123)	6
Applied Stenography (SS 211, 212, 213)	9
	24

The following minor norms are available at the State College. These may fulfill requirements of a minor norm taken in conjunction with a major course of study or the two-minor-norm requirement. Superivsed teaching is not offered at the State College in the field of any of these minor norms, except physical education.

Art

MINOR NORM

	Term hours
Art Appreciation (AA 100, 101, 102)	9
Lower Division Drawing (AA 291)	3
Lower Division Decorative Design (AA 295)	3
Color and Composition (AA 162)	3
Elective courses in Commercial Design, Crafts, House Planning, Block Printing, Drawing	6
	24

Business Administration

MINOR NORM

Constructive Accounting (BA 111, 112, 113)	12
Typing (SS 121, 122, 123)	6
Business Law (BA 256)	4
Office Organization and Management (SS 313)	5
	27

English

MINOR NORM

Literature Survey (Eng 101, 102, 103) *or* Introduction to Literature (Eng 104, 105, 106)	9
Two terms of Shakespeare	6
English Composition for Teachers (Eng 324)	3
American Literature (Eng 161)	3
	21

[1]Students having had one year or more of typing or shorthand will receive advanced standing according to ability shown in placement test provided by the Department of Secretarial Science.

French

MINOR NORM

	Term hours
Twenty-seven hours above RL 1, 2, 3 (first year), including:	
Second Year French (RL 4, 5, 6)	12
French Literature (RL 311, 312, 313)	9
Electives approved by Department	6
	27

German

MINOR NORM

Twenty-seven hours above Ger 1, 2, 3 (first year) including:	
Second Year German (Ger 4, 5, 6)	12
German Literature	9
Electives approved by Department	6
	27

History, Civics, and Economics

MINOR NORM

History of Western Civilization (Hst 201, 202, 203)	9
The World Since 1914 (Hst 209)	3
History of American Civilization (Hst 224, 225)	6
Modern Governments (PS 201, 202)	8
	26

Music

MINOR NORM

Public School Music and Seminar	6
Sightsinging and Ear-training	6
Voice Class	6
Piano Class	6
	24

Unless the student has had previous training in piano, additional work may be needed to cope with the pianistic problems of school music. If the student is already competent in accompanying, the indicated requirement will be adjusted according to student's needs.

Orchestral Organization, while not required, is advised for students who may have to assist with school orchestras.

Physical Education

MINOR NORM (MEN)

Introduction to Physical Education (PE 121, 122, 123)	6
Technique of Gymnastics (PE 174)	2
Technique of Football, Track, and Field (PE 175)	2
Technique of Minor Sports (PE 176)	2
Technique of Baseball and Basketball (PE 274)	2
Technique of Boxing and Wrestling (PE 275)	2
Technique of Swimming (PE 276)	2
Coaching of Football (PE 347) Coaching of Basketball (PE 346) Coaching of Baseball (PE 348) Coaching of Track and Field (PE 349) — Three courses selected from this group	6
Minimum hours for recommendation to coach one or more sports in connection with other teaching work	24

MINOR NORM (WOMEN)

Introduction to Physical Education (PE 121, 122, 123)	6
Physical Education Laboratory (PE 124, 125, 126)	6
Physical Education Laboratory (PE 224, 225, 226)	6
Technique of Teaching Physical Education (Ed 344, 345)	6
	24

Spanish

MINOR NORM

Twenty-seven hours above RL 11, 12, 13 (first year), including:	
Second Year Spanish (RL 14, 15, 16)	12
Spanish Literature (third year) (RL 341, 342, 343)	9
Electives approved by Department	6
	27

Agricultural Education

THIS department is responsible for the training of teachers and supervisors of agriculture in elementary and secondary schools, and the training for leadership in rural life and education. Special attention is given to the training of directors, supervisors, and teachers of agriculture as provided for by the Federal law for vocational education known as the Smith-Hughes Act. Certain field studies and extension activities are included within the scope of this department's work.

The Department of Agricultural Education is a joint department within both the School of Agriculture and the School of Education.

Preparation for Teaching Agriculture. Teachers of agriculture need to have a fundamental knowledge and a high level of doing ability in most of the departmental fields of the School of Agriculture. On account of requirements very little provision can be made in the Agricultural Education curriculum for electives. In order to increase the number of electives that can be taken during a four-year period, courses in Psychology and Education may be taken in the Summer Session prior to the junior or senior year.

Former graduates of the School of Agriculture may prepare themselves very satisfactorily for teaching agriculture by returning for a fifth year of work during which they can elect certain courses in Agriculture that are fundamental for teaching and also complete the required courses in Education.

Requirements in Agriculture.

(1) Graduation from a college of agriculture of standard rank.

(2) The course requirements in Agriculture and Education (for Smith-Hughes teaching) can be met in either of two ways: first, by majoring in the Agricultural Education curriculum, which includes requirements in both Agriculture and Education; second, by pursuing one of the three other curricula in Agriculture in the sophomore year and any of the major curricula in General and Specialized Agriculture during the junior and senior years. The latter plan will be approved provided sufficient electives are available for meeting the course requirements in Agriculture as outlined in the Agricultural Education curriculum (School of Agriculture) as well as the 23 credits in Education.

(3). Depending on the student's previous training and experience and his choice of courses, 70 to 75 term hours of special work in Agriculture are required. The sequence and distribution of courses are given in the Agricultural Education curriculum. Regardless of the department in which the student majors he should have a minimum of subject-matter courses in the respective departments as follows:

(a) 9 hours in Agricultural Engineering
(b) 7 hours in Animal Husbandry
(c) 6 hours in Dairy Husbandry
(d) 6 hours in Horticulture

(e) 6 hours in Farm Crops
(f) 9 hours in Farm Management and Agricultural Economics
(g) 6 hours in Soils
(h) 3 hours in Poultry Husbandry
(i) 3 hours in Veterinary Medicine

As early as possible in his college course the prospective teacher should advise with the head of the Department of Agricultural Education regarding the courses he should select in each of the fields of agriculture mentioned above and the various qualifications essential in teaching vocational agriculture.

Requirements in Education. The courses in Education and Psychology required for state certification are described under the respective departments. The sequence and distribution of these courses are as follows:

Junior Year	Term hours 1st	2d	3d
[1]Educational Psychology (Ed 312)	3	---	---
Secondary Education (Ed 311)	---	3	---
Principles of Teaching (Ed 313)	---	---	3
Senior Year			
Special Methods in Agriculture (Ed 328)	5	---	---
[2]Supervised Teaching (Ed 315)	---	3	3
Methods in Teaching Evening and Part-Time Classes in Agriculture (AEd 313)	---	2	---
Rural Survey Methods (AEd 533)	---	---	2

Special Curricula in Agricultural Education will be outlined for students preparing to teach agriculture in city schools or a combination of subjects including Agriculture as requested in the smaller rural high schools. See page 206 for curriculum suggestion.

General Electives. Certain courses are open to all students in Agriculture and others who are interested in training for leadership in rural life. Special attention is called to Ed 341, Rural Education.

Graduate Study in Agricultural Education. Since the demands on teachers of agriculture the country over are becoming more exacting each year, graduate work in the fields of agriculture and education is desirable, and usually necessary for those who desire to enter the fields of supervision or teacher training. Programs of work leading to the master's degree are outlined by this department for students and teachers with approved standing.

DESCRIPTION OF COURSES*

UPPER DIVISION COURSES

AEd 313. **Methods in Teaching Evening and Part-Time Classes in Agriculture.** Second term, 2 hours.

Students in this course participate in recruiting, organizing, and teaching evening and part-time classes for both young and adult farmers in the vicinity of Corvallis. Problems arising therefrom form the basis of the course. Prerequisite: Ed 328. Professor Gibson.

Ed 407. **Education Seminar.** Two terms, hours to be arranged.

[1]Ed 312 must be preceded by Psy 211.
[2]Ed 315 may be taken any two terms.
*See also courses listed under Department of Education, especially Ed 321, 328, 341.

GRADUATE COURSES

Ed 501. Educational Research. Terms and hours to be arranged.
Problems in agricultural education. Professor Gibson.

Ed 503. Thesis. Terms and hours to be arranged.
The preparation of a thesis for an advanced degree.

Ed 505. Reading and Conferences. Terms and hours to be arranged.

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

AEd 516. Extension Course in Teacher Training, Any term, hours to be arranged.
Teachers of vocational agriculture in service who cannot be relieved of their professional duties to pursue courses that are offered in the Summer Session may make use of this course to continue their professional improvement. Personal conferences, follow-up instruction, and supervision, supplemented by correspondence and reports. Prerequisite: Ed 311, 312, 313, 328. Professor Gibson.

AEd 533. Rural Survey Methods. Third term, 2 hours.
The technique of making agricultural and rural education surveys, together with methods of analyzing, interpreting, and using the material and results as a basis for evaluating and formulating programs in Agricultural Education. Field studies required. Open to graduates with teaching experience and seniors by special permission. Prerequisite: Ed 311, 312, 313, 328. Professor Gibson.

Commercial Education

IN conjunction with the Department of Secretarial Science the School of Education is able to meet the demand for well-prepared teachers of commercial branches in secondary schools. In the selection of their collegiate courses in both secretarial science and education, students should advise with the School of Education. Teachers of commercial science are thus prepared in a way that will place them and their work on a parity with those of other longer established and more fully developed departments of the high school. The twenty-three term hours in Education required for a certificate to teach in accredited high schools must be earned during the junior and senior years.

DESCRIPTION OF COURSES*

GRADUATE COURSES

Ed 501. Educational Research. Terms and hours to be arranged.
Problems in commercial education. Associate Professor Stutz.

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

Ed 505. Reading and Conferences. Terms and hours to be arranged.

Ed 509. Seminar. Terms and hours to be arranged.

*See also courses in the Department of Education, especially Ed 329.

Education

INSTRUCTION given in Education covers the principles and the technique of teaching at the secondary and college levels, educational psychology, special methods in teaching the various major subjects in which the State College gives teacher training, the history and philosophy of education, and vocational guidance.

DESCRIPTION OF COURSES

LOWER DIVISION COURSES

Ed 101. **Methods of Study.** Any term, 3 hours.

Specific methods of study as applied to various subject-matter fields, together with the general principles of note-taking, study schedule, fixing study habits, and evaluations of the various broad fields of human learning. Three recitations. Professor Parr.

Ed 102. **Mental Hygiene.** Any term, 3 hours.

The conditions of healthy mental development and normal reactions to life and the college environment. Deals with the habits, attitudes, and proper functioning of a normal mind. Professor Chambers.

Ed 103. **Introduction to Education.** Any term, 3 hours.

Brief discussion of the meaning, function and scope of education; organization and function of each division of the American system. An orientation survey course of the entire educational field. Three recitations. Professor Parr.

UPPER DIVISION COURSES

Ed 311. **Secondary Education.** Any term, 3 hours.

An extensive study of the problems of the high school from the standpoint of the teacher, involving a consideration of its aims, functions, and characteristics. Prerequisite: Psy 201, 202, 203. Three recitations. Professor Parr.

Ed 312. **Educational Psychology.** Any term, 3 hours.

A study of the laws of learning and their application to the classroom; motivation in learning, transfer of training, memory, forgetting, and the psychology of secondary school subjects. Prerequisite: Psy 201, 202, 203. Three recitations. Professor Laslett.

Ed 313. **Principles of Teaching.** Any term, 3 hours.

Application of the laws of psychology to teaching; the significance of individual differences; the types of learning; aims and functions of secondary education; socialization; supervised study; measuring results. Prerequisite: Ed 312. Three recitations. Professor Clinton.

Ed 315. **Supervised Teaching.** Any term, 10 hours maximum.

Experience in classroom procedures along the lines of the student's academic preparation and interests. Prerequisite: Ed 311, 312, 313. Professor Laslett.

Ed 321. **Teaching General Agriculture and Related Science.** Second term, 3 hours.

For prospective teachers of science who may wish to be in a position to offer a separate course in agriculture or to strengthen their science teaching by the utilization of the materials in agriculture well adapted to apply the principles and laws of science commonly operative in the student's natural environment; aims, materials, methods. Three recitations. Prerequisite: Ed 311, 312, 313. Professor Gibson.

Ed 324. **Methods and Materials in Biological Science.** First term, 2 hours.

Investigation of kinds and sources of materials for botany and biology; equipment to be used; local materials to be had in various sections of Oregon; effective methods of organizing and presenting this material to high school pupils. Prerequisite: Ed 311, 312, 313.

Ed 325. **Methods and Materials in Physical Science.** First term, 2 hours.

Study and comparison of classroom procedures and laboratory technique in physics and chemistry; careful attention to supplies and equipment and their effective and economical use. Prerequisite: Ed 311, 312, 313.

Ed 326. **Methods and Materials in Mathematics.** Second term, 2 hours.

Selection and study of the essential elements of high school algebra, geometry, and trigonometry with consideration of the objectives and standards of mathematics teaching in the high school. Prerequisite: Ed 311, 312, 313.

Ed 328. **Special Methods in Agriculture.** First term, 5 hours.

Problems and methods of organizing and teaching vocational agriculture in high schools, in accordance with the provisions of state and federal legislation. Prerequisite or accompaniment: Ed 313. Five recitations. Professor Gibson.

Ed 329. **Special Methods in Commerce.** Second term, 3 hours.

Principles of education as used in the development of skills and precisions, largely motor, involved in the learning of such activities as are found in stenography, typing, and accounting. Lectures covering aims, materials, standards, methods of presentation, organization of courses, and arrangement of curricula. Prerequisite: BA 111, 112, 113; SS 311, 312; Ed 311, 312, 313. Three lectures. Associate Professor Stutz.

Ed 331. **Special Methods in Home Economics.** First term, 3 hours.

An introduction to the field of home economics education. Study of Smith-Hughes problems in home economics. Principles of teaching applied to home economics instruction. Prerequisite or parallel: Ed 313. Three recitations. Professor Blazier.

Ed 332. **Methods of Teaching Related Art.** First term, 3 hours.

Selection and organization of subject-matter in art in its application to vocational courses authorized under the Smith-Hughes act; special methods in teaching related art. Prerequisite or parallel: Ed 313. Three recitations. Professor Blazier.

Ed 333. **Special Methods in Industrial Arts.** Third term, 3 hours.

A study of methods for effective presentation of subject-matter in the industrial arts courses of the secondary schools; preparation of course outlines and lesson plans; classroom management and the organization of personnel. Prerequisite: Ed 311, 312, 313, IEd 330. Three recitations.

Ed 341. **Rural Education.** Second term, 3 hours.

Open to all students, prospective high school teachers and others alike, who desire to acquire some foundation for a philosophy of rural life and training for leadership in rural education. New methods of utilizing the student's rural, social, and economic environment as a means of vitalizing different phases of the high school instruction, social objectives of education, and increasing farm, home, and town-country efficiencies. Various forms of continuation and rural extension education for out-of-school youths and adults. Students in this course will actively participate in planning and executing studies and programs in rural education for high school pupils, out-of-school youths, and adults. Prerequisite: junior standing. Three recitations. Professor Gibson.

Ed 344, 345. **Technique of Teaching Physical Education (Women).** Two terms, 3 hours each term.

Required of all women minors during the junior year. Technique involved in the teaching of rhythm, sports, and related activities. Five periods.

Ed 407. **Education Seminar.** Any term, 1 or 2 hours.

Reports of current educational meetings, book reviews, discussions of special topics investigated by members. Prerequisite: Ed 311 312, 313. Professor Salser and staff.

Ed 411. **School Hygiene.** Third term, 2 hours.

A course in the health provisions requisite for the hygienic conduct of education. Oregon laws, regulations of the State Board of Health, and other state and local authorities explained in detail. Prerequisite: Ed 311, 312, 313; one term of biological science. Two recitations.

Ed 412. **School Sanitation.** Second term, 2 hours.

General sanitation of school yard and arrangement of buildings; toilets; plumbing; water supply; heat; light; ventilation; seats; blackboards and cleanliness. Prerequisite: Ed 311, 312, 313. Two recitations.

Ed 416. **Measurement in Secondary Education.** Any term, 3 hours.

A study of the construction and desirable uses of various standard tests and scales for measuring achievements in secondary school subjects. Such elements of statistical method will be given as are necessary for intelligent use of the tests. Prerequisite: Ed 311, 312, 313, or equivalent. Three recitations. Professor Clinton.

Ed 417. **Statistical Method in Education.** First or third term, 3 hours.

The fundamental elements only of statistical methods designed to furnish the basis for a scientific procedure in educational measurements; methods of treating collective facts, average facts, and cor-

related facts, as applied to giving and scoring tests, finding costs, etc. Prerequisite: Ed 416. Three recitations. Professor Clinton.

Ed 420. **Adolescence**: Its Psychology and Pedagogy. Third term, 3 hours.
The important physical, mental, and moral changes natural to adolescence. Attention is given to the laying of the foundation for the pedagogy of secondary instruction and to the elements of character education. Prerequisite: Psy 201, 202, 203; Ed 312. Three recitations. Professor Salser.

Ed 454. History of **Education**. First term, 3 hours.
A general review of the growth and development of education and its relation to the civilization of the times; with particular reference to the educational philosophies of Plato, Aristotle, Renaissance educators, Comenius, Locke, Rousseau, Pestalozzi, Froebel, Herbart, Herbert Spencer and Dewey. Prerequisite: Ed 311, 312, 313. Three recitations. Professor Salser.

Ed 461. Psychology of **Childhood**. First term, 3 hours.
A study of the mental development of the child. Native responses; play, self assertion, instinctive social attitudes; speech, emotions; simple mental processes; complex mental processes; mental organization. Prerequisite: Ed 311, 312, 313. Three recitations. Professor Laslett.

Ed 485. Vocational **Guidance**. First term, 3 hours.
The study of the means and methods of assisting students in junior and senior high schools in solving the problems of choosing, preparing for and making progress in a suitable vocation. Prerequisite: Ed 311, 312, 313 or equivalent. Three recitations. Professor Salser.

Ed 486. Vocational **Counseling**. Third term, 3 hours.
More advanced and technical than Ed 485. Aims to give prospective counselors, administrators, and parents an acquaintance with mental, achievement, and trade tests, together with some practice in the administration of such tests. Problems of classification; methods used in educational and vocational counseling. Prerequisite: Ed 485. Three recitations. Professor Salser.

Ed 487. **Occupational** Information. Second term, 3 hours.
Methods of collecting, analyzing, and evaluating source material having to do with local, state and national occupations. Prerequisite: Ed 311, 312, 313 or equivalent. Three recitations. Professor Salser.

Ed 488. Vocational **Education**. Second term, 3 hours.
The place and need of vocational education in a democracy with special emphasis upon the evolution of the philosophy of vocational education as a phase of the general education program. Prerequisite: Ed 311, 312, 313 or equivalent. Three recitations. Professor Gibson.

Ed 489. **Civic Education**. First or third term, 3 hours.
A study of the school as an instrument of society for transmitting its social inheritance; analysis of school organization, administration, school subjects, methods of instruction, extra-school activities, and methods of discipline with reference to their contribution to training for citizenship. Prerequisite: Ed 311, 312, 313 or equivalent. Three recitations. Professor Salser.

Ed 490. **Character Education.** Any term, 3 hours.

The place of character in the social purposes of education; distinction between training and instruction; the dynamic function of the feelings; the conditioning of interests; the function of ideals; the formation of habits; the integration of habits and attitudes. Analysis of typical procedure. Prerequisite: Ed 311, 312, 313 or equivalent. Three recitations. Professor Warrington.

Ed 491. **Group Thinking.** Third term, 3 hours.

This course proposes to study the nature and method of democratic participation in the group thought life to the end that these new issues and situations may be resolved on more adequate levels of thinking. It aims to build the habit of reflective group thinking, to develop greater facility in forming reasoned judgment on public affairs, to consider how the diversified groups may confer in cooperative efforts to discover new roads to new and better goals, and to study the technique of leadership in such a group thinking process. Prerequisite: Ed 491. Three recitations. Professor Warrington.

Ed 492. **Character Education Problems.** First term, 3 hours.

The bearing of social change on conduct; democratic participation in the group thought-life as a method of resolving new issues; how build the habit of group thinking; how develop facility in forming reasoned judgment; the study of the technique of leadership in the group-thinking process; examination of successful plans now in use; application to program building and the selection of activities. Prerequisite: Ed 490. Three recitations. Offered summer only. Professor Warrington.

Ed 498. **Organization and Supervision for High School Teachers.** Second term, 3 hours.

Given from the standpoint of the high school teacher. The teacher must understand administrative organization as well as the methods and purposes of supervision. Administrative organizations and supervisory plans are treated as they involve the classroom teacher. Prerequisite: Ed 311, 312, 313. Professor Clinton.

GRADUATE COURSES

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

In addition to the regular courses listed above, members of the staff stand ready to supervise research and investigation by qualified graduate students. Registration by permission of the staff member or members in whose field the investigation lies. Prerequisite: graduate standing in Education.

Problems in Agricultural Education—Professor Gibson.
Problems in Commercial Education—Associate Professor Stutz.
Problems in Educational Psychology—Professor Laslett.
Problems in Guidance—Professor Salser.
Problems in History of Education—Professors Salser and Blazier.
Problems in Home Economics Education—Professor Blazier.
Problems in Industrial Arts Education—Professor Cox.
Problems in Measurements—Professor Clinton.
Problems in Secondary Education—Professor Parr.
Problems in Social or Moral Education—Professor Warrington.

Ed 502. **Introduction to Thesis Writing.** First term, 2 hours.

This course is required of all graduate students in the School of Education who expect to be candidates for an advanced degree and will be open also to graduate students of other schools. The course

will deal with finding materials, thesis organization, types of research suited to problems, bibliography, etc. It will not take the place of individual direction and supervision of theses by various major professors in whose fields students choose to write their theses. Prerequisite: graduate standing. Professor Clinton.

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

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

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

Ed 521. **History of American Education.** Third term, 3 hours.
Lectures, reports, and discussions treating the intellectual development of America with special reference to education. Knowledge of American history a requisite. Open to seniors and graduates who have met the practice teaching requirement. Prerequisite: Ed 311, 312, 313 or equivalent. Three recitations. Professors Salser and Blazier.

Ed 524. **Curriculum Construction.** Second term, 3 hours.
The problems of building junior and senior high school curricula. Curriculum theories and policies since 1900; principles for selecting and organizing subject-matter; courses of study in various fields; principles of curriculum organization; type programs; important studies in this field. Prerequisite: Ed 311, 312, 313 or equivalent. Three recitations. Professor Parr.

Ed 526. **Construction and Use of Objective Examinations.** Third term, 3 hours.
Consideration will be given to the principles and statistics involved in the selection of test items and the validity and reliability of such items. Consideration will be given also to the various types of eximinations, their validity, realiability, directions for administering, directions for scoring, keys, and methods of grouping results. Prerequisite: Ed 416. Professor Clinton.

Ed 528. **Philosophy of Education.** Second term, 3 hours.
A study of the broad fundamental principles and problems of education, with some attempt at their solution. The meaning of philosophy; the philosophy of education; principal rules, formulae; the value of a correct philosophy of education for the teacher and school administrator. Prerequisite: Ed 311, 312, 313. Three recitations. Professor Salser.

Ed 555. **College and University Teaching.** One term, 2 hours.
Includes a consideration of mental tests in their application to college situations, the objective examination, other movements in the field of college teaching. The lectures and problems studied will be outlined by the members of the faculty best equipped to present them. Prerequisite: graduate standing in Education. Two recitations. Professor Parr.

Ed 556. **College and University Teaching.** One term, 2 hours.
Consideration is given in this one-term course to the pedagogy of particular college subjects offered by members of the

respective departments. Prerequisite: graduate standing in Education. Two recitations. Professor Parr.

Ed 561. **Advanced Educational Psychology.** Any term, 2 hours.
A discussion of the experimental material which seems most useful and relevant to educational psychology. Open to graduate students with preliminary training in education and psychology. Prerequisite: graduate standing in Education. Two recitations. Professor Laslett.

Home Economics Education

PROFESSIONAL training for prospective teachers of home economics is afforded by the Department of Home Economics Education. Any student having a scholarship record below average should confer with the Dean of the School of Home Economics before registering for teacher training work.

This department is a joint department within both the School of Home Economics and the School of Education.

DESCRIPTION OF COURSES*

UPPER DIVISION COURSES

HEd 401. **Research.** Terms and hours to be arranged.

HEd 403. **Thesis.** Terms and hours to be arranged.

HEd 405. **Reading and Conferences.** Terms and hours to be arranged.

HEd 411. **The Curriculum in Home Economics.** Any term, 3 hours.
A study of the basic principles of curriculum construction applied to the organization of home economics courses in secondary schools. Prerequisite: Ed 331. Three recitations. Professor Blazier.

HEd 413. **The Supervision of Home Projects.** Third term, 2 hours.
A study of the use of home projects in home economics instruction with field work in supervision of home projects. Prerequisite: HEd 411. One recitation; 1 two-hour laboratory period. Professor Blazier.

HEd 415. **Adult Education in Home Economics.** Second term, hours to be arranged.
Study of problems in the adult education program authorized under the Smith-Hughes Act. Field work in promoting, organizing, observing, and teaching adult classes. Prerequisite: HEd 411. Professor Blazier.

GRADUATE COURSES

Ed 501. **Educational Research.** Terms and hours to be arranged.
Problems in home economics education. Professor Blazier.

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

*See also courses in the Department of Education, especially Ed 331, 332.

HEd 505. Reading and Conferences. Terms and hours to be arranged.

HEd 507. Seminar. Terms and hours to be arranged.

Industrial Education

JOINTLY with the Department of Industrial Arts, the Department of Industrial Education trains teachers and supervisors in industrial arts education and in trade and industrial (Smith-Hughes vocational) education. While the department is organized as a part of the School of Education and offers no technical courses or curricula of its own, it makes use of such courses in other schools and departments as serve its needs. Special attention is called to the joint administration of curricula for teacher training in industrial arts education and in vocational trade and industrial education. The Department of Industrial Arts (see School of Engineering) is responsible for the general curricula and technical training, while the Department of Industrial Education (School of Education) is responsible for the professional teacher-training courses and applied pedagogy. The curriculum in Industrial Arts Education and descriptions of courses in shop technology are printed under School of Engineering.

Graduate Study in Industrial Education. Many school systems, and some state departments of education, now require all teachers to present graduate study or a master's degree as a principal part of their credentials. Since the demands upon teachers the country over are becoming increasingly more exacting each year, graduate work in industrial education brings its proportional rewards and is usually necessary for those who desire to enter the fields of teacher training or supervision. Programs of study leading to the degree of Master of Science are outlined by this department for industrial arts or industrial education students and teachers with approved graduate standing.

Special Certificate for Two-Year Vocational Teacher Training. Provision is also made for the issuance of special certificates upon the completion of a special two-year curriculum by those who are graduates of an accredited high school or who are past 21 years of age. These special certificates fall under two classifications, as follows:

1. To journeymen of the various trades who can meet the foregoing requirements and who desire to prepare themselves as trade teachers in accordance with the provisions of the Smith-Hughes Vocational Education Act.

2. To others, whether tradesmen or not, who can meet the foregoing requirements and who desire preparation for the teaching of related or general continuation subjects or both.

Extramural Courses. Through cooperation with the State Board for Vocational Education and through the establishment of extension centers, provision is made whereby certain courses of this department are offered as extramural courses. Several classes are at present taught in Portland, and other extension centers will be established as need warrants. This is especially true of those courses for the training of journeymen as voca-

tional shop teachers, for the training of teachers for general continuation subjects in trade and industrial education, and for graduate or undergraduate courses adaptable to the professional advancement of the teacher in service. For further information concerning extramural courses consult the head of the department of Industrial Education.

DESCRIPTION OF COURSES

UPPER DIVISION COURSES

IEd 330. **Industrial Arts Organization.** Third term, 2 hours.

Selection and organization of subject-matter for shop work and drawing courses in secondary schools; evaluation of jobs, projects, and class problems of several types and the formulation of general plans for teaching industrial arts subjects. Prerequisite: Ed 313 and junior standing. Two recitations.

IEd 370. **History of Manual and Industrial Arts.** Second term, 3 hours.

Historical sketch of the development of manual arts in Europe and in America. A study of the developments leading to the present interpretation of the aims and purposes of the industrial arts. Prerequisite: junior standing. Three recitations. Offered alternate years. Not offered 1934-35.

IEd 472. **Trade Analysis.** First term, 3 hours.

Intended for all teachers of shop subjects vocational or nonvocational. The careful analysis of a trade into its unit operations and the formulation of plans for teaching. Prerequisite: Ed 333 either prerequisite or parallel. Three recitations.

IEd 473. **The General Shop and Its Problems.** First term, 2 hours.

A study of the "general shop" type of organization; the reasons for its existence; its advantages and limitations; its probable future. Content and organization of subject-matter and methods of presentation and class control for general shop teaching. Prerequisite: Ed 311, 312, 313, 330. Two recitations.

IEd 474. **Written and Visual Teaching Aids.** Second term, 3 hours.

A study of types of instruction sheets and visual aids as a means to more efficient teaching in large and diversified classes. Evaluation of available instructional aids and practice in the writing of instruction sheets. Prerequisite: IEd 473 or equivalent. Three recitations.

IEd 475. **Project Analysis and the Contract Plan.** Summer, 2 hours.

Selection and analysis of projects suitable for various types of shop teaching; study of the contract plan, with practice in the technique of preparing contracts and with suggestions for their use in industrial arts classes. Prerequisite: IEd 473 or equivalent. Two recitations.

IEd 480. **Foreman Training.** Second term, 3 hours.

A course for journeymen in preparation for vocational teaching and for students training for junior executive positions in industry. Deals with the foreman and his job as a minor executive; with supervision of products and the handling of men. Prerequisite: senior stand-

ing or consent of instructor. Three recitations. Offered alternate years. Offered 1934-35.

IEd 482. **The Conference Method.** One term, 3 hours.
Designed to develop ability in conference leading. Includes the presentation of the technique of conference leading, reinforced with actual practice in conducting conferences on assigned topics. Prerequisite: Ed 333 or consent of instructor. Two two-hour conference periods. Extramural or summer session.

IEd 484. **Teaching Supplementary Subjects.** One term, 3 hours.
Selection of content in mathematics, drawing and science, for presentation as supplementary subjects in the Smith-Hughes vocational program. Methods of organizing and presenting this subject-matter in trade and industrial classes. Prerequisite: suitable preparation in mathematics, drawing, and science, and consent of instructor. Three recitations. Extramural or summer session.

IEd 488. **The Part-Time School and Its Problems.** One term, 3 hours.
A study of Federal and State laws affecting part-time schools; types of pupils; desirable characteristics of teachers; work of the coordinator; individual practice and follow-up; cooperation with outside organizations. Prerequisite: Ed 488 or equivalent. Three recitations. Extramural or summer session.

IEd 489. **Evening and Continuation Schools.** One term, 2 hours.
A study similar in nature to that of IEd 488, but with reference to the problems of evening and continuation schools and classes. Prerequisite: Ed 488 or consent of instructor. Two recitations. Extramural or summer session.

IEd 491. **Organization and Administration of Industrial Education.** One term, 3 hours.
Study of the problems of organization and administration peculiar to the field of industrial education. Intended primarily for graduate students with extended teaching experience who are looking forward to service in the field of administration and supervision. Prerequisite: Ed 488 and consent of instructor. Three recitations. Extramural or summer session.

IEd 492. **Supervision of Industrial Education.** One term, 2 hours.
Specific problems of supervision in the field of industrial education, with reference to both the trade and industrial and the industrial arts education groups. Intended primarily for graduate students with extended teaching experience as a background for the discussion of these problems. Prerequisite: Ed 488, IEd 491. Two recitations. Extramural or summer session.

GRADUATE COURSES

Ed 501. **Educational Research.** Terms and hours to be arranged.
Problems in industrial arts education. Professor Cox.

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

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

IEd 507. Seminar in Industrial Education. Any term, 2 hours.

A discussion of special problems of organization and administration confronting the teacher of industrial arts education and of vocational trade and industrial education. Two recitations to be arranged.

School of Engineering and Industrial Arts

Faculty

RICHARD HAROLD DEARBORN, A.B., E.E., Acting Dean of the School of Engineering and Industrial Arts.

BESSIE MARIE SKAALE, B.S., Secretary to the Dean.

Chemical Engineering

CHARLES SAMUEL KEEVIL, Sc.D., Professor of Chemical Engineering; Head of Department.

GEORGE WALTER GLEESON, M.S., Assistant Professor of Chemical Engineering.

Civil Engineering

CHARLES ARTHUR MOCKMORE, C.E., M.S., Professor of Civil Engineering; Head of Department.

*GORDON VERNON SKELTON, C.E., Professor of Highway Engineering.

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

†SAMUEL MICHAEL DOLAN, C.E., Associate Professor of Civil Engineering.

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

GLENN WILLIS HOLCOMB, M.S., Associate Professor of Civil Engineering; Chairman of General Engineering.

‡IVAN FREDERIC WATERMAN, C.E., Assistant Professor of Civil Engineering.

FRED MERRYFIELD, M.S., Assistant Professor of Civil Engineering.

Electrical Engineering

RICHARD HAROLD DEARBORN, A.B., E.E., Professor of Electrical Engineering; Head of Department.

LAWRENCE FISHER WOOSTER, M.S., Professor of Applied Electricity.

FRED ORVILLE MCMILLAN, M.S., Research Professor of Electrical Engineering

ARTHUR LEMUEL ALBERT, M.S., Associate Professor of Communication Engineering.

HAROLD COCKERLINE, B.S., Assistant Professor of Electrical Engineering.

†EUGENE CARL STARR, B.S., Assistant Professor of Electrical Engineering.

BEN HODGE NICHOLS, M.S., Assistant Professor of Electrical Engineering.

---

*Will not teach 1934-35.
†On leave of absence 1934-35.
‡On leave of absence 1933-34.

Industrial Arts

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

EDWIN DAVID MEYER, B.S., Assistant Professor of Industrial Arts.

WILLIAM HAMILTON HORNING, Instructor in Forging.

ROBERT CHARLES RHYNEARSON, M.S., Instructor in Machine Shop.

ALFRED CLINTON HARWOOD, Mechanician.

Mechanical Engineering

*FREDERICK GOTTLIEB BAENDER, M.M.E., Professor of Mechanical Engineering; Head of Department.

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

WALLACE HOPE MARTIN, M.E., M.S., Professor of Heat Engineering.

MARK CLYDE PHILLIPS, B.M.E., Associate Professor of Mechanical Engineering.

CHARLES EDWIN THOMAS, M.M.E., Associate Professor of Engineering Materials.

WALTER RICHARD JONES, M.E., M.S., Associate Professor of Aeronautical Engineering.

JAMES CAREY OTHUS, M.E., M.S., Assistant Professor of Mechanical Engineering.

ROBERT EDWARD SUMMERS, M.S., Assistant Professor of Mechanical Engineering.

EARL CLARK WILLEY, B.S., Instructor in Mechanical Engineering.

WILLIAM HOWARD PAUL, B.S., Instructor in Mechanical Engineering.

Mining Engineering

JAMES HERVEY BACHELLER, B.S. (Min.E.), Professor of Mining Engineering; Head of Department.

Curricula in Engineering and Industrial Arts

B.S., M.S. Degrees

Chemical Engineering
Civil Engineering
Electrical Engineering
Mechanical Engineering
Industrial Arts

FOUR-YEAR curricula leading to the degree of Bachelor of Science are offered in the School of Engineering as follows: a general curriculum in Chemical Engineering with an option in Industrial Chemistry; a general curriculum in Civil Engineering with an option in Highway Engineering; a general power curriculum in Electrical Engineering with an option in Communications; a general curriculum in Mechanical Engineering with an option in Aeronautical Engineering; curricula in Industrial Arts Education and Industrial Administration. For the Business option in the several engineering curricula see paragraph below.

*On leave of absence 1934-35.

Requirements for Graduation. In each of the four-year curricula offered in the School of Engineering the fulfillment of the Lower Division group requirements for technical and professional schools is prescribed.

In each of the four-year engineering curricula the student must complete the upper division work as outlined or elected in the Engineering School with the approval of the department head and the dean.

A total of 204 term hours including the required work in physical education and military science is required for the bachelor's degree.

Curricula Organization. The curricula offered in the Engineering School are organized into the following curricula groups.

A. Chemical Engineering and Industrial Chemistry including a lower division common curriculum and differentiated upper division curricula in these two fields.

B. Civil, Electrical, and Mechanical Engineering including a common freshman curriculum and differentiated sophomore and upper division curricula in these three fields.

C. Industrial Arts Education and Industrial Administration including a lower division common curriculum and differentiated upper division curricula in these two fields.

Engineering curricula are organized about four general fields of knowledge or training and the sequence of courses in each curriculum is determined for the purpose of developing strong continuity in the various fields. The four fields are: (1) general engineering science and technology; (2) mathematics and physical science; (3) language, literature, English, and social science; and (4) military education, physical education, and free electives.

Exploratory Contacts. The lower division curricula in so far as possible have been arranged to provide early contact with engineering training for those who are undetermined in the selection of a major engineering field. In the case of the curricula in Civil, Electrical, and Mechanical Engineering a common freshman year is provided. In the case of Chemical Engineering and Industrial Chemistry a common lower division program is provided. Similarly, for Industrial Arts Education and Industrial Administration a common lower division program is provided.

Curricula groups A and B as listed above are differentiated by their primary foundations in chemistry and physics. An undecided student who desires exploratory contact with chemical engineering should register in curricula group A, for should he decide after the first term to investigate curricula group B, he may do so without increasing his undergraduate period of training. One who, on the contrary, explores curricula group B and decides at the end of his freshman year to transfer to curricula group A will find his training necessarily extended beyond four years.

Business Option. In any of the engineering curricula a student may elect a group of business and allied service courses listed below and will find it possible to include them in the elected curriculum by omitting a sequence of technical courses in the senior year. These courses are scheduled collaterally with technical courses.

Junior Year	Term hours 1st	2d	3d
Outlines of Economics (Ec 212)	3	—	—
Principles of Accounting for Engineers (BA 385), Accounting for Engineers and Foresters (BA 386)	—	3	3
	3	3	3
Senior Year			
Business Law (BA 256, 258)	4	—	4
Money and Banking (Ec 413)	—	—	4
American National Government (PS 212)	—	3	—
Production Management (BA 413)	4	—	—
Elements of Finance (BA 222)	—	4	—
	8	7	8

A. Chemical Engineering and Industrial Chemistry

LOWER DIVISION CURRICULUM

Freshman Year	Term hours 1st	2d	3d
Chemical Engineering Survey (ChE 111)	2	—	—
General Chemistry (Ch 204, 205, 206)	5	5	5
Trigonometry and Elementary Analysis (Mth 121, 122, 123) *or* Mathematical Analysis (Mth 131, 132, 133)	5	5	5
Linear Drawing and Lettering (GE 111), Elementary Mechanical Drawing (GE 112)	—	2	2
English Composition (Eng 111, 112, 113)	3	3	3
Military Science	1	1	1
[1]Physical Education	1	1	1
	17	17	17
Sophomore Year			
General Physics (Ph 201, 202, 203)	4	4	4
Qualitative Analysis (Ch 231), Quantitative Analysis (Ch 232, 233)	5	5	5
Differential and Integral Calculus (Mth 201, 202, 203, *or* Mth 204, 205, 206)	4	4	4
Chemical Technology (ChE 211, 212, 213)	2	2	2
Military Science	1	1	1
Advanced Physical Education	1	1	1
	17	17	17

CHEMICAL ENGINEERING

Junior Year			
Chemical Engineering (ChE 311, 312, 313)	4	4	4
Organic Chemistry (Ch 430, 431, 432)	4	4	4
Physical Chemistry (Ch 440, 441, 442)	4	4	4
Mechanics (ME 212)	3	—	—
Materials of Engineering (ME 316)	—	3	—
Strength of Materials (ME 311)	—	—	3
[2]Electives	3	3	3
	18	18	18
Senior Year			
Chemical Engineering (ChE 411, 412, 413)	3	3	3
Chemical Engineering Laboratory (ChE 414)	—	—	3
Chemical Engineering Projects (ChE 421)	3	—	—
Industrial Chemical Laboratory (ChE 432)	—	2	—
Chemical Plant Design (ChE 433)	—	—	2
Industrial Electricity (EE 351, 352)	3	3	—
[2]Electives	7	8	8
	16	16	16

INDUSTRIAL CHEMISTRY

Junior Year			
Chemical Engineering (ChE 311, 312, 313)	4	4	4
Organic Chemistry (Ch 430, 431, 432)	4	4	4
Physical Chemistry (Ch 440, 441, 442)	4	4	4
Electives	6	6	6
	18	18	18

[1]General Hygiene, 2 term hours, is taken one term in place of Physical Education.
[2]Students must include, in either junior or senior year, 9 term hours of courses which fulfill group requirements.

Senior Year	Term hours 1st	2d	3d
Industrial Chemistry (ChE 420)	3	---	---
Industrial Chemical Laboratory (ChE 432)	---	2	---
Chemical Thermodynamics (Ch 445, 446)	3	3	---
Undergraduate Research (ChE 401)	3	3	3
Electives	7	8	13
	16	16	16

B. Civil, Electrical, and Mechanical Engineering

COMMON FRESHMAN YEAR	Term hours 1st	2d	3d
Trigonometry and Elementary Analysis (Mth 121, 122, 123) *or* Mathematical Analysis (Mth 131, 132, 133)	5	5	5
Engineering Physics (Ph 111, 112, 113)	3	3	3
English Composition (Eng 111, 112, 113)	3	3	3
Linear Drawing and Lettering (GE 111), Elementary Mechanical Drawing (GE 112), Mechanical Drawing (GE 113)	2	2	2
Engineering Problems (GE 101, 102, 103)	2	2	2
Military Science	1	1	1
[1]Physical Education	1	1	1
	17	17	17

CIVIL ENGINEERING

Sophomore Year			
Differential and Integral Calculus (Mth 201, 202, 203, *or* Mth 204, 205, 206)	4	4	4
Elementary General Chemistry (Ch 201, 202, 203)	3	3	3
Plane Surveying (CE 221, 222, 223)	5	3	3
Field Curves (CE 231), Curves and Earthwork (CE 232)	---	3	3
Descriptive Geometry (CE 211)	3	---	---
Mechanics (CE 212, 213)	---	3	3
Military Science	1	1	1
Advanced Physical Education	1	1	1
	17	18	18

Junior Year			
Strength of Materials (CE 351)	3	---	---
Materials of Engineering (ME 316)	3	---	---
Structural Analysis (CE 381)	---	4	---
Reinforced Concrete (CE 371)	---	---	4
Hydraulics (CE 311, 312), Hydraulic Machinery (CE 313)	3	3	3
Structural Laboratory (ME 415)	---	3	---
Roads and Pavements (CE 333)	---	---	4
Engineering Geology (G 324)	3	---	---
Outlines of Economics (Ec 212)	3	---	---
[2]General Sociology (Soc 212)	---	3	---
[2]American National Government (PS 212)	---	---	3
Electives	3	3	3
	18	16	17

Senior Year			
NORM			
Structural Engineering (CE 482), Structural Design (CE 483)	4	4	---
Estimating and Cost Analysis (CE 460)	---	---	3
Contracts and Specifications (CE 427)	---	---	3
Electives	3	3	3
	7	7	9
GENERAL OPTION			
Senior Year Norm	7	7	9
Masonry and Foundations (CE 472)	---	4	---
Building Design (CE 475)	---	---	4
Hydrology (CE 411), Sanitary Engineering (CE 412)	3	---	3
Steam, Air, and Gas Power (ME 345)	3	---	---
Industrial Electricity (EE 351)	---	3	---
Electives	3	3	---
	16	17	16

[1]General Hygiene, 2 term hours, is taken one term in place of Physical Education.
[2]Business Option students take these courses in senior year.

HIGHWAY OPTION

	Term hours 1st	2d	3d
Senior Year Norm	7	7	9
Highway Engineering (CE 421, 422)	4	3	—
Highway Materials Laboratory (ME 414)	3	—	—
Masonry and Foundations (CE 472)	—	4	—
Steam, Air, and Gas Power (ME 345)	3	—	—
Industrial Electricity (EE 351)	—	3	—
Sanitary Engineering (CE 412)	—	—	3
Economics of Highway Transportation (CE 425)	—	—	3
	17	17	15

BUSINESS OPTION

(See pages 229-230)

STRUCTURAL DESIGN IN ARCHITECTURE OPTION*

B.S. Degree at University

Junior Year (State College)

Strength of Materials (CE 351)	3	—	—
Materials of Engineering (ME 316)	3	—	—
Structural Analysis (CE 381)	—	4	—
Reinforced Concrete (CE 371)	—	—	4
Structural Laboratory (ME 415)	—	3	—
Welding Practice (IA 350)	—	—	1
Plane Surveying (CE 221, 222, 223)	5	3	3
Practical Electricity (IA 370)	3	—	—
Forging and Welding (IA 250)	—	—	2
Electives	3	6	7
	17	16	17

Senior Year (State College)

Structural Engineering (CE 482), Structural Design (CE 483)	4	4	—
Masonry and Foundations (CE 472)	—	4	—
Building Design (CE 475)	—	—	4
Hydraulics (CE 311)	3	—	—
Structural Analysis (CE 485)	—	3	—
Steam, Air, and Gas Power (ME 345)	3	—	—
Industrial Electricity (EE 351)	—	3	—
Heating and Ventilating (ME 461)	—	—	3
Estimating and Cost Analysis (CE 460)	—	—	3
Electives	7	3	6
	17	17	16

ELECTRICAL ENGINEERING

Sophomore Year

Differential and Integral Calculus (Mth 201, 202, 203), *or* (Mth 204, 205, 206)	4	4	4
Elementary General Chemistry (Ch 201, 202, 203)	3	3	3
Introduction to Electrical Engineering (EE 201, 202, 203)	4	4	4
Machine Shop Practice (IA 260)	2	—	—
Forging and Welding (IA 250)	—	2	—
Foundry Practice (IA 240)	—	—	2
Plane Surveying (CE 226)	3	—	—
Elements of Machine Design (ME 242)	—	3	—
Extempore Speaking (Sp 111)	—	—	3
Military Science	1	1	1
Advanced Physical Education	1	1	1
	18	18	18

*The freshman and sophomore years in this curriculum are taken at the University in the School of Architecture and Allied Arts. It is recommended that the student in his freshman and sophomore years take the following courses, with such additions as may best fit individual cases: graphics, drawing or architectural modeling, architectural design, construction, unified mathematics, general physics, calculus, and architectural history. Students also take English composition, physical education, and the lower division group requirements in arts and sciences.

Junior Year

	Term hours 1st	2d	3d
Electrical Engineering (EE 311, 312, 313)	3	3	3
Electrical Laboratory (EE 321, 322, 323)	3	3	3
Mechanics (ME 212, 213)	3	3	—
Strength of Materials (ME 311)	—	—	3
Heat Power Engineering (ME 331, 332)	3	3	—
Hydraulics (CE 321)	—	—	3
Outlines of Economics (Ec 212)	3	—	—
Principles of Accounting for Engineers (BA 385)	—	3	—
American National Government (PS 212)	—	—	3
[1]Electives	3	3	3
	18	18	18

Senior Year

NORM

Electrical Engineering (EE 411, 412, 413)	3	3	3
Electrical Design (EE 414, 415, 416)	1	1	1
[2]Electives	5	5	5
	9	9	9

POWER OPTION

Senior Year Norm	9	9	9
Electrical Laboratory (EE 421, 422, 423)	3	3	3
Electrical Transients (EE 451)	3	—	—
High Voltage Engineering (EE 452, 453)	—	3	3
	15	15	15

COMMUNICATION OPTION

Senior Year Norm	9	9	9
Electron Tubes and Circuits (EE 463, 464)	3	3	—
Engineering of Sound Systems (EE 465)	—	—	3
Communication Laboratory (EE 461)	3	—	—
Electrical Characteristics of Transmission Circuits (EE 455)	—	3	—
Electrical Communication (EE 462)	—	—	3
	15	15	15

BUSINESS OPTION

(See pages 229-230)

MECHANICAL ENGINEERING

Sophomore Year

Differential and Integral Calculus (Mth 201, 202, 203), *or* (Mth 204, 205, 206)	4	4	4
Elementary General Chemistry (Ch 201, 202, 203)	3	3	3
Heat Engineering (ME 221, 222, 223)	3	3	3
Foundry Practice (IA 240)	2	—	—
Machine Shop Practice (IA 260)	—	2	—
Forging and Welding (IA 250)	—	—	2
Descriptive Geometry (ME 211)	3	—	—
Mechanics (ME 212, 213)	—	3	3
Military Science	1	1	1
Advanced Physical Education	1	1	1
	17	17	17

Junior Year

NORM

Heat Engineering (ME 321, 322, 323)	3	3	3
Mechanical Laboratory (ME 351, 352, 353)	2	2	2
Strength of Materials (ME 311)	3	—	—
Mechanism (ME 312)	—	3	—
Plane Surveying (CE 226)	—	—	3
Electives (Social Science)	3	3	3
[3]Electives	3	3	3
	14	14	14

[1]Electives must satisfy group requirements of nine hours.

[2]Suggested Electives: Economics, Accounting, Municipal Government, Business Law, Social Sciences, Military Science; Materials of Engineering, Steam or Hydraulic Plants, Radio Communication, Electric Lighting, Electrical Problems, Thesis.

[3]Suggested Electives: Business Law, Production Management, Extempore Speaking, Principles of Accounting for Engineers; Differential Equations, Structural Analysis, Metallography and Pyrometry, Fuels and Lubricants, Military Science.

Students have choice of General or Aeronautical Option.

	Term hours		
	1st	2d	3d
GENERAL OPTION			
Junior Year Norm	14	14	14
Hydraulics (CE 341), Hydraulic Machinery (CE 342)	3	3	---
Materials of Engineering (ME 316)	---	---	3
	17	17	17
AERONAUTICAL OPTION			
Junior Year Norm	14	14	14
Materials of Engineering (ME 316)	3	---	---
Aerodynamics (ME 342)	---	3	---
Aero Propulsion (ME 343)	---	---	3
	17	17	17

Senior Year

NORM			
Machine Design (ME 411, 412)	3	3	---
Mechanical Laboratory (ME 451, 452)	2	2	---
Metallography (ME 482)	3	---	---
Industrial Engineering (ME 473)	---	---	3
[1]Electives	3	3	3
	11	8	6
GENERAL OPTION			
Senior Year Norm	11	8	6
Machine Design (ME 413)	---	---	3
Power Plant Engineering (ME 431, 432)	3	3	---
Mechanical Laboratory (ME 453)	---	---	2
Fuel Engineering (ME 422, 423)	---	3	3
Industrial Electricity (EE 351, 352, 353)	3	3	3
Seminar (ME 407)	1	---	---
	18	17	17
AERONAUTICAL OPTION			
Senior Year Norm	11	8	6
Advanced Aerodynamics (ME 446)	---	---	2
Airplane Design (ME 441, 442, 443)	3	3	3
Structural Analysis (CE 381, 485)	4	3	---
Hydraulics (CE 341)	---	---	3
Electrical Communication (EE 462)	---	---	3
Airplane Electrical Systems (EE 355)	---	3	---
	18	17	17

BUSINESS OPTION

(See pages 229-230)

C. Industrial Arts Education and Industrial Administration

LOWER DIVISION CURRICULUM

Freshman Year

	Term hours		
	1st	2d	3d
Pattern Making (IA 111)	3	---	---
Methods in Woodworking (IA 112, 113)	---	3	3
Foundry Practice (IA 141)	3	---	---
Forging and Welding (IA 152)	---	3	---
Machine Shop (IA 163)	---	---	3
Linear Drawing and Lettering (GE 111)	2	---	---
Mechanical Drawing (GE 112, 113)	---	2	2
English Composition (Eng 111, 112, 113)	3	3	3
Lower Division Courses in Science Group	3–4	3–4	3–4
Military Science	1	1	1
General Hygiene and Physical Education (PE 151, 152, 153)	1	1	1
	16–17	16–17	16–17

[1]Suggested Electives: Business Law, Production Management, Extempore Speaking, Principles of Accounting for Engineers; Differential Equations, Structural Analysis, Metallography and Pyrometry, Fuels and Lubricants, Military Science.

Sophomore Year	Term hours 1st	2d	3d
Machine and Tool Maintenance (IA 225 or 265)	2	---	---
Lower Division Drawing (AA 291)	3	---	---
Lower Division Decorative Design (AA 295) *or* Descriptive Geometry (CE 211)	---	3	---
Sheet Metal Work (IA 380)	---	---	3
House Planning and Architectural Drawing (AA 178)	3	---	---
House Planning and Architectural Drawing (AA 179) *or* Elements of Machine Design (ME 242)	---	3	---
House Planning and Architectural Drawing (AA 180) *or* Machine Drawing (IA 263)	---	---	3
Modern Governments (PS 201, 202)	4	4	---
Outlines of Psychology (Psy 211)[1] *or* Outlines of Economics (Ec 211)[2]	---	---	4
Business English (Eng 217) *or* Elementary Journalism (J 111)	3	---	---
Extempore Speaking (Sp 111)	---	3	---
Parliamentary Procedure (Sp 231)	---	---	3
Military Science	1	1	1
Advanced Physical Education (PE 251, 252, 253)	1	1	1
Departmental electives	---	2	2
	17	17	17

INDUSTRIAL ARTS EDUCATION

Junior Year			
Millwork—Machine Woodwork (IA 312) *or* Production Machine Work (IA 363)	3	---	---
Carpentry (IA 333) *or* Lower Division Decorative Design (AA 295—second course)[3]	---	3	---
Wood and Metal Finishing (IA 316)	---	---	2
Automobile Mechanics (AE 312, 313, 314)	3	3	3
Educational Psychology (Ed 312)	3	---	---
History of Manual and Industrial Arts (IEd 370)	---	3	---
Special Methods in Industrial Arts (Ed 333)	---	---	3
Secondary Education (Ed 311)	3	---	---
Principles of Teaching (Ed 313)	---	3	---
Measurement in Secondary Education (Ed 416)	---	---	3
Departmental electives	2	2	3
General electives	3	3	3
	17	17	17

Senior Year			
Practical Electricity (IA 370)	3	---	---
Materials of Engineering (ME 316) *or* Commercial Woods (F 334)	---	---	3
The General Shop and Its Problems (IEd 473)	2	---	---
Written and Visual Teaching Aids (IEd 474)	---	3	---
Shop Planning and Organization (IA 411)	---	---	3
Trade Analysis (IEd 472)	3	---	---
Supervised Teaching (Ed 315)	---	3	3
Departmental electives	3	5	2
Education electives	3	3	3
General electives	3	3	3
	17	17	17

INDUSTRIAL ADMINISTRATION[4]

Junior Year			
Mill Work—Machine Woodwork (IA 312) *or* Production Machine Work (IA 363)	3	---	---
Time and Motion Studies (IA 361)	---	2	---
Materials of Engineering (ME 316)	3	---	---
Foreman Training (IEd 480)	---	3	---
Metallography and Pyrometry (ME 481) *or* Commercial Woods (F 334)	---	---	3
Elements of Organization and Production (BA 221)	4	---	---
Elements of Finance (BA 222)	---	4	---
Elements of Marketing (BA 223)	---	---	4
Principles of Accounting for Engineers (BA 385), Accounting for Engineers and Foresters (BA 386), Cost Accounting for Industrials (BA 494)	3	3	3
Departmental electives	2	2	4
General electives	3	3	3
	18	17	17

[1]Required of students majoring in Industrial Arts Education.
[2]Required of students majoring in Industrial Administration.
[3]Technical option to be selected according to intended goal.
[4]See statement under Department of Industrial Arts of objectives controlling the make-up of curricula in Industrial Arts Education and Industrial Administration, and for the types of training for which they are designed.

Senior Year	Term hours 1st	2d	3d
Trade Analysis (IEd 472)	3	---	---
Shop Planning and Organization (IA 411)	---	3	---
Industrial Seminar (IA 407)	---	2	---
Production Engineering (IA 463)	---	---	3
Personnel Management (BA 414)	4	---	---
Business Statistics (BA 470)	---	3	---
Money and Banking (Ec 413)	---	---	4
Labor Problems (Ec 405)	4	---	---
Business Law (BA 256, 258)	---	4	4
Departmental electives	3	2	3
General electives	3	3	3
	17	17	17

General Engineering

ENGINEERING courses required in the common freshman year for Civil, Electrical, and Mechanical Engineering are grouped in the department of General Engineering. The courses include Engineering Problems (GE 101, 102, 103) and three courses in Engineering Drawing (GE 111, 112, 113). The General Engineering department courses are taught by members of the Civil, Mechanical, and Electrical Engineering departmental staffs, who for purposes of coordination and unified effort work as a committee in planning and supervising the instruction.

DESCRIPTION OF COURSES

LOWER DIVISION COURSES

GE 101, 102, 103. **Engineering Problems.** Three terms, 2 hours each term.
Lectures and problems dealing in an elementary way with the general field of engineering. The purpose of the instruction is fourfold: first, to inform the student concerning the problems and occupations in the various engineering fields; second, to unify the purpose of all courses in the engineering curricula; third, to assist the student in the acquisition of elementary knowledge in the fields of civil, mechanical, and electrical engineering; and fourth, to train the student in engineering habits of thinking and expression. Parallel with Ph 111, 112, 113. One lecture; 2 two-hour problem periods.

GE 111. **Linear Drawing and Lettering.** First or second term, 2 hours.
Training in the use of drafting instruments and in the art of lettering. Intended for students who have had no previous college training in mechanical drawing. The instruments and materials for this course cost about $20.00. The instruments are used in all later drawing courses. Three two-hour drawing periods.

GE 112. **Elementary Mechanical Drawing.** Second or third term, 2 hours.
Practice in making working drawings of machine parts; orthographic projection; methods of dimensioning and checking; use of auxiliary planes of projection; section drawings; study of isometric drawing; making tracings from these drawings. Prerequisite: GE 111 or equivalent. Three two-hour drawing periods.

GE 113. **Mechanical Drawing.** Third term, 2 hours.
A continuation of GE 112; also freehand orthographic and perspec-

tive sketching; practical application of drawing principles to working drawings; use of charts and diagrams. Prerequisite: GE 112. Three two-hour drawing periods.

Chemical Engineering

THE curriculum in Chemical Engineering is designed to give a broad training in principles fundamental to chemical industry. It aims to lay a foundation for responsible work in laboratory or plant, and to prepare the student for graduate work in either chemistry or chemical engineering. To this end the student is first given a thorough grounding in chemistry, mathematics, and physics. This is followed by professional work which falls into three groups: (1) courses which give a thorough knowledge of the fundamental principles of chemistry; (2) courses in mechanical and electrical engineering subjects; and (3) courses which deal with chemical engineering as a separate entity. The last group includes a thorough study of the unit operations of chemical engineering and their applications to chemical processes.

The curriculum is intended to give a broad training in fundamentals, rather than specialized training for a narrow field. A corresponding breadth of opportunity is presented, comprising the entire field of chemical industry. Many positions of responsibility, particularly in research and development work, however, demand a more extensive training than can be given in four years, and students with the proper qualifications are strongly advised to pursue graduate work.

The option in Industrial Chemistry is intended for those students who wish to emphasize the chemical rather than the engineering aspects of their training, and opportunity for this is provided through professional electives.

Equipment. The Chemical Engineering department is housed in the Mines Building where excellent laboratory facilities have been provided for instruction in both chemical engineering and industrial chemistry. Considerable equipment is available for studies in the unit operations of chemical engineering, including many of the instruments commonly employed to obtain engineering data. An adequate supply of the usual reagents and chemical apparatus is on hand for laboratory courses and research.

DESCRIPTION OF COURSES

LOWER DIVISION COURSE

ChE 111. **Chemical Engineering Survey.** First term, 2 hours.

The field of chemical engineering is discussed with reference to the preparation required and the opportunities presented. Training in the methods and point of view of the engineer is given by means of elementary problems. One lecture; 2 two-hour problem periods.

ChE 211, 212, 213. **Chemical Technology.** Three terms, 2 hours each term.

An introductory study of principles fundamental to the field of chemical engineering, with applications to the solution of problems. Two recitations.

UPPER DIVISION COURSES

ChE 311, 312, 313. **Chemical Engineering.** Three terms, 4 hours each term.
A study of chemical engineering principles and their applications in industrial processes. Two recitations; 1 four-hour laboratory period.

ChE 401. **Undergraduate Research.** Terms and hours to be arranged.
Consultation, library, and laboratory work. Training in the methods of conducting a scientific investigation.

ChE 403. **Thesis.** Term and hours to be arranged.
Elective on approval for undergraduates whose records indicate ability and initiative to complete special projects.

ChE 405. **Advanced Studies.** Terms and hours to be arranged.

ChE 407. **Seminar.** Any term, 1 hour.
Reports on selected topics. Effective oral presentation of material is emphasized. One period.

ChE 411, 412, 413. **Chemical Engineering.** Three terms, 3 hours each term.
A quantitative treatment of the unit operations of chemical engineering, involving the application of fundamental principles and scientific data to the solution of problems. Two recitations; 1 two-hour problem period.

ChE 414. **Chemical Engineering Laboratory.** Third term, 3 hours.
A laboratory study of a selected few of the more important unit operations of chemical engineering. One lecture; 1 four-hour laboratory period.

ChE 420. **Industrial Chemistry.** One term, 3 hours.
A study of the more important industrial chemical processes. Lectures and assigned reading. Three periods.

ChE 421, 422. **Chemical Engineering Projects.** First and second terms, 3 hours each term.
Individual projects selected to correlate principles and unit operation of chemical engineering.

ChE 431. **Industrial Stoichiometry.** First term, 2 hours.
Calculations of the industrial chemical processes. One lecture; 1 two-hour problem period.

ChE 432. **Industrial Chemical Laboratory.** Second term, 2 hours.
The small-scale development of a chemical process, followed by a report on plant layout and an estimation of the probable economic return. One lecture; 1 three-hour laboratory period.

ChE 433. **Chemical Plant Design.** Third term, 2 hours.
Problems in the design of chemical plants, including a consideration of economic factors, the construction of flow sheets, and the selection and arrangement of equipment. Two two-hour computation periods.

ChE 451. **Sanitary Chemistry.** First term, 3 hours.
The treatment and disposal of waste products. Two lectures; 1 three-hour laboratory period.

GRADUATE COURSES

ChE 501. **Graduate Study and Research.** Terms and hours to be arranged.
The investigation of problems in chemical engineering or industrial chemistry for an advanced degree.

ChE 503. **Graduate Thesis.** Terms and hours to be arranged.
Research and preparation of a thesis for an advanced degree.

ChE 505. **Graduate Study.** Terms and hours to be arranged.

ChE 521. **Economic Balance.** Second term, 3 hours.
The solution of typical chemical engineering problems in which emphasis is placed on economic considerations, including a determination of the optimum design from the point of view of cost and economic return.

ChE 532. **Diffusional Processes.** Second term, 4 hours.
Development of the theory underlying such processes as absorption, distillation, drying, humidification, etc. Solution of problems including application of the theory to the design of equipment.

ChE 542. **Chemical Engineering Calculations.** Third term, 3 hours.
A thorough quantitative study of selected unit operations.

ChE 553. **Heat Transmission.** Third term, 4 hours.
Development of the theory underlying the transmission of heat, with applications to the design of typical heat-transfer equipment.

ChE 563. **Applied Thermodynamics.** First term, 3 hours.
A study of the principles of thermodynamics with applications to typical chemical engineering problems.

Civil Engineering

THE curriculum in Civil Engineering is organized to train young men in those fundamental principles of engineering science and technology which are basic and common to the fields of geodesy and surveying, highways, railroads, irrigation and drainage, river and harbor improvements, structures, hydraulics, sanitation, and municipal engineering, and to permit some latitude of choice in the three general fields of structures, hydraulics, and highways. The civil engineer's problems in the development of the Northwest are directly related to the structural, hydraulic, and highway fields. The curriculum is planned to prepare graduates for advancement to responsible positions in these fields.

Highway Engineering is offered as an option in the Civil Engineering Curriculum and is differentiated from that curriculum only in the senior year. The purpose of these courses is to meet the demand in this state and throughout the Northwest for men equipped to take charge of road and street construction and maintenance work.

Thorough theoretical instruction is accomplished by as much laboratory and field practice as possible. In the study of highways, special reference is made to the conditions and needs of Oregon. Besides study of the higher types of roads, due consideration is given to the construction and maintenance of earth, gravel, and broken-stone roads.

Equipment. The department is provided with quarters and equipment for adequately and thoroughly performing its work. The third floor of Apperson Hall is devoted to classrooms and drawing rooms. A large room on the ground floor of Industrial Arts Building houses the surveying instruments, and the entire middle third of the Engineering Laboratory is occupied by hydraulic equipment. The equipment of the instrument room consists of 29 transits, 25 levels, and 16 plane-tables; together with the necessary auxiliary supply of stadia, level, and line rods, hand levels, tapes, and other minor equipment.

The equipment of the hydraulic laboratory is adequate for the execution of all basic experimental work in the field of hydraulic engineering. The machinery installed is modern and complete. It is extensive enough so that all the theoretical studies of the classroom may be verified by the performance of machines in the laboratory. Classified upon the factors of quantity of water, pressure under which water is available, square feet of floor space, and value of equipment it ranks among the leading hydraulic laboratories of the United States. The major items of the equipment are two direct-connected 8-inch centrifugal pumps operated by 40-horse-power motors; a 35-inch Pelton impulse wheel with oil pressure governor; a 14-inch spiral cased Francis type reaction turbine with Pelton governor; a large pressure tank five feet in diameter by twenty feet high; and two 16,000-pound capacity weighing tanks mounted upon direct reading scales. The Department of Mechanical Engineering is equipped with modern testing laboratories, including the best cement and highway-testing machinery, thus affording students in Civil Engineering the opportunity of studying by direct observation and experiment the strength and properties of the various engineering materials.

DESCRIPTION OF COURSES

LOWER DIVISION COURSES

CE 211. **Descriptive Geometry.** First or second term, 3 hours.

A study of the principles of orthographic projection and of their applications to the graphical solution of engineering problems. Prerequisite: GE 112. One recitation; 2 three-hour drawing periods.

CE 212. **Mechanics (Statics).** Second term, 3 hours.

Applied mechanics for engineering students; forces and force systems with reference to the equilibrium of rigid bodies, including simple framed structures; methods of finding centers of gravity and moments of inertia and their practical applications; numerous problems having engineering application. Prerequisites: differential calculus. One recitation; 2 two-hour computing periods.

CE 213. **Mechanics (Dynamics).** Second or third term, 3 hours.

A continuation of CE 212 dealing with principles and problems in kinetics; force as a factor causing motion; work, energy, friction, and impact studied and illustrated by means of numerous problems. Prerequisite: CE 212. One recitation; 2 two-hour computing periods.

CE 221. **Plane Surveying.** First or third term, 5 hours.

Theory, use, and adjustment of level and transit. Measurement and subdivision of land. Two recitations; 9 periods field work.

CE 222. **Plane Surveying.** Second term, 3 hours.
A continuation of CE 221. A study of surveying problems as related to subdivision of public land, farm and city surveying; special problems and methods; further practice in use of instruments; notekeeping. Prerequisite: CE 221. One recitation; 6 periods field work.

CE 223. **Plane Surveying.** Third term, 3 hours.
Use of stadia and of plane-table; topographical mapping and drawing; determination of meridian by stellar and by solar observation. Prerequisite: CE 222. One recitation; 6 periods field work.

CE 224. **Precise Surveying and Geodesy.** Any term, 3 hours.
Instruction in precise leveling, triangulation, base line measurement, stellar and solar observations. Prerequisite: CE 223. One recitation; 6 periods field work.

CE 226. **Plane Surveying.** First or third term, 3 hours.
Theory, use, and adjustment of engineer's level and transit. One recitation; 6 periods field work.

CE 231. **Field Curves.** Second term, 3 hours.
Instruction and field work in simple curves and compound curves as related to railroads, highways, and canals. Prerequisite: CE 221 Two recitations; 3 periods field work.

CE 232. **Curves and Earthwork.** Third term, 3 hours.
Instruction and field work in easement, and parabolic curves as related to railroads, highways, and canals. Complete survey of a transportation line, reconnaissance, preliminary, and location surveys; estimates of quantities. Prerequisite: CE 231. One recitation; 6 periods field work.

UPPER DIVISION COURSES

CE 311. **Hydraulics.** First term, 3 hours.
A study of the principles underlying pressure and flow of water; laboratory measurements of pressure and flow. Planned particularly for Civil Engineering students. Two recitations; 3 periods laboratory work.

CE 312. **Hydraulics (Advanced).** Second term, 3 hours.
A continuation of CE 311. A study of the impulse and reaction of jets and energy of water. Prerequisite: CE 311. One recitation; 4 periods laboratory work.

CE 313. **Hydraulic Machinery.** Third term, 3 hours.
Operation, characteristics, efficiency, theory, design, and installation of pumps and turbines; laboratory studies. Planned particularly for Civil Engineering students. Prerequisite: CE 312. Two recitations; 3 periods laboratory work.

CE 321. **Hydraulics.** Third term, 3 hours.
A study of the principles underlying and laboratory measurements of the pressure, flow, and energy of water. Planned particularly for Electrical Engineering students. Two recitations; 3 periods laboratory work.

CE 322. **Hydraulic Power Plants.** First term, 3 hours.
A study of the application of the principles of hydraulics to power production in hydro-electric plants; stream flow, dams, head works, pipe lines, wheels, and speed regulation. Prerequisite: CE 321. Two recitations; 3 periods laboratory work.

CE 331. **Navigation.** First term, 3 hours.
Fundamental laws of navigation; longitude, latitude, spherical trigonometry; commercial flight routes; flight instruments. Three recitations.

CE 333. **Roads and Pavements.** Third term, 4 hours.
A study of the fundamental principles of location, construction, and maintenance of roads; materials used in road and street building. Four recitations.

AE 341. **Land Clearing.** Third term, 2 hours.
Taught cooperatively by departments of Agricultural Engineering and Civil Engineering. The use of explosives, hand stump-pullers, horse pullers; tractor and donkey engine for removing stumps, charpitting, stump burning, and chemical treatment; what is being done in other states; clearing, terracing, and leveling of lands. One recitation; 1 three-hour laboratory period.

CE 341. **Hydraulics.** First term, 3 hours.
A course similar to CE 321 for students in Mechanical Engineering. Two recitations; 3 periods laboratory work.

CE 342. **Hydraulic Machinery.** Second term, 3 hours.
A study of the application of the principles of hydraulics to the performance and design of pumps and turbines and the layout of pumping and power plants. Prerequisite: CE 321 or 341. Two recitations; 3 periods laboratory work.

CE 351. **Strength of Materials.** First or third term, 3 hours.
In this course the general principles of mechanics are applied to the elements of engineering structures to determine their strength and fitness. Tensile and crushing strengths of various engineering materials; stresses in beams and girders under different systems of loading and support; supporting strength of columns; application of torsion to shafts. Prerequisite: CE 212 or ME 212. One recitation; 2 two-hour computing periods.

CE 371. **Reinforced Concrete.** Third term, 4 hours.
Study and design of slabs, beams, and columns of reinforced concrete. Prerequisite: CE 351 or ME 311. Two recitations; 4 periods laboratory work.

CE 381. **Structural Analysis.** First or second term, 4 hours.
Graphical and algebraic analysis of simple roof and bridge structures. Prerequisite: CE 212 or ME 212. Two recitations; 4 periods laboratory work.

CE 387. **Structural Analysis.** Second term, 2 hours.
Analysis of roof trusses. Prerequisite: CE 212 or ME 212. One recitation; 3 periods laboratory work.

CE 403. **Thesis.** Any term, hours to be arranged.
Elective on approval to undergraduates whose records indicate ability and initiative to complete special projects.

CE 405. **Advanced Studies.** Terms and hours to be arranged.
Readings or research with reports on special topics.

CE 407. **Seminar.** Any term, 1 hour each term.
Presentation of abstracts and discussion of articles in the current periodicals. One recitation.

CE 411. **Hydrology.** First term, 3 hours.
A study of precipitation, storage, and run-off; field studies in standard methods of measurement. Two recitations; 3 periods field and laboratory work.

CE 412. **Sanitary Engineering.** Third term, 3 hours.
A study of the fundamental processes and operations of the conditioning of water as applied to water supply and sewage disposal. Prerequisite: CE 311. Two recitations; 3 periods laboratory work.

CE 413. **Reclamation Engineering.** Third term, 3 hours.
Design and operation of drainage and irrigation systems. Prerequisite: CE 311. Two recitations; 3 periods laboratory work.

CE 421. **Highway Engineering.** First term, 4 hours.
Economic grades and proper location of highways, culvert design; construction and maintenance of various types of roads; cost data; methods of handling work. Prerequisite: CE 333. Two recitations; 2 three-hour laboratory periods.

CE 422. **Highway Engineering.** Second term, 3 hours.
Continuation of CE 421. One recitation; 2 three-hour laboratory periods.

CE 425. **Economics of Highway Transportation.** Third term, 3 hours.
A study of the factors affecting highway transportation such as motor vehicle operation costs per mile; delays to traffic; density of traffic; traffic surveys. Prerequisite: CE 333. Three recitations.

CE 426. **Highway Administration and Finance.** Third term, 3 hours.
A study of the development of highway systems; organization of state and national highways; principles of highway finance; federal aid; technical functions of various highway units. Prerequisite: CE 333. Three recitations.

CE 427. **Contracts and Specifications.** Third term, 3 hours.
A study of the general principles and laws of contracts as applied to engineering. Three recitations.

CE 433. **Railroad Engineering.** Second term, 3 hours.
A study of methods in railway construction and maintenance. Prerequisite: CE 232. Two recitations; 1 three-hour laboratory period.

CE 438. **Municipal Engineering and City Planning.** Third term, 3 hours.
The modern city streets, boulevards, and transportation systems; drainage and sanitation; water supply; lighting. A course of lectures and assigned readings. Three recitations.

CE 451. **Water Power Engineering.** Any term, 3 hours.
Development of water power; storage and load; characteristics of modern turbines; selection of turbines; practical problems in design. Prerequisite: CE 313, 322, or 342. One recitation; 6 periods laboratory work.

CE 452. **Water Supply.** Any term, 3 hours.
A study of the quality and quantity of water necessary for a municipal supply and of works for its collection, purification, and distribution. Two recitations; 3 periods laboratory work.

CE 454. **Sewage Disposal.** Third term, 3 hours.
The several processes for the disposal and treatment of sewage; problems and considerations encountered in the design and operation of sewage treatment plants. Prerequisite: CE 453. Two recitations; 3 laboratory periods.

CE 460. **Estimating and Cost Analysis.** Third term, 3 hours.
Procedure in quantity surveying; general and detailed considerations in establishing unit prices; subcontracts, overhead cost and profit; methods of preparing estimates in construction. Three recitations.

CE 472. **Masonry and Foundations.** First or second term, 4 hours.
Study and design of masonry foundations, walls, piers, dams, and arches. Prerequisite: CE 371. Two recitations; 6 periods laboratory work.

CE 475. **Building Design.** Third term, 4 hours.
Study of various types and design of typical structural building frames. Prerequistie: CE 371. Two recitations; 6 periods laboratory work.

CE 482. **Structural Engineering.** First term, 4 hours.
Design of simple steel structures, beams, through and deck plate girders, and viaducts. Prerequisite: CE 381. Two recitations; 6 periods laboratory work.

CE 483. **Structural Design.** Second term, 4 hours.
Design and estimating of roof and bridge trusses. Prerequisite: CE 482. Two recitations; 6 periods laboratory work.

CE 484. **Structural Design.** Third term, 5 hours.
Design of voussoir and elastic arches. Prerequisite: CE 483. Two recitations; 9 periods laboratory work.

CE 485. **Structural Analysis.** Second term, 3 hours.
Advanced course. A study of statically indeterminate structures. Prerequisite: CE 381. One recitation; 6 periods laboratory work.

CE 486. **Elastic Deformations and Secondary Stresses.** Third term, 3 hours.
A continuation of CE 485. Prerequisite: CE 485. One recitation; 6 periods laboratory work.

CE 488. **Elements of Structures.** Any term, 3 hours.
Study and application of the theory of simple structures. Prerequisite: MM 353. One recitation; 6 periods laboratory work.

GRADUATE COURSES

CE 501. **Graduate Research.** Terms and hours to be arranged.
CE 503. Graduate Thesis. Terms and hours to be arranged.
CE 505. **Graduate Study.** Terms and hours to be arranged.
CE 507. **Graduate Seminar.** Terms and hours to be arranged.

Electrical Engineering

DESIGNED especially to train the young engineer in fundamental principles, the curriculum in Electrical Engineering subordinates both shop and laboratory to this end. Practical acquaintance with actual conditions can be acquired only in the field during vacation and after graduation. For this reason, and in order to afford mutual contact between the student and the men in the profession, the student is urged to spend at least a part of his vacation in some phase of industry employing electrical engineers.

The electrical industries of the Northwest have cooperated in providing opportunities for vacation employment in practical fields and many of the electrical manufacturing and operating companies throughout the United States have organized special training courses for introducing graduates to the field of application.

Equipment. The Electrical Engineering department is housed in Apperson Hall and is adequately provided with classroom and laboratory facilities. The laboratory equipment is suitable for demonstrating and verifying the fundamental electrical theory and principles taught in the classroom, and equipment is available for original research in some of the important fields.

Laboratories are available for instructional, experimental, and research work in general power, communications, electrical measurements, high-voltage, standardizing, storage batteries, and a field laboratory with a 1,000-meter transmission line for transmission and radio interference investigations.

The general power laboratory is equipped with alternating and direct current machinery and electronic power apparatus.

The communications laboratory is well provided with equipment for making studies involving currents, voltages and frequencies used in communication over wire circuits; for studying electronic devices; electro-acoustic equipment; and equipment for presenting transmission theory.

The measurements laboratory has adequate facilities designed for laboratory work on basic electrical theory during the sophomore year.

The high-voltage laboratory is equipped with apparatus for 60-cycle potentials up to 200,000 volts and impulse or "lightning" voltage waves of adjustable shape and magnitude up to 600,000 volts. This laboratory is also provided with a high voltage Du Four cathode ray oscillograph, sphere gap voltmeters, surge-voltage recorders, high-voltage rectifiers, and other apparatus necessary for the usual high-voltage tests.

The standardizing laboratory is provided with instruments for the precise measurement of potential, current, and power over wide ranges and for

the standardization and calibration of electrical measuring instruments and meters.

The storage battery laboratory contains both lead-acid and alkaline batteries and charging equipment for maintenance and testing.

Oscillographs of the Duddell type and also of the high and low voltage cathods ray types are available for the study of transients and other phenomena in any of the laboratories.

DESCRIPTION OF COURSES

LOWER DIVISION COURSES

EE 201, 202, 203. **Introduction to Electrical Engineering.** Three terms, 4 hours each term.

An introductory study of fundamental electrical phenomena and their application to electrical engineering. Two lectures; 1 two-hour problem period; 1 three-hour laboratory period.

UPPER DIVISION COURSES

EE 311, 312, 313. **Electrical Engineering.** Three terms, 3 hours each term.

A study of the electric circuit, direct and alternating current machines, their theory and characteristics. Three recitations.

EE 321, 322, 323. **Electrical Laboratory.** Three terms, 3 hours each term.

A laboratory course paralleling and coordinated with EE 311, 312, 313. One lecture; 1 three-hour laboratory period.

EE 351, 352, 353. **Industrial Electricity.** One, two, or three terms, 3 hours each term.

A study of fundamental electrical principles and electrical equipment emphasizing the applications to industry. Prerequisite: Ph 113. Two recitations; 1 three-hour laboratory period.

EE 355. **Airplane Electrical Systems.** Second term, 3 hours.

A course adapted to the needs of aeronautical engineering students. Fundamentals of electrical engineering with special applications to the airplane and its accessories. Prerequisite: Ph 111, 112, 113. Two recitations; 1 three-hour laboratory period.

EE 403. **Thesis.** Any term, 3 hours each term.

Elective on approval to undergraduates whose records indicate ability to initiate and complete special projects.

EE 405. **Advanced Studies.** Terms and hours to be arranged.

EE 407. **Seminar.** Any term, 1 hour each term.

Presentation of abstracts and discussion of articles in the current electrical periodicals. One recitation.

EE 411, 412, 413. **Electrical Engineering.** Three terms, 3 hours each term.

An analysis of electric-power generation, transmission, and distribution with special reference to the economic and financial problems involved. Three lectures.

EE 414, 415, 416. **Electrical Design.** Three terms, 1 hour each term.

Design and computations supplementary to EE 401. One three-hour period.

EE 421, 422, 423. **Electrical Laboratory.** Three terms, 3 hours each term.
A study of direct and alternating current machinery and electronic power apparatus to determine the fundamental characteristics and coordinate them with theory. The generation, regulation, conversion, rectification, and control of alternating currents are given special consideration. One lecture; 1 three-hour laboratory period.

EE 431. **Electric Lighting.** First term, 3 hours.
Study of electric lamps and their application to exterior and interior illumination. Three recitations.

EE 432. **Industrial Lighting.** Second term, 3 hours.
Problems in the application of illumination to industrial conditions. One lecture; 2 recitations.

EE 442. **Electrical Transportation.** Second term, 3 hours.
Study of the application of electricity to street and interurban railways; traffic conditions; rolling stock; speed time curves. Three recitations.

EE 443. **Railway Electrification.** Third term, 3 hours.
A study of factors governing the electrification of trunk lines. Three lectures.

EE 451. **Electrical Transients.** First term, 3 hours.
A theoretical and experimental study of both direct and alternating-current single-energy and double-energy transients in circuits and machines having both fixed and variable circuit constants. One lecture; 1 recitation; 1 four-hour laboratory period.

EE 452, 453. **High Voltage Engineering.** Second and third terms, 3 hours each term.
The experimental investigation and study of dielectric phenomena in high-voltage engineering. Special attention is given to the dielectric field, the ionization and conduction of electricity through gases, corona problems encountered in high-voltage power transmission, and the characteristics of liquid and solid dielectrics. Two lectures; 1 four-hour laboratory period.

EE 455. **Electrical Characteristics of Transmission Circuits.** Second term, 3 hours.
A study of transmission theory and of the electrical characteristics of transmission lines and electrical networks. Two lectures; 1 three-hour laboratory period.

EE 461. **Communication Laboratory.** First term, 3 hours.
A study of instruments and measuring apparatus, and the theory of measurements in communication circuits. Two lectures; 1 three-hour laboratory period.

EE 462. **Electrical Communication.** Second or third term, 3 hours.
A general study of electrical communication with special attention to voice and carrier frequency, telephone problems, transmission theory, inductive interference, and related subjects. Two lectures; 1 three-hour laboratory period.

EE 463, 464. **Electron Tubes and Circuits.** First and second terms, 3 hours.
A theoretical and experimental study of thermionic vacuum tubes, phototubes, and other electronic devices, and their uses in electrical circuits. Two lectures; 1 three-hour laboratory period.

EE 465. **Engineering of Sound Systems.** Third term, 3 hours.
A study of microphones, amplifiers, loud speakers, and other similar apparatus, and the engineering problems involved in the design, installation, and operation of sound systems. Two lectures; 1 three-hour laboratory period.

EE 473. **Electrical Problems.** Third term, 3 hours.
Advanced problems in electrical engineering, unbalanced circuits, symmetrical components, and equivalent networks. Three recitations.

GRADUATE COURSES

EE 501. **Graduate Research.** Terms and hours to be arranged.
Advanced studies in the science or technology of electrical engineering. Comprehensive reports indicating a thorough mastery of the fields studied are required in each case.

EE 503. **Graduate Thesis.** Terms and hours to be arranged.
Original problems of a research nature chosen by the student or suggested by the department are studied and reported upon in thesis form.

EE 505. **Graduate Study.** Terms and hours to be arranged.

Industrial Arts

IT is the purpose of this department to aid in the promotion of industry through providing technical training for those who plan to enter industrial careers and for those who plan to teach industrial arts subjects in the public schools. The work of the department, in meeting these aims and purposes, falls under three main fields of training.

(1) Industrial Arts Education: Training teachers of industrial subjects.
  (a) Industrial arts.
  (b) Trades and industries.

(2) Industrial Administration: Training for junior executives in industry.
  (a) Technical operations.
  (b) Production management.

(3) Service courses in shop work for engineering students.

Training in technical operations and the technology of industrial processes is fundamental in all three fields and forms the main part of the work of the first two years in groups (1) and (2) above. Each of these two fields of major choice offers a great number of specific objectives through different avenues of training.

The Curriculum in Industrial Arts Education is designed to give the type of training required for successful teaching in the public shools and for entrance into college teaching. The work of the last two years is given over mainly to the science and philosophy of education and to applied principles of pedagogy. These courses are based upon and interpreted through the technical background formed during the first two years. While a strong motivating thread of technical training is present throughout the four-year curriculum, the work of the junior and senior years is outstanding in the opportunities created for election of both technical and non-technical subjects that will meet the needs of individual students following different avenues of training.

The Curriculum in Industrial Administration is based upon a fundamental combination of technical manufacturing processes and business administrative principles. Specialization during the junior and senior years involves further study of industrial organization and management, labor problems, cost accounting, and production control. This curriculum is designed to meet the increasing demand for workers in Industry who are trained in the basic sciences and in the fundamentals of industrial organization and management, and who through their knowledge of technical and industrial operations, can work more quickly and efficiently into junior executive positions. Provision is made for election of both technical and non-technical subjects that will meet the needs of individual students.

Facilities. The department of Industrial Arts is housed in the Industrial Arts Building and the Foundry, both being modern, well-lighted structures, with a combined floor space of approximately twenty-five thousand square feet. The principal subdepartments comprise Mechanical Drawing, Woodwork and Furniture Construction, Millwork in Wood, Wood and Metal Finishing, Pattern Making Foundry, Forging and Welding, Machine Shop, and Sheet Metal. Each of these subdepartments is provided with individual shops of ample size and is carefully equipped along modern and approved lines. These strictly departmental facilities are reinforced through the facilities and equipments of other departments, such as Art and Architecture, Technical Forestry, Mechanical Engineering, the basic sciences, etc., and the Corvallis Public Schools, all of which contribute toward the enrichment of curricula and opportunities for Industrial Arts students. The supervised teaching for those majoring in Industrial Arts Education is done in the Corvallis Public Schools. The program for the last two years of work is administered jointly with the department of Industrial Education *(see* School of Education).

DESCRIPTION OF COURSES

LOWER DIVISION COURSES

IA 111. **Pattern Making**. First term, 3 hours.

Instruction and practice in the fundamentals of pattern making, with emphasis upon the relation of pattern making to drafting, design, foundry and machine-shop operations. Formulation of course outlines and discussion of methods of teaching pattern making. One lecture; 6 laboratory periods.

IA 112, 113. **Methods in Woodworking.** Second and third terms; 3 hours each term.

A course in woodworking, with special reference to tool technique, applied design, and craftsmanship in new and individual projects. Primarily an elementary course, with incidental reference to course outlines and methods of teaching. One lecture; 6 laboratory periods.

IA 141. **Foundry Practice.** First term, 3 hours.

Green- and dry-sand molding, core making, melting and mixing of iron and cupola management, with suggestions for courses of study and teaching. Three three-hour laboratory periods.

IA 152. **Forging and Welding.** Second term, 3 hours.

Exercises and projects in bending, shaping, upsetting, and welding of iron; hardening and tempering steel; brazing and elementary acetylene and electric welding. Suggestions for care of equipment and for organization of instructional material. Three three-hour laboratory periods.

IA 163. **Machine Shop.** Third term, 3 hours.

Exercises and projects involving instruction in the use of basic machine tools, with suggestions for courses of study and teaching. One lecture; 2 three-hour laboratory periods.

IA 220. **Wood Turning.** Second term, 2 hours.

Thorough instruction in tool processes and lathe technique, executed through the designing, turning, and finishing of individual projects of merit. Prerequisite: IA 111 or 112. Six laboratory periods.

IA 225. **Machine and Tool Maintenance (Wood Shop).** First term, 2 hours.

Methods of care and maintenance of woodworking tools, machines, and supplementary equipment. Band-saw brazing, saw sharpening, sharpening and setting of planer, jointer, tenoner and shaper knives and the repair and maintenance of hand tools. Prerequisite: IA 112. Six laboratory periods.

IA 240. **Foundry Practice.** Any term, 2 hours.

Principles of iron foundry practice including use and care of cupolas; mixing and melting of iron; preparation of cores. Strictly commercial practice on a production basis. Also includes discussion of pattern requirements. Intended primarily for Engineering students. Not open to Industrial Arts majors. Six laboratory periods; 3 lectures during term, to be arranged.

IA 242. **Foundry Practice.** Third term, 2 hours.

Advanced course. A continuation of IA 141 or IA 240, with emphasis on more advanced processes and a study of production costs. Six laboratory periods.

IA 250. **Forging and Welding.** Any term, 2 hours.

Principles and practice of forging and welding, including gas, electric, thermit, and hammer welding, in line with modern manufacturing processes. Intended primarily for Engineering students. Not open to Industrial Arts majors. Six laboratory periods; 3 lectures during term to be arranged.

IA 252. **Blacksmithing.** First or third term, 2 hours.
Advanced course. A continuation of IA 152 or IA 250, with emphasis on farm blacksmithing and repair problems. Six laboratory periods.

IA 260. **Machine Shop Practice.** Any term, 2 hours.
Manipulation of basic machine tools with prescribed projects. Correlation of engineering, managerial, and manufacturing problems. Six laboratory periods; 3 lectures to be arranged during the term.

IA 261. **Machine Shop Practice.** Second term, 2 hours.
Manipulation of basic machine tools with individual projects. Survey of machines used for quantity production. Prerequisite: IA 163 or 260. Six laboratory periods.

IA 263. **Machine Drawing.** Third term, 3 hours.
Application of the elements of machine design through the designing and drawing of machine parts, jigs, and special fixtures. Given in cooperation with the machine shop and intended primarily for Industrial Arts students. Two three-hour drafting periods.

IA 265. **Machine and Tool Maintenance (Machine Shop.)** First term, 2 hours.
Maintenance and repair problems for mechanical equipment; lubrication; problems in use of safety appliances. Prerequisite: IA 163 or 260. Six laboratory periods.

UPPER DIVISION COURSES

IA 311. **Furniture Construction Drawing.** First term, 2 hours.
A study of types and periods of furniture and an application of the principles of design to the technique of furniture and cabinet drawing. Prerequisite: GE 112, AA 295 or equivalent. Six laboratory periods.

IA 312. **Mill work—Machine Woodwork.** First term, 3 hours.
A production course in machine woodworking in which jobs are selected and the class personnel so organized that the work follows closely those methods used in factory production. Prerequisite: IA 112. Three three-hour laboratory periods.

IA 313, 314. **Furniture Construction.** Second and third terms, 2 hours each term.
The designing and construction of furniture and cabinet work, according to the needs and ability of the individual student. Prerequisite: IA 311, 312. Six laboratory periods.

IA 315. **Upholstering and Seat Weaving.** Third term, 2 hours.
A study of typical cases of upholstering, including foundations with and without springs. Seat and panel weaving with cane and fiber. Prerequisite: IA 112 or equivalent. Six laboratory periods.

IA 316. **Wood and Metal Finishing.** Second or third terms, 2 hours each term.
A study of materials, processes, and methods of application of finishes for both wood and metal surfaces; both brush and spray ap-

plication of all types of finishing materials; special attention to the modern lacquer finishes (including Duco) for both furniture and automobile work. Prerequisite: IA 112 or equivalent. Six laboratory periods.

IA 321. **Wood Turning.** Second term, 1 hour.
Advanced course. A continuation of IA 220. Emphasis upon more intricate cuts and turning processes, special chucking devices and fancy turning. Prerequisite: IA 220. One three-hour laboratory period.

IA 326. **Fiber Furniture Weaving.** Second term, 2 hours.
The construction of frames and the weaving of art fiber furniture, with suggestions for the use of this material in public school teaching. Prerequisite: IA 112 or equivalent. Six laboratory periods.

IA 332. **Pattern Making.** Second term, 2 hours.
Advanced course. A continuation of IA 110, with emphasis upon the problems in the making of patterns for more complicated machine parts and upon factors influencing production cost of these parts. Six laboratory periods.

IA 333. **Carpentry.** Second term, 3 hours.
The fundamentals of house carpentry, involving discussion of forms and foundations and the practical application of problems in framing, use of steel square, exterior and interior finish, and estimating. Prerequisite: IA 112. One lecture; six laboratory periods.

IA 343. **Brass and Alloy Foundry.** Second term, 1 hour.
Practice in brass and alloy foundry and the compounding of simple alloy mixtures. Prerequisite: IA 141 or 240. One lecture; 2 laboratory periods.

IA 350. **Welding Practice.** First or third term, 1 hour.
Advanced course. A study of the problems of electric and acetylene welding, with reference to intricate and specialized operations. Conducted upon an investigational basis. Prerequisite: IA 152 or 250. One lecture; 2 laboratory periods.

IA 353. **Ornamental Iron Work.** Third term, 2 hours.
Craftsmanship in wrought iron work. The designing and making of wrought iron furnishings, lamps, light fixtures, etc. Prerequisite: IA 152 or IA 250. Six laboratory periods.

IA 354. **Heat Treating.** First term, 2 hours.
A study of methods and materials for heat treating and the practical application of the principles of hardening, tempering, annealing and case hardening. Prerequisite: IA 152 or IA 250. One lecture; 4 laboratory periods.

IA 361. **Time and Motion Studies.** Second term, 2 hours.
Use of time studies as an aid in management. Methods and procedure for determining time and motion standards. Prerequisite: IA 260 or 261. One lecture; 4 laboratory periods.

IA 362. **Machine Shop.** Third term, 2 hours.
Manipulation of basic machine tools and the performance of operations requiring accomplished skills. Individual projects and problems. Application of jigs, fixtures, and dies used in modern manufacturing industries. Prerequisite: IA 261. Six laboratory periods.

IA 363. **Production Machine Work.** First term, 3 hours.
Problems in design of tools, jigs, fixtures, and dies in relation to quantity production. Individual problems and projects in design and tool making. Prerequisite: IA 261. One lecture; 6 laboratory periods.

IA 370. **Practical Electricity.** First term, 3 hours.
Electrical wiring problems, including signal, light, and power circuits, and a study of underwriters' specifications for electrical installation; making electrical projects suited for use in public school teaching. Prerequisite: Ph 203 or equivalent. One lecture; 6 laboratory periods.

IA 380. **Sheet Metal Work.** Third term, 3 hours.
Exercises and projects in sheet metal work including sheet metal pattern drafting and technical operations. Suggestions for course outline and methods of teaching. Prerequisite: GE 112. One lecture; 6 laboratory periods.

IA 407. **Industrial Seminar.** Second term, 2 hours.
A study of current practices in industry and manufacturing, culminating in a term report on assigned subjects within the field of specialization. Prerequisite: IA 361, 363.

IA 411. **Shop Planning and Organization.** Second or third term, 3 hours.
Planning and organizing the physical plant for different types of school or industrial shops. Second term for industrial administration majors; third term for industrial arts education majors interested in school shop planning. Prerequisite: IA 363 or Ed 315. One lecture; 6 laboratory periods.

IA 463. **Production Engineering.** Third term, 3 hours.
Principles of management applied to production problems, stressing planning and despatching, personnel organization, and use of records. Prerequisite: IA 261, and IA 363 or 312. One lecture; 6 laboratory periods.

Mechanical Engineering

THE curriculum in Mechanical Engineering is planned to prepare young men for useful and responsible positions in power plants, various manufacturing enterprises, oil refineries, the metal industries, heating and ventilating, refrigerating, air conditioning, and in the automotive and aeronautical industries.

Equipment. The department has drafting and computing rooms supplied with the necessary desks, boards, and lockers. The department laboratories are equipped for tests and demonstrations in steam, gas, and aeronautical engineering, and on engineering materials. All the laboratories are in the Engineering Laboratory.

The steam laboratory contains two turbines and four engines of different types, installed in such a way that complete tests for economy and efficiency can be made. Other steam engines, permanently installed, are used for the more elementary work. A horizontal water-tube boiler furnishes the steam for laboratory purposes and for heating the building and is provided with the necessary facilities for testing. The college heating plant, consisting of three 5,000-square-foot boilers and necessary auxiliaries, is also provided with testing facilities.

The internal-combustion engine laboratory contains gasoline engines, two semi-Diesels, a full Diesel connected to generator, a four-cylinder 120-horse-power two-cycle oil engine, both fully equipped for testing, a 100-horse-power Sprague electric dynamometer, and automobile engines installed with necessary facilities for complete tests for economy and efficiency. Several other gas engines are available for the more elementary work, together with the usual accessories, auxiliaries, and instruments for testing and analysis of tests.

The aeronautical laboratory includes a selection of modern aircraft engines, both air and water cooled; a complete airplane of the Navy fighter type; and numerous wing panels, tail surfaces, instruments, and miscellaneous airplane parts. A small water channel for the study of fluid flow is also available.

Approximately 14,000 square feet of floor space is devoted to engineering materials affording separate laboratories for structural materials, cement and concrete, bituminous and non-bituminous highway materials, oils, fuels, and the microscopic examination and heat treatment of metals. The equipment is modern and is well arranged for the work of instruction and research.

DESCRIPTION OF COURSES

LOWER DIVISION COURSES

ME 211. **Descriptive Geometry.** First term, 3 hours.

Theory and problems on the projection of points, lines, surfaces, and solids. An effort is made to make the work as practical as possible and to reveal to the student its value in solving drafting-room problems. Prerequisite: GE 111, 112. One recitation; 2 three-hour drawing periods.

ME 212. **Mechanics (Statics).** First or second term, 3 hours.

Forces and force systems with reference to the equilibrium of rigid bodies, including simple framed structures; methods of finding centers of gravity and moments of inertia and their practical applications; numerous problems having engineering application. Prerequisite; differential calculus. One recitation; 2 two-hour computing periods.

ME 213. **Mechanics (Dynamics).** Second or third term, 3 hours.

A continuation of ME 212 dealing with principles and problems in kinetics; force as a factor causing motion; work, energy, friction, and impact studied and illustrated by means of numerous problems. Prerequisite: ME 212. One recitation; 2 two-hour computing periods.

ME 221, 222, 223. **Heat Engineering.** Three terms, 3 hours each term.

An introduction to the theory of heat and its engineering applications. Study of the gas laws, properties of steam, and fuels. Descriptive

presentation of internal-combustion and steam engines and other heat-power equipment. Prerequisite: GE 101, 102. Three recitations first term; 2 recitations, 1 three-hour laboratory period second and third terms.

ME 225. **Elementary Heating and Ventilating.** First term, 3 hours.

The fundamental principles of heating and ventilating systems for homes and industrial buildings; fuels, combustion, draft, radiation; fresh air requirements, etc.; hot air, hot water, steam and vapor systems compared and designed; stress placed upon cost, efficiencies, and utility of installations. Prerequisite: elementary chemistry and physics. One lecture; 2 three-hour laboratory periods.

ME 242. **Elements of Machine Design.** Second term, 3 hours.

An introductory course in machine design. Simple designs; design drawing; application of the principles of descriptive geometry to the solution of problems; calculations of machine stresses; kinematics. Prerequisite: GE 111, 112, 113. One recitation; 2 three-hour drafting periods.

UPPER DIVISION COURSES

ME 311. **Strength of Materials.** First or third term, 3 hours.

In this course the general principles of mechanics are applied to the elements of engineering structures to determine their strength and fitness. Tensile and crushing strength of various engineering materials; stresses in beams and girders under different systems of loading and support; supporting strength of columns; application of torsion to shafts in transmission of power. Prerequisite: ME 212. One recitation; 2 two-hour computing periods.

ME 312. **Mechanism.** Second term, 3 hours.

A study of mechanical movements, including velocity ratios, transmission of motion by link work, gearing, cams, and belting. One recitation; 2 three-hour laboratory periods.

ME 316. **Materials of Engineering.** Any term, 3 hours.

A lecture and laboratory course on the materials of engineering construction with special reference to the methods and specifications adopted by the American Society for Testing Materials and other national engineering organizations. One lecture; 1 three-hour laboratory period.

ME 321, 322, 323. **Heat Engineering.** Three terms, 3 hours each term.

Thermodynamic processes involved in the transformation of heat energy into work; steam cycles; gas laws; air compressor cycle; gas and vapor mixtures; internal-combustion engine cycles; steam turbines; refrigeration cycle; and problems involving special applications of theromdynamic principles. Prerequisite: Mth 203 or 206; Ph 113; ME 221, 222. Two recitations; 1 three-hour problem period.

ME 331, 332. **Heat Power Engineering.** First and second terms, 3 hours each term.

A brief descriptive survey of the heat power plant and principal auxiliaries; study of the physical properties and laws of gases; their application to the air compressor, air motor, automobile engine, and

Diesel engine; introduction to study of vapors, use of steam tables, humidity, steam cycles; a flow sheet for a modern central station sketched; function of each piece of equipment; study of fuels, combustion, evolution of the boiler furnace, types and characteristics of boilers, furnace and boiler efficiency, superheaters, economizers, air preheaters, feed water heaters, condensers, heat transfer, flow of gases and vapors, steam turbines, and power plant piping. Prerequisite: Mth 203 or 206, Ph 113. Two recitations; 1 three-hour computation or laboratory period.

ME 333. **Heat Power Engineering.** First term, 3 hours.
Continuation of ME 332. Principally laboratory work involving operation and testing of steam boilers, steam turbines, steam engines, gas and air machinery. Special attention is given to latest practice and standard methods of testing power machinery, study of instruments used in testing, and their proper application. One recitation; 1 three-hour laboratory period.

ME 342. **Aerodynamics.** Second term, 3 hours.
Study of elementary aerodynamic theory and phenomena. Characteristics of airfoils and airfoil combinations. Factors affecting stability, control, and performance. Prerequisite; junior standing. Three recitations.

ME 343. **Aero Propulsion.** Third term, 3 hours.
Study of screw propellor theories; factors influencing selection of engines, propellers, and power plant accessories for specific airplane; power plant installation. Prerequisite: ME 342. Two recitations; 1 three-hour laboratory period.

ME 345. **Steam, Air, and Gas Power.** First or second term, 3 hours.
A course adapted to the needs of Civil Engineering students. Elementary principles of thermodynamics; properties of steam; fuels and their combustion; boilers; and auxiliaries. Prerequisite: GE 101, 102; Mth 203. Two recitations; 1 two-hour computation period.

ME 346. **Steam Air, and Gas Power.** Third term, 3 hours.
Performance and operation of internal combustion engines; steam turbines, steam engines; fans, blowers, and air compressors. Various laboratory tests are made. Two recitations; 1 three-hour laboratory period.

ME 351, 352, 353. **Mechanical Laboratory.** Three terms, 2 hours each term.
A basic year-sequence in machine testing. Detailed study of the proper application of instruments such as gases, engine indicators, planimeters, calorimeters, gas analyzers, flow meters, and absorption dynamometers. Tests of common machines and the interpretation of test results. Instruction in the preparation of the usual types of engineering reports. Must be taken parallel to ME 321, 322, 323. One recitation; 1 three-hour laboratory period.

ME 403. **Thesis.** Any term, 3 hours.
Elective on approval to undergraduates whose records indicate ability and initiative to complete special projects.

ME 405. **Advanced Studies.** Terms and hours to be arranged.
Readings or research, with reports, on special topics.

ME 407. **Seminar,** First term, 1 hour.
Practice in effective writing and speaking on engineering and allied subjects. Preference is given to the discussion of new developments in the field of mechanical engineering. The work supplements that of the prescribed courses.

ME 411, 412, 413. **Machine Design.** Three terms, 3 hours each term.
Three terms of work covering application of the principles of mechanism, mechanics, and strength of materials to design of machine elements. Problems involving riveted joints; screws; shafts and shafting; belt and rope drive; pulleys; gearing; bearings; machine frames; analysis of force and energy problems; fly-wheels; engine balancing; computations and drawings necessary to the design of one or more complete machines. Prerequisite: ME 311. One recitation; 2 three-hour design periods.

ME 414. **Highway Materials Laboratory.** First term, 3 hours.
Designed particularly for those specializing in Highway Engineering. Different roads and paving materials and binders are tested and their relative values determined. Sheet-asphalt mixtures and bituminous mortars are studied to determine the effects of various changes in the grading of the aggregates. Finally, samples of various types of roads and pavements are analyzed for density, composition, and grading, with special reference to their conformity with specifications. Assigned references. One lecture; 1 four-hour laboratory period.

ME 415. **Structural Laboratory.** Second term, 3 hours.
An advanced laboratory course on plain and reinforced concrete beams and columns to study methods of reinforcing. Design of concrete mixtures. Stress distribution under unsymmetrical loads. Riveted and welded joints. Thermal conductivity of concrete. Study of stresses in structures by strain gage. Prerequisite: ME 316. One lecture; 1 four-hour laboratory period.

ME 416. **Stress Analysis.** Third term, 3 hours.
Designed to give a working knowledge of methods of solving problems in stregnth of materials which the usual methods of analysis will not satisfy. Emphasis on stresses in thick-walled cylinders, curved flexural members, flat plates, and on non-circular sections in torsion. Localized stresses and statically indeterminate structures are also considered. Prerequisite: ME 311. Three recitations.

ME 422, 423. **Fuel Engineering.** Second and third terms, 3 hours each term.
Technical study of fuels, involving their origin, physical and chemical properties; careful study of the composition of solid, liquid, and gaseous fuels relating to their quality and adaptability for commercial use; the laws governing their combustion; coal carbonization, both high and low temperature methods; application of fuels to industry stressed. Especially designed to supplement the work in fuels as given in earlier courses and is an advanced treatment of the entire subject of fuel technology. Prerequisite: ME 323.

ME 425. **Fuel and Lubricant Testing.** Second or third term, 3 hours.

A laboratory course covering the testing of fuels, and of materials such as oils, bearing metals, etc., used in power transmission. Designed particularly as an elective course for Mechanical and Electrical Engineering students. Assigned readings and reports. Prerequisite: ME 316. One lecture; 1 four-hour laboratory period.

ME 431, 432. **Power Plant Engineering.** First and second terms, 3 hours each term.

A study of the performance of steam and internal-combustion engine power plants from the design standpoint; heat transfer in engineering apparatus; selection of equipment to secure proper unification and efficient operation as well as economic balance. Prerequisite: ME 323. Two recitations; 1 three-hour problem or design period.

ME 441, 442, 443. **Airplane Design.** Three terms; 3 hours each term.

Design of airplanes for specific duties. Estimation of weights, balance, stability, and performance. Computation of loadings and design of major structural parts. Prerequisite: ME 342. One recitation; 2 three-hour laboratory periods.

ME 446. **Advanced Aerodynamics.** Third term, 2 hours.

Fundamental theory of fluid flow, infinite and finite wing theory as developed by Kutta-Joukowski, Prandtl, and others. Prerequisite: ME 342. Two recitations.

ME 451, 452. **Mechanical Laboratory.** First and second terms, 2 hours each term.

Testing of steam turbines, heating and ventilating equipment, a complete boiler plant, and internal-combustion engines. Fundamentals of boiler-water treatment and control. Calculation and analysis of test results. Preparation of reports. Prerequisite: ME 353. One four-hour laboratory period.

ME 453. **Mechanical Laboratory.** Third term, 2 hours.

Special laboratory problems selected on the basis of interest of the student and equipment available. Prerequisite: ME 452. Periods arranged according to project.

ME 461. **Heating and Ventilating.** Third term, 3 hours.

Study of modern methods of heating and ventilating; approved systems of heating by means of air, steam, and hot water; methods of computing radiating surface; effective methods of ventilation; general design; construction and operation of heating plant. Prerequisite: ME 323. One recitation; 2 three-hour laboratory periods.

ME 462. **Refrigeration.** Third term, 3 hours.

A study of the thermodynamics of refrigeration, systems in use and principal characteristics of each, fundamentals of design, principal applications with special reference to the industries of the Northwest. Prerequisite: ME 323. Two recitations; 1 three-hour laboratory period.

ME 473. **Industrial Engineering.** Third term, 3 hours.

Especially arranged for Engineering students. Various industrial organization systems and their methods of operation, including ap-

prenticeship courses, labor problems, and process work; the problems of engineering contracts and specifications, laying special stress upon the engineering phraseology and introducing modern legal standards. Three recitations.

ME 481. **Metallography and Pyrometry.** Any term, 3 hours.
Lectures and laboratory work designed to give a working knowledge of the methods of study of structure of metals and alloys; particular attention given to correlation of thermal and mechanical treatment with structure and physical properties of iron and steel; calibration and use of various types of pyrometers; laboratory experiments in heat treatment; preparation of specimens; etching; studying structure under the microscope; making photomicrographs; physical tests, whenever possible, to show the effects on strength, ductility, hardness, or other mechanical properties of the different thermal treatments or other industrial processes. Prerequisite: ME 316. One lecture; 1 four-hour laboratory period.

ME 482. **Metallography.** First or third term, 3 hours.
Study of alloy equilibrium diagrams; preparation of difficult specimens; high power photomicrography; correlation of thermal, electrical and magnetic properties of iron and some of its alloys with microstructure; dilatometry as related to heat-treatment; study of structure and treatment of special steels and other alloys. Prerequisite: ME 481. One lecture; 1 four-hour laboratory period.

GRADUATE COURSES

ME 501. **Graduate Research.** Terms and hours to be arranged.
Special problems which may involve assembling and correlating of existing data on some specific subject; design; analysis of experimental data; or research. Detailed written reports are required.

ME 503. **Graduate Thesis.** Terms and hours to be arranged.
Original problems of a research nature chosen by the student or suggested by the department are studied and reported upon in thesis form.

ME 505. **Advanced Study.** Terms and hours to be arranged.
Readings or research, with reports, on special topics.

ME 507. **Graduate Seminar.** Three terms, 1 hour each term.
A discussion of research problems and projects of the Engineering Experiment Station; critical reviews of developments in the fields of science and technology.

Mining Engineering

MINING engineering courses provide instruction in those fundamental principles of engineering technology which are basic and common to the fields of ore excavation (mining), ore dressing (beneficiation), and smelting (metal production)—the whole field, in fact, of the mineral industry. The courses in metallurgy and mining engineering are service courses open to any students properly qualified. Not all of these

courses are offered in any one year. Those offered in the current year are so designated in the descriptions of courses.

Equipment. The department occupies jointly with the chemical engineering and geology departments a three-story and basement building known as the Mines Building which was designed especially to house the lecture rooms and laboratories devoted to mining, metallurgy, ore dressing, and closely allied subjects. The assaying and metallurgical laboratories are completely equipped with the necessary apparatus for efficiently conducting experimental metallurgical operations, crushing, and grinding. Ore-dressing laboratories affording modern metallurgical testing equipment are located in the basement. Adequate class and drafting-room facilities are available in this building.

Courses in scientific and economic geology are taught in the same building under the direction of the Department of Geology, as described under School of Science.

COURSES IN METALLURGY

LOWER DIVISION COURSE

Met 263. **Assaying.** Third term, 3 hours.

Commercial methods of wet and dry assay ores, metallurgical products. Prerequisite: Ch 232 or equivalent. One recitation; 2 three-hour laboratory periods. Offered 1934-35.

UPPER DIVISION COURSES

Met 461. **General Metallurgy.** First term, 3 hours.

An introduction to general metallurgy. Properties of metals, alloys, fuels, refractories; pyrometallurgy, hydrometallurgy, electrometallurgy; general operations. Prerequisite: Ch 232 or equivalent. Three recitations.

Met 462. **Metallurgy of the Base and Precious Metals.** Second term, 4 hours.

Metallurgy of gold, silver, copper, lead, and zinc. Short course in iron and steel included. Prerequisite: Met 461. Four recitations.

Met 471, 472. Fire **Assaying.** First and second terms, 2 hours each term.

Testing reagents; sampling ores; fire assay methods for precious and base metals; bullion assays. Prerequisite: Ch 232 or equivalent. Two three-hour laboratory periods. Offered 1934-35.

Met 481, 482, 483. **Ore Dressing.** Three terms, 3 hours each term.

The principles of crushing and concentrating ore minerals; various treatment processes. Prerequisite to Met 481, 482: G. 201, 202, 203, or their equivalent. Prerequisite to Met 483: Met 482, Ch 232, 340. Three recitations first two terms; 2 recitations, 1 three-hour laboratory period third term. Met 481, 482 offered 1934-35.

Met 491, 492. **Ore Dressing Laboratory.** First and second terms, 3 hours each term.

Laboratory work in connection with Met 491, 492. Prerequisite: Met 471, 472, 481, 482. One seminar period; 4 two-hour laboratory periods.

COURSES IN MINING ENGINEERING

LOWER DIVISION COURSES

MiE 141, 142. **Mineral Industry Survey.** Second and third terms, ½ hour each term.

An introductory course including engineering problems and constituting an integral part of a general survey of our mineral resources. One lecture. Offered 1934-35.

MiE 243. **Excavation, Explosives, and Blasting.** Third term, 3 hours.

A course dealing with special methods of surface excavations. Three recitations.

UPPER DIVISION COURSES

MiE 405. **Advanced Studies.** Terms and hours to be arranged.

Readings and reports on special topics. Offered 1934-35.

MiE 407. **Mining Engineering Seminar.** Any term, 1 hour each term.

Discussion of current problems, practices, developments, trends. One period.

MiE 433. **Mining Machinery, General Mining Operations.** Third term, 3 hours.

A study of machinery and equipment required in mining operations and their application to specific field uses. Students should consult with the staff before registering. Prerequisite: GE 111, 112, 113. Three recitations. Offered 1934-35.

MiE 441. **Mining Methods.** First term, 4 hours.

General considerations involved in choice of methods used to develop and mine mineral deposits. Prerequisite: GE 111, 112, 113. Four recitations.

MiE 442, 443. **Mining Engineering.** Second and third terms, 3 hours each term.

Continuation of MiE 441 with reference to correlation of various operations involved, ventilation, transportation, drainage, power plant design, mining law, etc. Detailed consideration of problems in mine management and operation. Problem analysis. Prerequisite: MiE 441 or equivalent. Three recitations first term; one lecture, 2 three-hour laboratory periods second term.

MiE 453. **Mine Surveying.** Third term, 3 hours.

Thorough consideration of surveying problems met with in mining engineering practice. Determination of true meridian. Includes two weeks of field work at end of term in actual mining survey work. Prerequisite: CE 221; GE 111, 112, 113. Two recitations; 1 three-hour laboratory period. Offered 1934-35.

MiE 461. **Mine Economics and Mining Law.** First term, 3 hours.

Special attention is given to mining costs and legal phases. Students should consult with the department before registering. Three recitations.

MiE 462. **Mine and Power Equipment.** Second term, 3 hours.

A study of mining machinery, power installation, their correlation. Students should consult with the department before registering. Prerequisite: MiE 433. Three recitations.

MiE 463. **Mine Plant Design.** Third term, 2 hours.

Advanced problem study. Students should consult with the department before registering. Prerequisite: MiE 433, 442. Two three-hour laboratory periods.

School of Forestry

Faculty

GEORGE WILCOX PEAVY, M.S.F., Dean of the School of Forestry.
MARY LOU TILTON, Secretary to the Dean.

Logging Engineering

HENRY RICHARD PATTERSON, JR., B.S., Professor of Logging Engineering; Head of Department.
FRED JACOB SCHREINER, B.S. (L.E.), Instructor in Logging Engineering.

Technical Forestry

THURMAN JAMES STARKER, B.S., Professor of Forestry; Head of Department.
EARL GEORGE MASON, M.F., Professor of Forestry.
JOE O. LAMMI, B.S., Research Assistant.
VERN MCDANIEL, M.S., Forest Nurseryman.

Wood Products

WILLIAM JENNINGS BAKER, M.S., Associate Professor of Wood Products; In Charge of Department.
STANLEY BISHOPRICK, B.S., Research Assistant.

General Statement

OREGON'S immense timber resources and the vast area of land within the state suited to no other use than the continued production of timber crops point to a very definite obligation on the part of the Oregon State School of Forestry. That obligation is to train men so to manage these great properties that the maximum product may be received from them, that this maximum production may be continuous, and that the product itself may be economically and most efficiently utilized. Oregon has an interest in forestry greater than any other state in the Union. The state has within its limits an area of 22,000,000 acres which, because of peculiarities of soil, topography, and climate, appears to be permanently classified as forest land. The economic interests of the state unquestionably demand that this great basic resource should be kept at work producing that which it is best adapted to grow. Under present methods of utilization, Oregon has approximately 400 billion feet of standing timber, the largest amount possessed by any state, and an amount equaling fully 20 per cent of the total stand remaining in the United States.

While the lumber industry of Oregon is, comparatively, in an early stage, yet an area of more than 100,000 acres of timber-land is now annually

cut over. This product has a value in excess of $100,000,000. In harvesting and manufacturing this timber crop 47,000 men are normally employed.

Major Curricula. The School of Forestry offers major curricula providing training for service in three distinct fields of the forestry profession: technical forestry, logging engineering, and wood products. In the freshman and sophomore years all students follow the same program of studies, following which they may elect one of the three major curricula.

TECHNICAL FORESTRY. In technical forestry the School has a dual responsibility. It has its obligation to the Federal Government in training men to be of service in helping to manage the National Forests, which now comprise an area of more than 160,000,000 acres. This is a very definite responsibility for the reason that the nation normally is cutting its timber crop four times as rapidly as a new crop is being grown. This fact points to a time, not far distant, when the country will be without reasonably priced timber. History has very clearly shown that adequate timber supplies have made a decided contribution to the general welfare. Closely tied in with the problem of an adequate timber supply is the problem of the use of land, suited to no other purpose than the growth of tree crops. The School has its more immediate obligation to the State of Oregon in preparing men to aid in solving the forestry problems which are involved chiefly in the reforestation and protection of the commonwealth's 10,000,000 acres of privately owned timber-lands. An industry which normally has a pay-roll of 47,000 men and which annually produces wealth in excess of $100,000,000 is one which every economic and social consideration dictates should be conserved and perpetuated. This accomplishment is one of the chief objectives of the School of Forestry. The major curriculum leads to the degree of Bachelor of Science in Forestry.

LOGGING ENGINEERING. The logging engineer is the product of the Pacific Northwest. Far-sighted men in the industry, realizing the peculiar engineering requirements of their business, requested the schools of forestry to train men for service in this branch of the lumber industry. Departments of logging engineering were organized in response to this request. The logging engineer is trained in timber appraising, in topographic surveying in rough country, in the preparation of topographic and relief maps from field data, in the location and construction of logging railroads, in bridge design, and in making topographic logging plans. The major curriculum in Logging Engineering, prepared in consultation with some of the ablest timbermen in the state, leads to the degree of Bachelor of Science in Logging Engineering.

WOOD PRODUCTS. Sawing logs into boards can no longer be regarded as the sole objective of the sawmill man. His business involves such problems as the design of his plant for efficient operation, the organization and management of the plant, kiln-drying of lumber, refinement of manufacture, human efficiency, and scientific merchandising. In response to the demands of the industry for men with basic training along these lines, a carefully selected group of subjects is offered young men desiring to enter the wood products field. This major cur-

riculum may be elected following the two basic years and leads to the degree of Bachelor of Science in Wood Products.

Requirements for Graduation. For graduation the student is required to complete 204 term hours of collegiate work. Every student before graduation must have completed the requirement of 9 term hours in each of two groups in arts and sciences. A minimum of 70 professional hours is required by the School of Forestry. No student will be recommended for graduation who has not had at least six months of practical field work which is in line with his objective and which has been accepted as satisfactory by the faculty of the School of Forestry.

Advanced Degrees. The professional degree of Master of Science in Forestry, Logging Engineering, or Wood Products is offered to graduates of the College, or other colleges of equal rank, who have attained the degree of Bachelor of Science in the corresponding forestry curriculum, and met the College requirements for graduate study. These requirements specify one full year of resident work amounting to 48 hours, including an acceptable thesis.

Summer Employment. The principal operations of the lumber industry of the United States are in the Pacific Northwest. This fact creates conditions which make it easy for students who are physically fit to find employment in the logging camps and in sawmills. The United States Forest Service has adopted a definite policy of employing forestry students during vacation periods. Because of this policy students expecting to engage in forestry work are enabled to obtain valuable field experience at reasonable pay without incurring the costs incident to traveling long distances.

Equipment. The School of Forestry is housed in the Forestry Building, a thoroughly modern three-story structure 80 feet wide by 136 feet long. The building contains roomy laboratories for work in silviculture, dendrology, mensuration, forest protection, wood technology, drafting, lumber grading, and logging devices and equipment. These laboratories are well equipped with appropriate instruments and apparatus. Through the courtesy of the manufacturers of logging equipment much valuable logging machinery has been accumulated for demonstration purposes. Lumber manufacturing concerns have generously supplied the School with wood products made from various species of Oregon trees. All available publications dealing with general forestry, logging, or lumber manufacture are provided for the use of students.

Actual field work, so essential in preparing men for work in forestry and logging engineering, is made possible by the fact that large areas of timbered lands are easily accessible from the College. Some of the largest lumber manufacturing and pulp and paper plants in the Northwest are located within two or three hours' ride from Corvallis. Located as it is in the heart of the greatest timbered region of the United States, the School of Forestry possesses unique advantages for preparing men for service in professional forestry, logging engineering, and wood products.

A dry-kiln of commercial size, completely equipped for research in lumber seasoning, is available for use of students in wood products.

Lands. A State forest of 75,000 acres has, by law, been placed at the disposal of the School of Forestry for scientific management. This forest-

ed area lies within 75 miles of the College. An area of 160 acres of logged and second growth fir, presented to the School by the Spaulding Logging Company, lies within ten miles of the campus. Mrs. Mary J. L. McDonald of San Francisco gave the School 640 acres of timbered land for demonstration purposes. This land lies near Prospect in the Crater Lake region. Mrs. McDonald also made possible the acquisition of 2,100 acres of second growth Douglas fir. This tract lies within seven miles of the campus and is known as the McDonald Forest. It is devoted to experimental work in reforestation. The area also serves as a base for laboratory work for surveying, mapping, timber estimating, and logging railroad location. A tract of cut-over land, 115 acres in extent, is devoted to arboretum and experimental planting purposes. A forest nursery on the arboretum tract, financed by the United States Forest Service and the State Board of Forestry, is operated under the supervision of the School. A full-time nurseryman is required for this project.

Through the generosity of John W. Blodgett, a prominent timberman, a tract of 2,400 acres of cut-over land in Columbia county has been presented to the School of Forestry. This area is to be devoted to research work in reforestation.

Curricula in Forestry

Logging Engineering *Technical Forestry*
Wood Products

LOWER DIVISION CURRICULUM

Freshman Year	Term hours 1st	2d	3d
General Forestry (F 111)	4	—	—
Forest Protection (F 112)	—	4	—
Tree Identification (F 153)	—	—	4
General Botany (Bot 201, 202)	3	3	—
Forest Engineering (F 123)	—	—	4
Unified Mathematics (Mth 101, 102, 103)	4	4	4
English Composition (Eng 111, 112, 113)	3	3	3
Military Science	1	1	1
[1]Physical Education	1	1	1
	16	16	17

Sophomore Year			
Mensuration (F 221, 222, 223)	4	4	4
[2]Forest Engineering (F 224, 225, 226)	5	5	5
Engineering Physics (Ph 111, 112)	3	3	—
Logging Methods (LE 293)	—	—	3
[3]Outlines of Economics (Ec 212)	3	—	—
[3]Chemistry (PhS 102)	—	4	—
[3]National Government (PS 201)	—	—	4
Military Science	1	1	1
Advanced Physical Education (PE 251, 252, 253)	1	1	1
	17	18	18

[1]General Hygiene, 2 term hours, is taken one term in place of Physical Education.

[2]Students expecting to major in Wood Products may take approved courses in lieu of this subject.

[3]Students expecting to take advanced work in forestry or to major in forest entomology, forest pathology, or forest soils, should elect a year sequence in chemistry in lieu of Ec 211, PhS 102, and PS 201.

UPPER DIVISION CURRICULA

LOGGING ENGINEERING

B.S. Degree

Junior Year

	Term hours 1st	2d	3d
Bridge Design (LE 381)	3	—	—
Logging Equipment (LE 382)	—	3	—
Logging Machine Design (LE 386)	—	—	3
General Geology (G 201)	3	—	—
Silviculture (F 345)	—	3	—
Commercial Woods (F 334)	—	—	3
Business Law (BA 256, 257)	4	4	—
Principles of Accounting for Engineers (BA 385)	—	—	3
Accounting for Engineers and Foresters (BA 386)	—	3	—
Cost Accounting for Industrials (BA 494)	—	—	3
Timber Transportation (LE 374)	4	—	—
Electives	3	4	4
	17	17	16

Senior Year

Timber Transportation (LE 474, 475, 476)	4	4	4
Logging Plans (LE 471, 472, 473)	5	5	5
Forest Finance (F 411, 412)	4	4	—
Forest Economics (F 413)	—	—	4
Seminar (F 407)	1	1	1
Electives	3	3	3
	17	17	17

Recommended Electives

Lumber Seasoning (WP 494)	4	—	—
Production Control (WP 312)	—	—	4
Personnel Management (BA 414)	4	—	—
Labor Problems (Ec 405)	4	—	—
Transportation (Ec 435)	—	—	4
Differential and Integral Calculus (Mth 201, 202, 203)	4	4	4
Steam, Air, and Gas Power (ME 345)	—	3	—
Principles of Dietetics (FN 225)	2	—	—
Principles of Forest Entomology (Ent 321)	3	—	—

TECHNICAL FORESTRY

B.S. Degree

Junior Year

Identification of Woods (F 331)	4	—	—
Wood Utilization (F 332)	—	4	—
Dendrology (F 353)	—	—	4
Forest Pathology (Bot 305)	—	3	—
Forest Soils (Sls 214)	—	—	3
Geology (G 201)	3	—	—
Silviculture (F 341, 342, 343)	4	4	4
Principles of Forest Entomology (Ent 321)	3	—	—
Principles of Accounting for Engineers (BA 385)	—	—	3
Electives	3	6	3
	17	17	17

Senior Year

Forest Finance (F 411, 412)	4	4	—
Forest Economics (F 413)	—	—	4
Wood Properties, Seasoning, and Grading (WP 397)	—	4	—
Forest Regulation (F 416, 419)	—	2	3
Forest Administration (F 311, 312, 313)	3	3	3
Seminar (F 407)	1	1	1
Electives	9	3	5
	17	17	16

Recommended Electives	Term hours 1st	2d	3d
Modern Governments (PS 202)	---	4	---
Business Law (BA 256, 257, 258)	4	4	4
Range and Pasture Botany (Bot 304)	3	---	---
Principles of Plant Ecology (Bot 341)	---	4	---
Forest Entomology (Ent 323)	---	---	3
Principles of Zoology (Z 130)	---	---	3
Money and Banking (Ec 413)	---	---	4
Transportation (Ec 435)	---	---	4
American Literature (Eng 161)	3 *or*	3 *or*	3
Camp Cookery (FN 250)	---	---	1
Principles of Dietetics (FN 225)	2	---	---
Climatology (SIs 319)	---	---	2
Evolution and Eugenics (Z 315)	---	3	---
International Organization and World Politics (PS 407)	4	---	---
Landscape Architecture (LA 379)	---	---	3
International Organization and World Politics (PS 408)	---	4	---
International Trade (Ec 440)	4	---	---
General Sociology (Soc 211)	---	4	---
Business and Agricultural Statistics (BA 469)	3	---	---

WOOD PRODUCTS

B.S. Degree

Junior Year

Identification of Woods (F 331)	4	---	---
Wood Utilization (F 332)	---	4	---
Wood Grading (WP 333)	4	---	---
Principles of Accounting for Engineers (BA 385)	3	---	---
Accounting for Engineers and Foresters (BA 386)	---	3	---
Cost Accounting for Industrials (BA 494)	---	---	3
Business Law (BA 256, 257)	4	4	---
Transportation (Ec 435)	---	---	4
Money and Banking (Ec 413)	---	---	4
Timber Mechanics (F 335)	---	4	---
Extempore Speaking (Sp 111)	---	---	3
Electives	3	3	3
	18	18	17

Senior Year

Forest Finance (F 411, 412)	4	4	---
Forest Economics (F 413)	---	---	4
Lumber Seasoning (WP 494)	4	---	---
The Lumber Plant (WP 495)	---	4	---
Lumber Merchandising (WP 496)	---	---	4
Production Control (WP 312)	---	---	4
International Trade (Ec 440)	4	---	---
Seminar (F 407)	1	1	1
Electives	3	7	4
	16	16	17

Recommended Electives

General Advertising (SS 439)	---	---	3
Steam, Air, and Gas Power (ME 345)	---	3	---
Materials of Engineering (ME 316)	---	3	---
Fuel and Lubricant Testing (ME 425)	---	3	---
Differential and Integral Calculus (Mth 201, 202, 203)	4	4	4
Business English (Eng 217)	---	---	3
Merchandising and Selling (SS 436)	---	3	---
Personnel Management (BA 414)	4	---	---
Business and Agricultural Statistics (BA 469)	3	---	---

The following courses constituting a minor in Business Administration, are suggested for junior and senior students majoring in Wood Products whose chief interest is in the administrative side of the business.

Junior Year	Term hours 1st	2d	3d
Business Law (BA 256, 257)	4	4	---
Principles of Accounting for Engineers (BA 385)	3	---	---
Accounting for Engineers and Foresters (BA 386)	---	3	---
Cost Accounting for Industrials (BA 494)	---	---	3
Elements of Finance (BA 222)	---	4	---
Investments (BA 463)	---	---	3

Senior Year	Term hours 1st	2d	3d
Production Management (BA 413)	4	—	—
Money and Banking (Ec 413)	—	—	4
Special Problems for Engineers and Foresters (BA 403)	—	5	—
Business and Agricultural Statistics (BA 469)	3	—	—

Logging Engineering

COURSES in logging engineering are designed to prepare men to deal with the woods problems peculiar to the lumber industry of the Pacific Northwest. Emphasis is placed upon the preparation of logging plans and the transportation of timber from the woods to the mills.

DESCRIPTION OF COURSES

LOWER DIVISION COURSE

LE 293. **Logging Methods.** Third term, 3 hours.
Relation between logging and forest production; yarding, skidding, and loading logs; falling and bucking; relative merits of various methods; all known methods of handling timber from the standing tree to the mill. A non-technical course. Two lectures; 1 two-hour laboratory period.

UPPER DIVISION COURSES

LE 370. **Field Work.** One to 6 hours.
Practical field work on some modern logging operation, performed by the student between the sophomore and junior years or between the junior and senior years. A satisfactory report based on approved outline must be submitted.

LE 374. **Timber Transportation.** First term, 4 hours.
Survey of the problem; development of methods; small operations. Two lectures; 2 three-hour laboratory periods.

LE 381. **Bridge Design.** First term, 3 hours.
Principles of the design of wood structures as applied to logging railroad practice. Stresses in simple trusses; details, specifications, and estimates for Howe truss. One recitation; 2 two-hour laboratory periods.

LE 382. **Logging Equipment.** Second term, 3 hours.
Rigging; types of logging railroad locomotives, cars, and trucks; donkey engines, aerial equipment, skidders, loading and unloading devices; construction equipment, inclines, wire rope; fire prevention equipment; modern camp layouts. One lecture; 2 two-hour laboratory periods.

LE 386. **Logging Machine Design.** Third term, 3 hours.
Designing logging equipment, rigging, and tools; drawings of standard equipment constructed in camp shops. One lecture; 2 two-hour laboratory periods.

LE 471. **Logging Plans.** First term, 5 hours.
Control of area. Instrument control; surveying timbered area; preparation of topographic and relief maps; cruising. One recitation; 1 three-hour field period; 1 nine-hour field period.

LE 472. **Logging Plans.** Second term, 5 hours.
Preparation of plans. Complete set of working plans for the area from data obtained in LE 471; plans showing logging area limits, railroads, spurs, landings, machine settings, types of equipment to be employed, detailed cruise for each logging area; detailed costs per thousand covering the entire area. Prerequisite: LE 471. Three recitations; 2 two-hour laboratory periods.

LE 473. **Logging Plans.** Third term, 5 hours.
Management control. Organization, planning, standardization, employment, wage payment, purchasing, stores, tool storage and issuing, office management, plant layout, plant maintenance, production control. Prerequisite: LE 472. Three recitations; 2 two-hour laboratory periods.

LE 474. **Timber Transportation.** First term, 4 hours.
Chute and flume construction; pole roads; motor trucks; railroads adapted to logging operations. Two lectures; 2 three-hour laboratory periods.

LE 475. **Timber Transportation.** Second term, 4 hours.
Distinction between logging railroads and common carrier railroads; grades; alignment; economic theory of location and construction. Prerequisite: LE 474. One lecture; 1 nine-hour field period.

LE 476. **Timber Transportation.** Third term, 4 hours.
Structures and materials used in logging railroads, costs of surveys, construction, operation, and maintenance; bridge and tunnel construction. Prerequisite: LE 475. One lecture; 1 nine-hour field period.

GRADUATE COURSES

LE 501. **Graduate Research.** Terms and hours to be arranged.
Approved study and research for an advanced degree.

LE 503. **Graduate Thesis.** Terms and hours to be arranged.
The preparation of a thesis for an advanced degree.

LE 505. **Graduate Studies.** Terms and hours to be arranged.

LE 507. **Graduate Seminar.** Terms and hours to be arranged.

Technical Forestry

BASIC training needed for the practice of forestry, particularly in the Northwest, is afforded in the courses in technical forestry. The scientific methods involved in measuring, tending, and utilizing the forest crop are stressed.

DESCRIPTION OF COURSES

LOWER DIVISION COURSES

F 111. General Forestry. First term, 4 hours.
Forest regions of the United States; the forests of the world, their distribution and importance; preliminary survey of the whole field of forestry. Origin and distribution of our public domain; development of forestry in the United States; forestry as a timber production problem; forestry as a land problem; present status of forestry legislation. May be elected by students in other schools. Four lectures or recitations.

F 112. Forest Protection. Second term, 4 hours.
Fire suppression; fire preparedness; fire administration. Four lectures or recitations.

F 123. Forest Engineering. Third term, 4 hours.
Theory and use of forest surveying instruments. Measurement of distance, direction, and elevation. Three recitations; 1 three-hour laboratory period.

F 153. Tree Identification. Third term, 4 hours.
Field characteristics and classification of principal timber trees of the Pacific Coast, their commercial range, local occurrence, size, growth, form; climate, soil, and moisture requirements; resistance; relative tolerance and reproduction. Two lectures; 1 two-hour laboratory period; 1 three-hour field period.

F 221. Mensuration. First term, 4 hours.
Measurement of felled timber and its products. The cubic contents; scaling and grading logs; piece and cord measurements. Three recitations; 1 three-hour field or laboratory period.

F 222. Mensuration. Second term, 4 hours.
Measurement of standing timber. The volume of individual trees; timber cruising; timber appraisals. Three recitations; 1 three-hour field period.

F 223. Mensuration. Third term, 4 hours.
The growth of timber. The growth of even-aged stands; growth of many-aged stands; growth of individual trees. Two recitations; 2 three-hour field periods.

F 224. Forest Engineering. First term, 5 hours.
Elements of forest mapping. Public land surveys. Mapping of definite area by approved methods. Drafting of field data. Free-hand lettering. Three recitations; 1 two-hour laboratory period; 1 four-hour field period.

F 225. Forest Engineering. Second term, 5 hours.
Forest surveys. Theory and use of engineer's transit and level. Survey of definite areas. Direct and indirect leveling. Theory of photographic surveying. Computing and plotting of field data. Three recitations; 1 two-hour laboratory period; 1 four-hour field period.

F 226. **Forest Engineering.** Third term, 5 hours.
Forest Surveys and structures. Theory and application of triangulation. Solar and polar observations. Forest improvements, including roads, trails, shelters, bridges, and communication systems. Three recitations; 1 two-hour laboratory period; 1 four-hour field period.

UPPER DIVISION COURSES

F 311. **Forest Administration: Policy.** First term, 3 hours.
Development of land policies in the United States; state and Federal forest policies; private forestry. Three recitations.

F 312. **Forest Administration: Laws.** Second term, 3 hours.
A critical survey of state forest laws; the Federal laws dealing with forest lands and their administrative interpretation. Three lectures.

F 313. **Forest Administration: Control.** Third term, 3 hours.
Personnel work, and financial control on public and private forest property. Three lectures.

F 331. **Identification of Woods.** First term, 4 hours.
Study of wood structure; identification of important commercial woods; physical and structural properties. Two lectures; 2 two-hour laboratory periods.

F 332. **Wood Utilization.** Second term, 4 hours.
Adaptation to commercial uses; chief wood-using industries and relative amounts of principal commercial species used annually; adaptation of wood to special purposes; substitutes for wood; minor uses of wood; by-products. Three lectures; 1 two-hour laboratory period.

F 334. **Commercial Woods.** Third term, 3 hours.
Designed primarily to meet requirements of wood-workers and engineers. Identifying woods commonly used. Dendrology and its significance in wood technology. Seasoning, gluing, and preservation of woods. Two lectures; 1 two-hour laboratory period.

F 335. **Timber Mechanics.** Second term, 4 hours.
Mechanical properties of principal commercial timber; obtaining strength data; use of strength data. Two recitations; 2 two-hour laboratory periods.

F 341. **Silviculture: Silvics.** First term, 4 hours.
The life-history of trees; tolerance; soil requirements; climate; fire resistance; forest description; forest ecology and forest types. Two recitations; 1 four-hour laboratory period.

F 342. **Silviculture: Systems of Cutting.** Second term, 4 hours.
Marking trees for cutting; improvement of woodlands; protection as related to silviculture; natural and artificial regeneration. Two lectures or recitations; 1 four-hour laboratory period.

F 343. **Silviculture: Seeding and Planting.** Third term, 4 hours.
Collection and storage of forest tree seeds; nursery practice; field planting. Inspection of commercial and Forest Service nurseries. Two recitations; 1 four-hour laboratory period.

F 345. **Silviculture.** Second term, 3 hours.

Silvicultural practices requisite for insuring reproduction following logging; seed trees; selection cuttings; justifiable regeneration costs. For students in Logging Engineering. Three lectures or recitations.

F 353. **Dendrology.** Third term, 4 hours.

Classification and identification of forest trees, including study of forest ecology and taxonomy; silvical characteristics, and distribution of commercial species; life-history and requirements of trees. Two recitations; 2 two-hour laboratory periods.

F 370. **Field Work.** One to 6 hours.

Practical field work performed by the student between the sophomore and junior years or between the junior and senior years, in connection with some technical forestry work carried on by private interests, the State, or by the Forest Service. A report based on an approved outline must be submitted.

F 407. **Seminar.** Terms to be arranged, 1 hour each term.

Preparation and discussion of reports of special subjects; current forestry and lumbering literature; labor problems. Each student is required to prepare a thesis on some assigned subject. One two-hour conference period.

F 411, 412. **Forest Finance.** First and second terms; 4 hours each term.

Investments and costs in forest production; value of forestry property for destructive lumbering and for continued timber production; appraisal of damages due to the destruction of forest property; forest taxation; stumpage values; comparison of forest values with agricultural values; timber bonds; ultimate ownership of forest lands. Four lectures or recitations.

F 413. **Forest Economics.** Third term, 4 hours.

Survey of the forest resources of the world. Progress of forest removal in the United States. Forestry and land use. Forestry and community stability. The lumber industry and its problems. Forestry in the future economic life of the country. Four lectures or recitations.

F 416. **Forest Regulation.** Second term, 2 hours.

Forest organization and working plans. Ownership, classification, and uses of land; acquisition of forest lands; investigative projects to determine forestry principles and methods; administrative projects to determine location, areas and quantities; divisions of the forest; regulation of the forest; sustained yield; working plans; revision of working plans. Two recitations.

F 417, 418. **General Forestry.** First and second terms, 2 hours each term.

Survey of the field of technical forestry. Of special interest to those who plan to enter the Federal or State Forest Service. Two recitations.

F 419. **Forest Regulation.** Third term, 3 hours.

(A continuation of F 416.) Two recitations; 1 three-hour field period.

GRADUATE COURSES

F 501. **Graduate Research.** Terms and hours to be arranged.
Approved study and research for an advanced degree.

F 503. **Graduate Thesis.** Terms and hours to be arranged.
The preparation of a thesis for an advanced degree.

F 505. **Graduate Studies.** Terms and hours to be arranged.

F 507. **Graduate Seminar.** Terms and hours to be arranged.

Wood Products

COURSES in wood products are designed to meet the needs of men who desire to prepare themselves for service in the wood manufacturing industry. Especial attention is given to manufacturing conditions existing in the Pacific Northwest.

DESCRIPTION OF COURSES

UPPER DIVISION COURSES

WP 312. **Production Control.** Third term, 4 hours.
Discussion of production control systems as applied to sawmills; cost keeping versus bookkeeping; bonus, merit, profit-sharing. Three lectures; 1 two-hour laboratory period.

WP 333. **Wood Grading.** First term, 4 hours.
A study of basic grades and standard commercial grading rules. Two lectures; 2 two-hour laboratory periods.

WP 397. **Wood Properties, Seasoning, and Grading.** Second term, 4 hours.
An abbreviated course for students not majoring in wood products. Covers mechanical and physical properties of wood, principles of lumber seasoning, and lumber grading. Three lectures; 1 two-hour laboratory period.

WP 494. **Lumber Seasoning.** First term, 4 hours.
Air seasoning. Fundamental principles underlying seasoning and kiln-drying of woods; kiln-drying methods and their merits; effect of kiln-drying upon wood structure; types of kilns; study of recording instruments used. Field trips required. Prerequisite: F 331. Two lectures; 2 two-hour laboratory periods.

WP 495. **The Lumber Plant.** Second term, 4 hours.
Discussion of various types of modern mills; electrical versus steam mills; machinery and power of small and large plant; lumber-handling devices. Examination of up-to-date mills and reports on them. Three lectures; 1 two-hour laboratory period.

WP 496. **Lumber Merchandising.** Third term, 4 hours.
Lumber salesmanship; selling agencies; trade associations; standardization of sizes and grades; trade-marking; advantages of wood construction. Prerequisite: WP 495. Four lectures.

GRADUATE COURSES

WP 501. **Graduate Research.** Terms and hours to be arranged. Approved study and research for an advanced degree.

WP 503. **Graduate Thesis.** Terms and hours to be arranged. The preparation of a thesis for an advanced degree.

WP 505. **Graduate Studies.** Terms and hours to be arranged.

WP 507. **Graduate Seminar.** Terms and hours to be arranged.

School of Home Economics

Faculty

AVA BERTHA MILAM, M.A., Dean of the School of Home Economics.

ELIZABETH MAY FLETCHER, B.S., Secretary.

Clothing, Textiles, and Related Arts

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

MILDRED CHAMBERLAIN, Ph.B., Associate Professor of Clothing, Textiles, and Related Arts.

AZALEA LINFIELD SAGER, M.A., Associate Professor of Clothing, Textiles, and Related Arts; Extension Specialist in Clothing.

GERTRUDE STRICKLAND, Instructor in Clothing, Textiles, and Related Arts.

MARGARET LOUISE BREW, Ph.B., Instructor in Clothing, Textiles, and Related Arts.

Foods and Nutrition

JESSAMINE CHAPMAN WILLIAMS, M.A., Professor of Foods and Nutrition; Head of Department.

AGNES KOLSHORN, M.A., Assistant Professor of Foods and Nutrition.

LUCY ADA CASE, M.A., Assistant Professor of Foods and Nutrition; Extension Specialist in Nutrition.

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

LILLIAN CATHERINE TAYLOR, M.A., Instructor in Foods and Nutrition.

Home Economics Education

FLORENCE BLAZIER, Ph.D., Professor of Home Economics Education; Head of Department.

FRANCES WRIGHT JONASSON, B.S., State Supervisor and Teacher Trainer in Vocational Home Economics.

MERLE BONNEY DAVIS, B.S., Critic Teacher in Home Economics Education.

RUTH MORRIS FOREST, B.S., Critic Teacher in Home Economics Education.

Home Economics Extension

CLARIBEL NYE, M.A., Professor and State Leader of Home Economics Extension.

AZALEA LINFIELD SAGER, M.A., Associate Professor of Clothing, Textiles, and Related Arts; Extension Specialist in Clothing.

LUCY ADA CASE, M.A., Assistant Professor of Foods and Nutrition; Extension Specialist in Nutrition.

ZELTA FEIKE RODENWOLD, M.S., Assistant Professor of Home Economics Extension; Director of Home Economics Radio Programs.

GERTRUDE LONETTE SKOW, B.S., Home Demonstration Agent-at-Large.

Home Economics Research

MAUD MATHES WILSON, A.M., Professor in Charge of Home Economics Research.

DOROTHY SMITH SCHREINER, M.S., Assistant in Home Economics Research.

Household Administration

SARA WATT PRENTISS, M.A., Professor of Child Development and Parent Education; Acting Head of Department.

LUCILE WINIFRED REYNOLDS, M.A., Associate Professor of Household Administration.

VERA HASKELL BRANDON, M.S., Assistant Professor of Household Administration.

ELEANOR MAY SPIKE, M.S., Instructor in Household Administration.

Institution Economics

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

GEORGIA CHAPMAN BIBEE, B.S., Assistant Professor of Institution Economics; Supervisor of Memorial Union Dining Service.

General Statement

ALL problems of the home and family life fall within the field of home economics. The School of Home Economics seeks to serve, directly or indirectly, every Oregon home. Through resident teaching the School makes its direct contribution to the life of the commonwealth. Students are trained for the responsibilities of homemaking and parenthood, for education, administration and management, and for other work in home economics and allied fields. Through research and extension, closely coordinated with the resident teaching, effort is constantly directed toward the solution, not only of home problems generally but of Oregon home problems in particular.

Training in homemaking, important in the education of every young woman is fundamental in all the work of the School of Home Economics. A distinct curriculum, Curriculum A, provides especially for those whose main object in attending college is preparation for home life. Courses in English, art, history, modern languages, science, and the other departments of general training, supplement the technical courses in this curriculum, which aims to provide a liberal as well as a technical education. The true homemaker not only must be trained in the science, the art, and the economics of the household, but also must have a well-rounded personality, with intelligent interests, trained judgment, and cultivated tastes, enabling her to solve successfully the problems of the changing modern home, with its complex social and civic relationships. Similar in objective to Curriculum A, Curriculum C is planned for students who wish to enter the School of Home Economics at the beginning of the junior year following two years of general junior college work. The two curricula differ in the fact that in one, general and home economics studies are taken on a parallel basis throughout the four years, while in the other the student's four-year program is divided into two distinct parts, the first two years being devoted to general studies and the last two years largely to home economics.

In Curriculum B, which prepares for the more technical pursuits, the work is largely prescribed for the first two years. In the junior and senior years the student may specialize in some particular field, as in the teaching of home economics, home economics extension, hospital dietetics, institutional management, or commercial fields. Each of these in turn offers a variety of possibilities. Teaching positions include home economics in secondary schools, colleges, universities or other institutions of higher learning, and in the field of club work and adult extension from state colleges.

By action of the State Board of Higher Education March 7, 1932, all major work in the Oregon State System of Higher Education leading to baccalaureate and advanced degrees in Home Economics was confined to the School of Home Economics at the State College and lower division work comprising instruction in freshman and sophomore years was assigned to both the State College and the University.

Lower Division and Service Work. The lower division work in Home Economics at the University constitutes essentially the equivalent of lower division work at the State College and students finding it more convenient to spend their freshman and sophomore years at Eugene may transfer to Corvallis for their major work without loss of time in completing the requirements for a degree in home economics. Students wishing to complete at Eugene the first two years of Curriculum B should have their programs carefully planned by the head of the Home Economics department at the University.

The Lower Division program at both institutions, besides laying a broad foundation for specialization, is intended also to serve the needs of students majoring in other fields. In addition, upper division service courses prescribed as required subjects or available as electives for students registered in other fields are given as needed at the University. Complete course offerings in Home Economics at the University are listed on page 294.

For homemakers, special students, and students registered in other schools on the campus, the School offers service and special courses. See description of courses.

A minor in Home Economics for students in certain other schools is outlined under the respective schools.

Major Curricula. Four-year curricula leading to the bachelor's degree are offered in the School of Home Economics as follows:

CURRICULUM A, a general curriculum combining a general cultural education with training in the principles of homemaking. Students wishing to teach home economics, do commercial work in the clothing field, or enter home economics journalism, may register in this curriculum.

CURRICULUM B, a professional curriculum including technical subjects and the basic arts and sciences, together with languages, history, economics, and sociology, preparing for homemaking and for home economics teaching, institutional management, extension work, and commercial fields, especially in foods. In the first two years the work is prescribed, giving the necessary foundation for any of the professional fields. In the last two years opportunity for a limited

degree of specialization is afforded. Completion of this curriculum meets the requirements of the Federal Board for Vocational Education for the Smith-Hughes teacher.

A two-year upper division curriculum leading to the bachelor's degree is offered in the School of Home Economics as follows:

CURRICULUM C, a general curriculum in home economics extending through the junior and senior years, based on a general cultural curriculum completed in lower division or junior college. Students must complete during the junior and senior years enough courses in Home Economics to meet the institutional requirements for a major in Home Economics.

Requirements for Graduation. For the bachelor's degree in Home Economics a minimum of 192 term hours must be completed. The work should be distributed as suggested by the following curricula. At least 45 term hours in upper division courses are required. Transfers from other institutions are required to complete at least 18 term hours in Home Economics at this institution.

Students completing the four-year curricula receive either the B.A. or the B.S. degree in accordance with the institutional requirements for the respective degrees. For the B.A. degree, 36 term hours in Arts and Letters must be completed, including requirements in a foreign language, preferably French or German.

Graduate Work. All departments of the School of Home Economics offer graduate work leading to the master's degree (M.A., M.S.). For the requirements for graduate work and advanced degrees see the announcements of the Graduate Division.

Facilities. Modern facilities for carrying on all phases of home economics work are provided in the Home Economics Building, the Home Management Houses, the Nursery School, and the Memorial Union dining-room facilities.

The foods and Nutrition department has seven laboratories, including one dietetic laboratory, animal laboratory, and facilities for instruction in family cookery and table service.

The department of Clothing and Related Arts has seven laboratories provided with modern equipment including textile and applied design laboratories.

In addition to the recitation rooms and equipment laboratories located in the home Economics Building, the Household Administration department operates two Home Management Houses, Kent and Withycombe, and the Nursery School, housed in Covell House. These three houses are located on the campus.

The Institution Economics department is unusually well provided with space and equipment. The Memorial Union dining-room facilities afford opportunity for training in different types of food service including table d'hote, tea room, banquet and catering service. The central kitchen and cold storage rooms are equipped with modern labor-saving and power equipment. The halls of residence both for men and for women are available for study of housing problems.

The supervised teaching is carried on in the public schools of Corvallis, the plant and equipment of the high schools being used by the student-teacher group.

The Home Economics Extension department, through which the School of Home Economics maintains direct relationship with the homemakers and the 4-H Club girls of the state, provides guidance to undergraduate and graduate students who wish to specialize in this field. The department supervises apprenticeship training in counties located near the College.

Curricula in Home Economics

B.A., B.S. Degrees

Curriculum A

Not more than one-third of the 192 term hours required for a degree in this curriculum may be in Home Economics.

	Term hours 1st	2d	3d
Freshman Year			
Color and Composition (AA 160, 161)	3	3	—
Landscape Architecture (LA 279)	—	—	3
Group requirement in Social Science group	3	3	3
[1]Group requirement in Science group	3	3	3
English Composition (Eng 111, 112, 113)	3	3	3
Social Ethics (PE 131)	—	—	—
Appreciation of Music (Mus 120)	—	1	—
Introduction to Home Economics (HAd 101)	3 *or*	(3)	—
[2]Physical Education	1	1	1
[3]Elective	—	3	3
	16	17	16
Sophomore Year			
Group requirement in Language and Literature group (Literature)	3	3	3
Outlines of Economics (Ec 211)	—	4	—
Foods (FN 211, 212, 213)	3	3	3
Textiles (CT 250)	3	—	—
[3]Clothing (CT 211, 212)	—	3	3
Principles of Dietetics (FN 225)	2	—	—
Advanced Physical Education (PE 214, 215, 216)	1	1	1
Electives	3	3	6
	15	17	16
Junior Year			
Household Management (HAd 340)	4	—	—
Outlines of Psychology (Psy 211)	4	—	—
Food Purchasing (FN 411)	(3)	— *or*	3
General Sociology (Soc 211)	—	4	—
Political Science	—	—	3
House Furnishing (CT 331)	3	—	—
Electives	5	12	9
	16	16	15
Senior Year			
Electives in Home Economics (upper division)	7	—	—
Child Development (HAd 411, 412)	3	3	—
Home Management House (HAd 350)	—	—	4
Electives	6	13	12
	16	16	16

[1]May be deferred to sophomore year.
[2]General Hygiene, 2 term hours, is taken one term in place of Physical Education.
[3]Students having had no previous Clothing courses are required to take CT 111 as an elective in their freshman year as a prerequisite to CT 211.

Curriculum B

Freshman Year	Term hours 1st	2d	3d
Color and Composition (AA 160, 161)	3	3	—
Landscape Architecture (LA 279)	—	—	3
Group requirement in Social Science group	3	3	3
[1]Elementary General Chemistry (Ch 201, 202, 203)	3	3	3
English Composition (Eng 111, 112, 113)	3	3	3
Social Ethics (PE 131)	—	—	—
Appreciation of Music (Mus 120)	—	1	—
Introduction to Home Economics (HAd 101)	3	*or* (3)	—
[2]Physical Education	1	1	1
Elective	—	—	3
	16	14	16

Sophomore Year			
Group requirement in Language and Literature group (Literature)	3	3	3
Organic Chemistry (Ch 221), Elementary Biochemistry (Ch 251)	5	5	—
Elementary Human Physiology (Z 211)	—	—	5
[3]Textiles (CT 250), Clothing (CT 211, 212, *or* Clothing Selection (CT 217), Clothing Selection and Construction (CT 218, 219)	3	3	3
Foods (Preparation, Marketing, Planning) (FN 220, 221, 222)	3	3	3
Advanced Physical Education (PE 214, 215, 216)	1	1	1
	15	15	15

Junior Year			
[4]Related Art	—	—	3
Costume Design (CT 311)	3	—	—
Household Management (HAd 340)	—	4	—
General Bacteriology (Bac 204, 205)	3	3	—
Outlines of Psychology (Psy 211)	4	—	—
Outlines of Economics (Ec 211)	—	4	—
Extempore Speaking (Sp 111) or Elementary Journalism (J 111)	3	—	—
Nutrition (FN 320, 321)	—	3	3
Electives	4	3	10
	17	17	16

Senior Year			
[5]Child Development (HAd 320)	3	—	—
Home Management House (HAd 350)	—	4	—
General Sociology (Soc 211)	—	—	4
House Furnishing (CT 331)	—	—	3
Political Science	—	—	4
Electives	13	12	5
	16	16	16

Curriculum C

Not more than one-third of the 192 term hours required for a degree in this curriculum may be in Home Economics. A minimum of 41 term hours in Home Economics is required. Of the required 41 term hours 32 to 34 are prescribed and the remaining 7 to 9 elective term hours are to be chosen from the options listed.

Freshman and Sophomore Years

During the freshman and sophomore years the student must have taken an approved program in arts and sciences leading to the Junior Certificate or equivalent. Courses in home economics need not have been taken but students who find it possible to take a year (9 term hours) of foods or of clothing and textiles, or both, will be enabled to elect a wider range of advanced courses in home economics during their junior and senior years.

---

[1]May be deferred to sophomore year.

[2]General Hygiene, 2 term hours, is taken one term in place of Physical Education.

[3]Students having had no previous Clothing courses are required to take CT 111 as an elective in their freshman year as a prerequisite to CT 211.

[4]Choice of CT 335; AA 100, 101.

[5]Or HAd 411, 412.

Junior Year	Term hours 1st	2d	3d
Principles of Dietetics (FN 225)	2	—	—
Foods (FN 211, 212, 213) *or* (FN 220, 221, 222)	3	3	3
[1]Textiles (CT 250), Clothing (CT 211, 212) *or* Clothing Selection (CT 217), Clothing Selection and Construction (CT 218, 219)	3	3	3
House Furnishing (CT 331 *or* CT 231)	(3)	*or* 3	*or* (3)
Electives	8	7	10
	16	16	16

Senior Year			
Home Economics courses to be chosen from the options listed below	3	—	4
Household Management (HAd 340)	4	—	—
Child Development (HAd 411, 412)	3	3	—
Home Management House (HAd 350)	—	—	4
Electives	6	13	8
	16	16	16

Senior Options

From the following options 16 term hours must be chosen in order to complete the minimum of 41 required term hours in home economics.

	Term hours
Nutrition (FN 320, 321)	6
Food Purchasing (FN 411)	3
Diet in Disease (FN 420)	3
Experimental Cookery (FN 435)	3
Readings in Nutrition (FN 481)	3
Behavior Problems (HAd 421)	2
Nursery School (HAd 425)	3
Costume Design (CT 311)	3
Clothing (CT 312)	3
Applied Design (CT 335)	3
Dress Design (CT 411)	3
Commercial Clothing (CT 412)	3

Suggested Elective Combinations

Home economics students wishing to prepare for certain earning phases of home economics may elect any of the following groups of courses.

COMMERCIAL WORK IN CLOTHING AND RELATED ARTS

For students interested in commercial work in the fields of clothing, textiles, and related arts the following courses are suggested.

	Term hours
French	21
Commercial Art Design	3
Three terms of Lower Division Painting (AA 290)	9
Extempore Speaking (Sp 111)	3
Elementary Journalism (J 111)	3
Chemical Microscopy (Ch 425)	3
Dress Design (CT 411)	3
Commercial Clothing (CT 412)	3
House Furnishing (CT 431)	3
Applied Design (CT 435)	3

HOME ECONOMICS TEACHING

For students preparing to teach home economics the following sequence is suggested. Additional electives should be taken to make a total of 23 term hours. Twenty-three credits in Education are required for a teaching certificate but are not required for graduation in Home Economics.

Junior Year	Term hours 1st	2d	3d
Educational Psychology (Ed 312)	3	—	—
Secondary Education (Ed 311)	3	—	—
Principles of Teaching (Ed 313)	—	3	—
Special Methods in Home Economics (Ed 331)	—	3	*or* 3

Senior Year			
The Curriculum in Home Economics (HEd 411)	3	*or* 3	*or* 3
Supervised Teaching (Ed 315) (hours to be arranged)	—	—	—

[1]Students having had no previous Clothing courses are required to take CT 111 as a prerequisite to CT 211.

INSTITUTION ECONOMICS AND DIETETICS

For students in Curriculum B preparing for positions as dietitians in hospitals, dormitories, cafeterias, hotels, and tea rooms, the following courses are required.

	Term hours		
	1st	2d	3d
Constructive Accounting (BA 111, 112)	4	4	---
Educational Psychology (Ed 312)	3	---	---
Principles of Teaching (Ed 313)	---	3	---
Quantity Cookery and Catering (IEc 311)	3	---	---
Elementary Physiological Chemistry (Ch 330, 331)	---	2	3
Diet in Disease (FN 420)	---	---	3
Institutional Organization and Administration (IEc 430)	2	---	---
Institutional Equipment (IEc 420)	---	3	---
Institutional Marketing (IEc 440)	---	---	2
Institution Experience (IEc 450)	---	---	4

HOME ECONOMICS EXTENSION

For students in Curriculum B preparing for positions in the field of home economics extension the following courses are suggested.

	Term hours		
Junior Year	1st	2d	3d
Educational Psychology (Ed 312)	---	3	---
Problems of the Consumer-Buyer (HAd 442)	---	3	---
Applied Design (CT 335)	---	---	3
Principles of Teaching (Ed 313)	---	---	3
Elementary Journalism (J 111)	3	---	---
Public Information Method (J 313)	---	3	---
Senior Year			
Extempore Speaking (Sp 111)	3	---	---
Family Relationships (HAd 422)	2	---	---
Methods in Home Economics Extension	2	---	2
Food Purchasing (FN 411)	3	---	*or* 3

SUGGESTED MINORS

Suggested outlines of minors in various fields, such as arts and sciences, physical education, journalism, speech and dramatics, languages, business administration and secretarial science, are supplied to students on request.

Clothing, Textiles, and Related Arts

OFFICES, classrooms, and laboratories of the Department of Clothing, Textiles, and Related Arts are located in the Home Economics Building. All necessary furnishings and equipment are available for thorough instruction in textiles, clothing, tailoring, costume design, house decoration, and applied design.

DESCRIPTION OF COURSES

REQUIRED

Curriculum A: CT 211, 212, 250, 331.
Curriculum B: CT 211, 212, 250, 311, 331.
Curriculum C: CT 211, 212, 250, 331 or 231.

ELECTIVE

Curriculum A: CT 311, 312, 335, 431.
Curriculum B: CT 411, 412, 431, 435.
Curriculum C: CT 311, 312, 335, 411, 412, 431, 435.
For students in Business Administration, Education, Pharmacy, etc.: CT 217, 218, 219, 231.

Students planning to register for clothing courses CT 111, 211, 212, 312 should keep in mind, when planning their wardrobes for the college year, that these courses require a certain amount of clothing construction. Students in Clothing and Textiles courses who do not wish to make garments for themselves may be furnished material through orders given the department.

LOWER DIVISION COURSES

CT 111. **Elementary Clothing and Textiles.** First or third term, 3 hours.
Fundamental processes of hand and machine sewing; design and construction of simple garments and household articles. Required of all Home Economics students who have not had sufficient high school work in clothing, or its equivalent in shop or home experience, to enter CT 211. Six periods laboratory work.

CT 211. **Clothing.** First or second term, 3 hours.
Selection and construction; the selection is from the artistic standpoint; in construction, the emphasis is placed upon the use of sewing equipment, fitting, and the use of commercial patterns. Prerequisite: two terms of Lower Division Drawing. Two lectures; 2 two-hour laboratory periods.

CT 212. **Clothing.** Second or third term, 3 hours.
Application of design to dressmaking with emphasis on technique of construction. Making of different types of garments in various materials. A study of wardrobe needs and of clothing costs. Prerequisite: CT 211. One recitation; 2 two-hour laboratory periods.

CT 217. **Clothing Selection.** First or second term, 3 hours.
A brief lecture course intended to develop good taste in dress and to train the judgment of young women in selecting simple, conservative, artistic, becoming, and appropriate clothes for themselves and others. For Home Economics students not electing art and students in other schools. Three lectures.

CT 218, 219. **Clothing Selection and Construction.** Second and third terms, 3 hours each term.
Principles of selection and construction applied in the planning and making of garments. Elective for other than Home Economics students wishing to cover briefly the field of dress selection and construction. Prerequisite: CT 217. Three two-hour laboratory periods.

CT 231. **House Furnishing.** First or third term, 3 hours.
Brief course seeking to develop appreciation of beauty and suitability in home furnishings and some knowledge of the materials and processes involved. Elective for students other than Home Economics. Two recitations; 1 two-hour laboratory period.

CT 250. **Textiles.** First or second term, 3 hours.
Study of standard fabrics from the standpoint of the consumer with the aim of developing good judgment in the buying and use of clothing and house-furnishing materials. Properties and uses of different textile fibers and fabrics studied. Two lectures; 1 two-hour laboratory period.

UPPER DIVISION COURSES

CT 311. **Costume Design.** Any term, 3 hours.
Principles of art applied in the selection and designing of appropriate costumes. Brief study of historic costume and its relation to modern dress. Prerequisite: CT 250, 212; two terms of Lower Division Drawing. Three two-hour laboratory periods.

CT 312. **Clothing.** Any term, 3 hours.

(Advanced course.) This course aims to develop more independence, initiative, originality, and art in selecting, planning, designing, and constructing garments for different types of figures. Skill in handling difficult materials is an object. Prerequisite: CT 250, 311. One lecture; 2 two-hour laboratory periods.

CT 331. **House Furnishing.** Any term, 3 hours.

A study of the points to be considered in selecting and furnishing a small home from the standpoint of comfort, beauty, and economy. Prerequisite: Two terms of Lower Division Drawing; CT 250. Two recitations; 1 two-hour laboratory period.

CT 335. **Applied Design.** Any term, 3 hours.

Decorative art involving careful consideration of line, form, proportion, and color; designs adapted and executed in various media for clothing and house-furnishing problems; tie-dying, batik, and stencil decoration for textiles, embroidery, weaving, block-printing. Prerequisite: two terms of Lower Division Drawing; CT 212, 250. Three two-hour laboratory periods.

CT 401. **Research.** Terms and hours to be arranged.

CT 403. **Thesis.** Terms and hours to be arranged.

CT 405. **Reading and Conference.** Terms and hours to be arranged.

CT 407. **Seminar.** Terms and hours to be arranged.

CT 411. **Dress Design.** Third term, 3 hours.

Designing, modeling, and constructing of afternoon and evening dresses; study of development of historical costume and its relation to modern fashions with aim of giving practical help and inspiration to students and teachers of dressmaking and costume design. Offered in alternate years, alternating with CT 412. Prerequisite: CT 311, 312, 335. One lecture; 2 two-hour laboratory periods.

CT 412. **Commercial Clothing.** Third term, 3 hours.

(For students who wish to enter commercial or specialty shop work.) Training in selecting, designing, fitting, and constructing garments for different types of figures; organization of work from trade standpoint; emphasis on speed, economy, effectiveness, selling features, etc. Prerequisite: CT, 311, 312, 335. One lecture; 2 two-hour laboratory periods. Offered alternate years, alternating with CT 411.

CT 431. **House Furnishing.** Third term, 3 hours.

(Advanced course.) A study of historic periods of decoration with emphasis on their backgrounds; furniture and decorative textiles and their practical application to the home. Prerequisite: CT 331, 335. Two lectures; 1 two-hour laboratory period. Offered in alternate years, alternating with CT 435.

CT 435. **Applied Design.** Any term, 3 hours.

For students desiring more advanced work in applied design. Readings and reports. Prerequisite: CT 335, 341. One lecture; 2 two-hour laboratory periods. Offered in alternate years, alternating with CT 431.

GRADUATE COURSES

CT 501. Graduate Study and Research. Any term, hours to be arranged.
Special problems in the Clothing, Textiles, and Related Arts fields for which the student is suited by previous training and ability. Assignment of problems by professor in charge.

CT 503. Graduate Thesis. Any term, 6 to 12 hours.
Original problems chosen by the student or suggested by the department are studied and reported upon in thesis form.

CT 505. Reading and Conference. Terms and hours to be arranged.

CT 507. Seminar. Terms and hours to be arranged.

Foods and Nutrition

SEVEN laboratories with modern equipment for foods instruction accommodating twenty students each are provided. Two dining rooms are used in meal service in the department and for occasions by the School. A laboratory for animal experimentation and one for basal metabolism are provided for advanced work in nutrition.

DESCRIPTION OF COURSES

REQUIRED

Curriculum A: FN 211, 212, 213, 225, 411.
Curriculum B: FN 220, 221, 222, 320, 321.
Curriculum C: FN 211, 212, 213, 225 or 220, 221, 222, 225.

ELECTIVE

Curriculum B: FN 411, 420, 421, 422, 423, 435, 481.
Curriculum C: FN 320, 321, 411, 420, 421, 422, 423, 435, 481.
For students in Business Administration, Education, Pharmacy, etc.: FN 211, 212, 213, 225, 250. If FN 211, 212, 213 or FN 220, 221, 222 are elected the full three terms must be completed.

LOWER DIVISION COURSES

FN 211, 212, 213.* Foods. Three terms, 3 hours each term.
An introduction to subject of foods; selection, preparation, and service. For students not electing chemistry. Prerequisite or parallel: one year of a laboratory science. Required in Curricula A and C. Two recitations; 2 two-hour laboratory periods.

FN 218. Food Selection and Preparation. Any term, 3 hours.
A unit course for students who desire to study food selection and preparation by meal service. Elective for students other than Home Economics. One recitation; 2 three-hour laboratory periods.

FN 220, 221, 222.* Foods. Three terms, 3 hours each term.
Study of foods in their scientific and economic aspects; selection, preparation, and service. Prerequisite: Ch 201, 202, 203. Required in Curriculum B. Two recitations; 2 two-hour laboratory periods.

*Home practice in food preparation is required of students who have completed FN 213 and FN 222, the character and amount of practice being arranged with the instructors in charge.

FN 225. **Principles of Dietetics.** Any term, 2 hours.
Nutritive value of foods from the standpoint of newer scientific investigations, and the selection of an optimum diet for health. Present-day problems in nutrition and recent trends in American dietary habits. Required in Curricula A and C; open to both men and women in other schools. Two lectures.

FN 250. **Camp Cookery.** Third term, 1 hour.
Preparation of palatable and nutritious products from foods available in camps, outdoor food preparation involving the use of Dutch ovens, reflectors, and improvised camping utensils. One lecture; 1 two-hour laboratory period.

UPPER DIVISION COURSES

FN 320. **Nutrition.** First or second term, 3 hours.
A scientific study of nutrition in relation to health; digestive and metabolic processes and products; methods of investigation which have established the quantitative basis in dietetics and the standards which have been adopted. Prerequisite: FN 222, Ch 251. Two recitations; 1 two-hour laboratory period.

FN 321. **Nutrition.** Second or third term, 3 hours.
A continuation of FN 320, and the application of these scientific principles in the nutrition of the individual and family group. Projects in animal experimentation and preschool child feeding. Prerequisite: FN 320, Z 211. Two recitations; 1 two-hour laboratory period.

FN 401. **Research.** Terms and hours to be arranged.

FN 403. **Thesis.** Terms and hours to be arranged.

FN 405. **Reading and Conference.** Terms and hours to be arranged.

FN 407. **Seminar.** Terms and hours to be arranged.

FN 411. **Food Purchasing.** First or third term, 3 hours.
Household marketing; study of grades, brands, and qualities of food products as found on the market; factors governing cost; food laws; the ethics of food buying and selling. Prerequisite: FN 213 or 222. Two lectures; 2 two-hour laboratory periods.

FN 420. **Diet in Disease.** Third term, 3 hours.
A study of diets for abnormal conditions. A preliminary course for students who wish to become hospital dietitians or nutrition specialists. Prerequisite: FN 321, Z 211; Ch 330 prerequisite or parallel. Three lectures.

FN 421. **Nutrition of the Infant and Child.** One term, 3 hours.
Study of the food needs of infants and children including study of prenatal dietary requirements. Prerequisite: FN 321.

FN 422. **Basal Metabolism.** One term, 3 hours.
A study of the measurement of energy metabolism in the human body with practice in the use of the respiration apparatus. Prerequisite: FN 321.

FN 423. **Animal Experimentation.** Any term, 3 hours.
A study of the quantitative methods used in nutrition research in which the white rat and guinea pig are used. Prerequisite: FN 321.

FN 425. **Experimental Cookery.** Second term, 3 hours.
Development of experimental methods and their application to investigations in cookery and the skills involved. Acquaintance with the literature in this field. Preparation of the student for independent research in Foods. Prerequisite: Ch 251, FN 222.

FN 481. **Readings in Nutrition.** One term, 3 hours.
Acquaints the student with research in nutrition as reported in scientific journals. A broad background of science is required to interpret recent advances in the chemistry of food and metabolism. Prerequisite: FN 321.

GRADUATE COURSES

FN 501. **Graduate Study and Research.** Any term, hours to be arranged.
Research problems for which the student is suited by previous training and ability. Assignment of problems by the professor in charge.

FN 503. **Graduate Thesis.** Terms and hours to be arranged.
Original problems chosen by the student or suggested by the department are studied and reported upon in thesis form.

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

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

Home Economics Education

PROFESSIONAL training for prospective teachers of home economics is afforded by the department of Home Economics Education. Any student having a scholarship record below average should confer with the Dean of the School of Home Economics before registering for teacher training work.

This department is a joint department within both the School of Home Economics and the School of Education.

DESCRIPTION OF COURSES

UPPER DIVISION COURSES

Ed 331. **Special Methods in Home Economics.** First term, 3 hours.
An introduction to the field of home economics education. Study of Smith-Hughes problems in home economics. Principles of teaching applied to home economics instruction. Prerequisite or parallel: Ed 313. Three recitations. Professor Blazier.

Ed 332. **Methods of Teaching Related Art.** First term, 3 hours.
Selection and organization of subject-matter in art in its application to vocational courses authorized under the Smith-Hughes act; special methods in teaching related art. Prerequisite or parallel: Ed 313. Three recitations. Professor Blazier.

HEd 401. **Research.** Terms and hours to be arranged.

HEd 403. **Thesis.** Terms and hours to be arranged.

HEd 405. **Reading and Conference.** Terms and hours to be arranged.

HEd 407. **Seminar.** Terms and hours to be arranged.

HEd 411. **The Curriculum in Home Economics.** Any term, 3 hours.
A study of the basic principles of curriculum construction applied to the organization of home economics courses in secondary schools. Prerequisite: Ed 331. Three recitations. Professor Blazier.

HEd 413. **The Supervision of Home Projects.** Third term, 2 hours.
A study of the use of home projects in home economics instruction with field work in supervision of home projects. Prerequisite: HEd 411. One recitation; 1 two-hour laboratory period. Professor Blazier.

HEd 415. **Adult Education in Home Economics.** Second term, hours to be arranged.
Study of problems in the adult education program authorized under the Smith-Hughes Act. Field work in promoting, organizing, observing, and teaching adult classes. Prerequisite: HEd 411. Professor Blazier.

GRADUATE COURSES

Ed 501. **Educational Research.** Terms and hours to be arranged.
Problems in home economics education. Professor Blazier.

Ed 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.

Home Economics Extension

HOME Economics Extension is a department of the School of Home Economics as well as a division of the Federal Cooperative Extension Service. In it centers all non-resident teaching in home economics, both junior and senior, for which the School is responsible. Through this department the School cooperates with the Extension Service of the College and the United States Department of Agriculture, Washington, D.C., in the development and supervision of the county home demonstration program. Through this department also the School aims to serve the homemakers of the state by communications on problems that home economics subject-matter can solve, by correspondence courses, and by the preparation and distribution of bulletins and club programs.

For special courses in Home Economics Extension see the announcements for the Summer Session.

Home Economics Research

HOME economics research is concerned with all problems of the modern home. The program of research in foods and nutrition affords opportunity for investigation in animal experimentation, basal metabolism, child nutrition, dietotherapy, experimental work in foods,

food purchasing, and other problems in this field. The facilities for such research include an animal laboratory, respiration apparatus, food laboratories, and the nursery school for problems in preschool child nutrition.

Federal funds available for home economics research through the Agricultural Experiment Station are sufficient for the employment of a full-time research worker. Projects chosen for Federal cooperation have been in the field of household administration. A study of housing arrangements from the standpoint of efficiency in household management is now in progress.

Instruction in the field of home economics research, offered in the summer session, provides training in methods of research and aids in placing the findings of research at the immediate disposal of advanced students in the field.

Household Administration

UNDER this department instruction is offered in household administration, child development, and parent education. Offices, classrooms, and equipment laboratory are located in the Home Economics Building. Two well-equipped and self-supporting Home Management houses and a Nursery School are located on the campus.

DESCRIPTION OF COURSES

REQUIRED

Curriculum A: HAd 101, 340, 350, 411, 412.
Curriculum B: HAd 101, 320, 340, 350.
Curriculum C: HAd 101, 340, 350, 411, 412.

ELECTIVE

Curriculum A: HAd 330, 401, 407, 422, 423, 425, 441, 442, 443.
Curriculum B: HAd 330, 401, 403, 407.
Curriculum C: HAd 330, 401, 407, 422, 423, 425, 441, 442, 443.
For students in Business Administration, Secretarial Science, Education, Pharmacy, etc.: HAd 225, HAd 101, and any other course for which prerequisites have been taken.

LOWER DIVISION COURSES

HAd 101. **Introduction to Home Economics.** First or second term, 3 hours.
Designed to orient beginning students in the field of home economics and to assist them in adjusting themselves to college life. Three recitations.

HAd 225. **Child Care and Training.** Third term, 3 hours.
Study of the growth, development, and training of the young child. Observations in the nursery school. For lower division students not in Home Economics degree curricula, or students who have not had psychology. Three recitations.

UPPER DIVISION COURSES

HAd 320. **Child Development.** First or second term, 3 hours.
Brief study of the growth and development of the young child. Observations in the nursery school. Prerequisite; Psy 203 or 211, Z 211. Three recitations.

HAd 330. Household **Equipment**. Second term, 3 hours.

Selection, operation, care, and arrangement of household equipment. Prerequisite: one term of Foods. One recitation; 2 two-hour laboratory periods. Not offered 1934-35.

HAd 340. Household **Management**. First or second term, 4 hours.

Problems arising in the management of a home. Special consideration given to the management of money and of time. Should precede or parallel HAd 350. Prerequisite: FN 218 or 213 or 222; Ec 211 (may parallel). Four recitations.

HAd 350. Home **Management** House. Any term, 4 hours.

Principles underlying management of a home are put into practice during a six weeks' residence in a house. Prerequisite: FN 218 or 213 or 222; HAd 320 or 411, 340; Ec 211 (last two courses may be taken parallel).

HAd 401. **Research**. Terms and hours to be arranged.

HAd 403. **Thesis**. Terms and hours to be arranged.

HAd 405. **Reading and Conference**. Terms and hours to be arranged.

HAd 407. **Seminar**. Any term, 1 hour each term.

Reports on special topics and current literature.

HAd 411, 412. **Child Development**. First and second or second and third terms, 3 hours each term.

Study of the growth and development of the normal child, with consideration of conditions fostering optimal development, motor, intellectual, emotional, social. Observation and practice in the nursery school as a laboratory. Prerequisite: Psy 203 or 211. Three recitations, 1 one-hour laboratory period first term; 2 recitations, 1 three-hour laboratory period second term.

HAd 421. **Behavior Problems**. Third term, 2 hours.

A consideration of every-day problems in child behavior; causes and suggested methods of treatment. Prerequisite: HAd 320 or HAd 411, 412; HAd 340. Two recitations.

HAd 422. **Family Relationships**. First or third term, 2 hours.

An analysis of factors entering into adjustments within the modern family group. Prerequisite or parallel: HAd 320, or HAd 411, 412; HAd 340. Two recitations.

HAd 423. **Parent Education**. Second term, 2 hours.

Methods and content in parent education; observation of a study group. Prerequisite: HAd 320 or HAd 411, 412; HAd 340. Two recitations.

HAd 425. **Nursery School**. Any term, 3 hours.

Observation and practice with a group of normal preschool children; special studies. Prerequisite or parallel: HAd 320 or HAd 411, 412. Two three-hour laboratory periods; 1 recitation.

HAd 441. **Economic Problems of the Family**. Second or third term, 3 hours.

Study of those economic problems most directly touching the welfare of the family in modern industrial society; discussion of family

income, its size, sources, adequacy, distribution; the problem of income apportionment and household expenditure; household production; economic contribution of women in homemaking. Prerequisite: Ec 211, HAd 340 (latter may be taken parallel). Three recitations.

HAd 442. **Problems of the Consumer-Buyer.** First or third term, 3 hours.
The problems met by the household buyer in her efforts to make an intelligent selection of goods on the modern market; a critical analysis of the different types of retail marketing agencies that serve her; methods of improving consumer-buying. Prerequisite: Ec 211, HAd 340. Three recitations.

HAd 443. **House Planning in Relation to Function.** Third term, 2 hours.
Study of the private dwelling from the standpoint of family needs and interests; information required in making plans; information now available; characteristics of the "ideal" whole-family house; variations among households in needs and interests; evaluation of common practices in planning low-cost one-family dwellings. Prerequisite: HAd 320 or HAd 411, 412; HAd 340. Two lectures.

GRADUATE COURSES

HAd 501. **Graduate Study and Research.** Any term, hours to be arranged.
Research for which the student is suited by ability and previous training. Assignments of problems by professor in charge.

HAd 503. **Graduate Thesis.** Any term, hours to be arranged.

HAd 505. **Reading and Conference.** Terms and hours to be arranged.
Original problems chosen by the student or suggested by the department are studied and reported on in thesis form.

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

Institution Economics

COURSES in Institution Economics are planned to meet the needs of students who desire to prepare for positions in the field of institutional management. Three halls of residence for women and five for men, together with the banquet and tea rooms in the Memorial Union are used as laboratories. The facilities are adequate for thorough training in this field.

DESCRIPTION OF COURSES

UPPER DIVISION COURSES

IEc 311. **Quantity Cookery and Catering.** First term, 3 hours.
Application of principles of cookery to the preparation of food in large quantity; standardization of formulas, dietetic value, cost; use of modern equipment; menu planning. Experience in the preparation and service of foods for special functions. Prerequisite: FN 213 or 222. One lecture; 2 two-hour laboratory periods.

IEc 320. **Cafeteria Management.** Summer session, 3 hours.
This course is offered to meet the needs of the student who plans to teach and manage a school cafeteria. The work includes menu study, buying, cafeteria plans, accounting, management, and practice in quantity cookery. Offered in summer session only. Prerequisite: FN 213 or 222.

IEc 401. **Research.** Terms and hours to be arranged.

IEc 403. **Thesis.** Terms and hours to be arranged.

IEc 405. **Reading and Conference.** Terms and hours to be arranged.

IEc 407. **Seminar.** Terms and hours to be arranged.

IEc 420. **Institutional Equipment.** Second term, 3 hours.
Study of equipment for bedrooms, living rooms, dining rooms, and kitchens in different types of institutions; design, materials; construction, cost, and arrangement. Prerequisite: FN 321, HAd 340. Three lectures.

IEc 430. **Institutional Organization and Administration.** First term, 2 hours.
Study of the principles of organization and administration as applied to various types of institutions; discussion of employment problems and training, labor laws, office records. Prerequisite: FN 321, HAd 340. Two lectures.

IEc 440. **Institutional Marketing.** Third term, 2 hours.
Institutional marketing from the standpoint of food purchasing, including production and distribution of food commodities, marketing costs, factors influencing prices, marketing of special foods such as meats, vegetables, fruits, eggs. Prerequisite: FN 321, HAd 340. Two lectures.

IEc 450. **Institution Experience.** Third term, 4 hours.
Designed to give practical experience in organization and administration of an institution. Practice work is done in the various halls of residence, the Memorial Union Dining Service, and office of the Director of Dormitories. Prerequisite: IEc 311, 420, 430, 440. One lecture; 3 two-hour laboratory periods.

GRADUATE COURSES

IEc 501. **Graduate Study and Research.** Any term, hours to be arranged.
Research problems for which the student is suited by previous training and ability.

IEc 503. **Graduate Thesis.** Any term, 6 to 12 hours.
Original problems chosen by the student or suggested by the department are studied and reported on in thesis form.

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

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

COURSES AT UNIVERSITY

The following lower division and service courses in Home Economics are available at the University.

CLOTHING, TEXTILES, AND RELATED ARTS

LOWER DIVISION COURSES

CT 111, 112, 113. Clothing Construction. Three terms, 2 hours each term.
CT 114, 115, 116. Clothing Selection. Three terms, 1 hour each term.
CT 125. Textiles. First or second term, 2 hours.
CT 231. Home Planning and Furnishing. Third term, 3 hours.

FOODS AND NUTRITION

LOWER DIVISION COURSES

FN 211, 212, 213. Foods. Three terms, 3 hours each term.
FN 225. Principles of Dietetics. Any term, 2 hours.
FN 250. Camp Cookery. Third term, 1 hour.

HOUSEHOLD ADMINISTRATION

LOWER DIVISION COURSES

HAd 225. Child Care and Training. First term, 3 hours.
HAd 240. Family and Personal Budgets. Second term, 1 hour.

UPPER DIVISION SERVICE COURSE

HAd 339. Household Management. Second term, 3 hours.

School of Pharmacy

Faculty

ADOLPH ZIEFLE, Phar.D., Dean of the School of Pharmacy.
MYRTLE RUTH BURNAP, B.S., Secretary to the Dean.

Practical Pharmacy

FRANCOIS ARCHIBALD GILFILLAN, Ph.D., Professor of Pharmacy; Head of Department.

Pharmaceutical Analysis

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

Pharmacology and Pharmacognosy

ERNST THEODORE STUHR, M.S., Associate Professor of Pharmacology and Pharmacognosy; In Charge of Department.

General Statement

IN 1898, on petition of the druggists of Oregon for more thorough theoretical and practical instruction in pharmacy and related branches than could be provided in the average drug store, pharmacy was first established as a separate department of the State College. From its inception the department grew steadily, and in 1917 it was raised to the rank of a school. The School is therefore an integral part of the State College organization, and as a consequence has shared in the support accorded by the State of Oregon and the national government. As a result of this support, together with the fact that it is a part of a great educational institution, the School is equipped to offer standard curricula and to maintain a high degree of excellence in its work.

The School of Pharmacy is a member of the American Association of Colleges of Pharmacy, organized to promote pharmaceutical instruction in the United States. Institutions holding membership must maintain certain minimum requirements for entrance and graduation. The influence of the Association has been so great that many states either by law or by ruling of the state board of pharmacy recognize its standards.

The State College is accredited by the Association of American Universities. The curricula of the School of Pharmacy are registered by the New York Board of Higher Education. Diplomas, as well as the work of students in this School, are recognized by all state boards of pharmacy requiring attendance in a school of pharmacy as a prerequisite for examination and registration.

Requirements of the Pharmaceutical Profession. Public sentiment demands high requirements for the practice of pharmacy through the enactment of stringent State and Federal laws. Pharmacists must now have a scientific training such as cannot be obtained by merely working in a drug store. The minimum college requirement of the Oregon State Board of Pharmacy is completion of a Class A four-year curriculum in pharmacy as a prerequisite for examination and registration.

Pharmacy as a Profession for Women. No field of work offers more desirable opportunities for women than pharmacy. The work is clean, pleasant, and agreeable. Women are peculiarly adapted to it. The technical work of manufacturing and dispensing drugs involves the traits of neatness and accuracy that, generally speaking, are more predominant in women than in men. In store arrangement, window trimming, and other work requiring a knowledge of color harmony and display, a woman is naturally more adept than a man. More than seventy-five per cent of all drugs and druggists' sundries are purchased by women, and it is natural that those patrons should prefer to deal with women.

Entrance Without Drug-Store Experience. The State Board of Pharmacy requires one year of drug-store experience before registration can be granted. Students are not required to have had such experience to register in the School of Pharmacy. Such experience is very desirable, however, and students are advised to acquire one or preferably two years before taking up the courses in Pharmacy. No secondary or advanced credits are allowed for drug-store experience.

Regulations and Standards. Class instruction, entrance requirements, and scientific standards are the same as in the other schools of the State College, as well as in other Class A schools and colleges of pharmacy. Students are trained not only in technique, power of observation, and the principles of pharmacy, but also in resourcefulness, initiative, and individual responsibility. Students share all of the advantages and enjoy the spirit of a large educational institution. Lecture periods are fifty minutes each, laboratory periods two or three hours, depending on the character of the work. Some of the advanced courses require a large amount of collateral reading. Courses continue through the regular academic year of nine months.

Oregon Law Relating to the Practice of Pharmacy. The Oregon State Pharmacy Law is enforced by the Oregon State Board of Pharmacy. This Board recognizes two classes of pharmacists: registered pharmacists and registered assistant pharmacists. The state law outlines the scope and duties of each class of pharmacists with regard to the dispensing of prescriptions, the sale of poisons, and other professional services. A registered pharmacist can operate and manage a drug store, compound medicinal substances, and sell poisons, and it is his duty to train apprentices in the professional phases of pharmacy. A registered assistant pharmacist cannot operate or manage a drug store although he may be left in charge during the temporary absence of the registered pharmacist. His duties are to assist the registered pharmacist and under proper supervision he may dispense prescriptions, sell poisons, and perform other professional services in a drug store.

A resumé of the Oregon State Pharmacy Law passed in 1921 and amended in 1931 is as follows:

To qualify as REGISTERED PHARMACIST, a candidate must meet the following requirements:

1. He must be an American citizen and at least twenty years of age.
2. He must be a graduate of a school or college of pharmacy accredited by the Oregon State Board of Pharmacy.
3. He must take the registered pharmacist's examination, make a weighted average of seventy-five per cent and not fall below sixty-five per cent in any one subject.
4. He must have completed one year of practical drug-store experience under the supervision of a registered pharmacist comprising a minimum of at least 2,400 hours of work per calendar year. In no case will more than 2,400 hours of practical experience be credited for any calendar year. Blanks are provided by the State Board of Pharmacy for the registration of practical experience and all such experience must be certified to on affidavit by a registered pharmacist.

To qualify as REGISTERED ASSISTANT PHARMACIST, a candidate must meet the following requirements:

1. He must be an American citizen and at least eighteen years of age.
2. He must have completed three years of practical experience in a drug store where prescriptions of physicians are compounded and dispensed, under the supervision of a registered pharmacist. Each year of such experience must comprise at least 2,400 hours of work, but in no case will more than 2,400 hours be credited for any calendar year. The State Board of Pharmacy accredits the time actually spent in a school of pharmacy as practical experience, but in no case shall more than two years of college training be credited as practical drug-store experience.
3. He must pass the assistant pharmacist's examination given by the State Board of Pharmacy.

Eligibility for Examination. All graduates of the School of Pharmacy are eligible to take the examinations of the Oregon State Board of Pharmacy. Those graduates who pass in all subjects and who have completed one year of practical drug-store work receive the certificate of registered pharmacist. The certificates of the graduates who pass in all subjects, but who have not completed one calendar year of practical drug-store work under the supervision of a registered pharmacist, are withheld until they can fulfill this requirement. These graduates have no standing whatsoever as registered pharmacists or registered assistant pharmacists until they can fulfill all of the requirements for the registered pharmacist's certificate.

Preparation for Examinations of State Boards of Pharmacy. Before they can practice pharmacy, all graduates in pharmacy are required to pass the examination of a state board of pharmacy. In preparation for these examinations, in addition to regular class work during the third term of each academic year, the faculty organizes review classes for senior students for the purpose of giving trial state board examinations; studying

sets of typical state board questions; studying specimens of drugs and chemicals for examination in identification; giving oral examinations and using all other means to familiarize the student with the various subjects in which they will be examined. Because of this service graduates of the School of Pharmacy have made an outstanding record in the examinations of the Oregon State Board of Pharmacy.

Reciprocity. Since the Oregon State Board of Pharmacy is a member of the National Association of State Boards of Pharmacy, graduates who are registered by this Board are privileged to reciprocate without further examination with all states except California and New York, which do not reciprocate with any other state.

O. S. P. A. Educational Fund. Oregon druggists assembled at the thirty-sixth annual convention of the Oregon State Pharmaceutical Association held in the Pharmacy Building July, 1925, established an Educational Fund. The chief purpose of the fund is to assist worthy students of the School of Pharmacy who have a reasonable amount of means to complete their course. Oregon druggists are donating an average of $100 each, payable on demand or in ten installments. Wholesale drug firms doing an extensive business with the drug trade of Oregon are also contributing generously. A fund adequate for the needs of the School of Pharmacy is assured. The operation of the Fund is under the direction of a Board of Trustees elected from membership in the state association. As a basis for granting loans students are required to submit on the application form a budget, references, the name of a guarantor, and other information regarding their assets and liabilities. The average loan per student per year is $100. The Educational Fund notes bear four per cent interest. Only in exceptionally worthy cases are loans granted during the first term.

Correspondence. Inquiries regarding the School of Pharmacy may be addressed to the Dean. Students desiring to enter will be provided by the College Registrar with proper blanks for filing credentials.

Major Curricula

BOTH undergraduate and graduate work is offered by the School of Pharmacy preparing for intelligent practice in all fields of the pharmacy profession. Both the bachelor's and the master's degrees are offered.

The Bachelor's Degree. Four-year curricula leading to the degree of Bachelor of Science in Pharmacy are offered by the School of Pharmacy. During the freshman and sophomore years all students pursue substantially the same curriculum although modifications are authorized by the Dean whenever deemed necessary from the standpoint of the student's objectives or needs. In the junior and senior years opportunity is afforded for students to prepare for various fields through two distinct curricula: one in Practical Pharmacy and one in Professional Pharmacy. The distinction between these two fields of study is one of emphasis, since service in the field of either curriculum is both practical and professional.

A total of 192 term hours must be completed in order to receive a degree in either curriculum. Of these, 76 term hours in the Practical Phar-

macy Curriculum and 45 term hours in the Professional Pharmacy Curriculum are required subjects taken in the School of Pharmacy.

A. Practical Pharmacy Curriculum. This curriculum is designed to provide for thorough training in pharmacy, chemistry, biology, accounting, business law, and related subjects, so that the graduate will be prepared not only to pass the examinations of state boards of pharmacy but to serve efficiently in all branches of practical drug-store work. Since the commercial phases of pharmacy are rapidly becoming a dominant feature of the modern drug store, a series of lectures and demonstrations in the model drug store is given each year to the members of the senior class by a group of twenty non-resident lecturers representing all phases of the drug business. This lecture series supplements the regular instruction in commercial pharmacy. In addition, students intending to engage in practical drug-store work are urged to elect additional courses in accounting and merchandising.

The following are some of the fields open to thoroughly trained and experienced pharmacists: preparation and dispensing of medicines; dispensers and clinical technicians in hospitals; managers and proprietors of drug stores; chemists and department managers for laboratories that manufacture drugs and chemicals; positions in public health work where the graduate is expected to advise the public in health and sanitation; and a variety of other positions demanding a knowledge of pharmacy and related subjects.

B. Professional Pharmacy Curriculum. Students wishing to prepare for positions demanding more intensive training in scientific and cultural subjects than is provided for in the practical pharmacy curriculum, together with basic training in pharmacy and related subjects, may prepare through this curriculum for the following positions: research and manufacturing chemists with wholesale drug firms; graduate work; traveling representatives with drug firms who call on physicians and pharmacists in the interest of newly developed drugs and other substances; inspectors for state and federal bureaus; pharmacists and specialists with the United States government in the departments of public health, veterans' administration, the navy, the army, internal revenue department, federal pure food and drug laboratories, chemists with state boards of health and state food and drug laboratories; and a variety of other positions.

Options in the election of courses are permitted according to the student's interests and needs. Prior to registration for each term the Dean outlines for each student the courses he should elect to fulfill his objective, together with delinquencies. It is therefore incumbent upon each student who intends to register in the School of Pharmacy to communicate with the Dean to ascertain the course of study best suited to his needs.

Since the American Medical Association has recognized the State College as a Class A institution, a student by completing the professional pharmacy curriculum can qualify in the period of four years for admission to a Class A medical school and the degree of Bachelor of Science in Pharmacy.

All Class A dental schools require one year of college predental work for admission, including one year's credit in English composition, zoology, physics, general inorganic chemistry, and qualitative analysis to which may be added elective courses such as drawing, shop work, modern language and other courses recommended by dental schools. If a student is interested in any specific medical school or dental school, or if he desires to prepare for the examinations given to osteopaths, chiropractors, and practitioners in other healing arts, he should study current catalogs and other requirements. Upon request the Dean will furnish all information necessary to outline the student's course of study.

Advanced standing is granted to students transferring from other institutions of collegiate rank. Application for advanced standing is made on official transcript submitted to the Registrar. Upon receipt of the advanced standing report, the Dean makes a study of the student's case and outlines the program to be followed to graduate in pharmacy, to be admitted to medical schools or dental schools, or to qualify for any other objective which the student desires to attain.

Graduate Work. Graduate work leading to the degree of Master of Science (M.S. in Phar.) is offered in the School of Pharmacy. Candidates for the master's degree must hold a bachelor's degree in pharmacy from the State College or its equivalent from an institution of equal rank. In addition, candidates must have attained a creditable scholastic average in their undergraduate work and must have determined upon a definite objective to be attained through the advanced work. Institutional requirements for the degree of Master of Science will be found under Graduate Division.

In all cases, a minimum of one entire academic year of three terms in residence is necessary when full time is devoted to the fulfillment of the requirements of the degree. If a candidate devotes part time to instructional work, for which compensation is received, a period longer than three terms is required. Fulfillment of the requirements of the major is based primarily on original work completed along some line of experimental investigation. A thesis must be prepared, incorporating the results of the investigation. An oral examination, given by the instructors in the department in which the candidate majored, is required.

The School of Pharmacy is well equipped with apparatus and facilities for scientific investigation. Where special apparatus is required, arrangement has been made to use that belonging to the Laboratory of the Oregon State Board of Pharmacy, located in the Pharmacy Building.

Facilities

MODERN facilities for the work of the School of Pharmacy are afforded in the Pharmacy Building. These include special laboratories, a model drug store, a complete sign-card and window-trimming department, museum, library, and study room.

Equipment. The laboratories and lecture rooms are equipped with all apparatus necessary for practical pharmaceutical instruction. Students have individual desks supplied with the materials necessary for the specific course. Students can borrow as much additional apparatus as they may

need from the three pharmacy stockrooms. In order to conserve students' time in laboratory courses, all stock is placed on side shelves. Students are thus enabled to repeat an experiment as many times as are necessary to get accurate results.

In addition to the usual permanent fixtures and apparatus for individual students, the School is supplied with a number of pieces of special apparatus such as pharmaceutical stills, tablet and pill machines, filter presses, hand and power drug mills, special percolators, gas and electric drying ovens, and such other apparatus as is necessary for modern pharmaceutical instruction. The pharmacognosy room contains several hundred samples of crude drugs, official and unofficial preparations, and active principles of drugs used for study and identification purposes. There is also a collection of authentic crude drugs and their preparation donated by Eli Lilly company. This collection is used as a standard for all new supplies of drugs received. The special laboratory for commercial pharmacy is very well equipped for sign-card painting and display material.

Model Drug Store. Donations from wholesale and jobbing firms, from manufacturers of drug-store fixtures, and from other sources have made it possible for the School of Pharmacy to equip in a corner room, 23 by 35 feet, on the second floor of the Pharmacy Building, a complete model drug store. The fixtures consist of Stedman's rubberoid flooring, 32 feet of mahogany English wall cases, 18 feet of plate-glass marble-base show-cases, a 10-foot wrapping counter, a 10-foot mahogany prescription case, 25 feet of cross partition, Coty display case, a cash register, an intercommunicating telephone, Waterman pen case, and similar displays. These fixtures, together with a complete stock, are used for instruction in salesmanship, show-case and window trimming, inventory, the keeping of poison and narcotic records, taking copies of prescriptions over a telephone, systematizing a drug stock and store management. As the stock and fixtures were donated for instructional purposes, nothing is actually sold or dispensed.

State Drug Laboratory. For the purpose of determining the purity and regulating the sale of medicinal substances in the State of Oregon, the Oregon State Board of Pharmacy, in October, 1927, established in the Pharmacy Building a State Drug Laboratory, which is under the supervision of trained chemists.

The object of the laboratory is to enforce Section 8646 of the Oregon laws fixing the responsibility for the purity of drugs upon the pharmacist. Realizing that druggists are not equipped to assay pharmaceutical preparations, the Board of Pharmacy established the laboratory primarily to assist them to dispense pure drugs. By means of the laboratory it is also the object of the Board to prevent dishonest practice and gross adulteration of medicinal substances sold by individuals other than pharmacists, and to make it a legal necessity that all drugs sold in the state shall be true to label.

The funds required to equip and maintain the laboratory are furnished by the Oregon State Board of Pharmacy. The room, permanent laboratory furniture, and other requisites are furnished by the College. The director of the laboratory is also a member of the faculty of the School of Pharmacy and in addition to teaching undergraduate courses directs advanced students in their research work to qualify for the degree of Master of Science.

Because of the superior equipment in the drug laboratory together with the excellent facilities for original work provided by the College, it is possible for advanced students to do creditable work on the natural drug resources of Oregon and the Pacific Northwest; on the perfection in the manufacture of pharmaceuticals; to determine the stability and the best methods of preserving drug preparations; to collaborate with the Bureau of Chemistry of the United States Department of Agriculture, in the revision of the U. S. P. and N. F., and, in fact, along all lines of drug analysis.

Four-Year Curricula in Pharmacy

B.S. Degree

Practical Pharmacy *Professional Pharmacy*

LOWER DIVISION CURRICULUM

Freshman Year	Term hours 1st	2d	3d
English Composition (Eng 111, 112, 113)	3	3	3
General Chemistry (Ch 204, 205, 206)	5	5	5
History or elective	3	3	3
[1]Theoretical Pharmacy (Phr 111, 112)	3	3	—
[1]Pharmaceutical Processes (Phr 113)	—	—	3
[2]Physical Education	1	1	1
Military Science	1	1	1
Social Ethics (Women) (PE 131)	—	—	—
	16	16	16

Sophomore Year			
Organic Chemistry (Ch 226, 227)	5	5	—
Quantitative Analysis (Ch 232)	—	—	5
German or French (or elective)	4	4	4
General Zoology (Z 201, 202, 203)	3	3	3
[3]Commercial Pharmacy (Phr 211, 212)	—	2	2
Advanced Physical Education	1	1	1
Military Science	1	1	1
Elective	2	—	—
	16	16	16

PRACTICAL PHARMACY

Junior Year			
Constructive Accounting (BA 111, 112) or Military Science	4	4	—
Business Law (BA 256)	—	—	4
Elementary Bacteriology (Bac 201)	3	—	—
General Bacteriology (Bac 204)	—	3	—
Immunity and Serum Therapy (Bac 333)	—	—	3
Practical Pharmacognosy (PhP 331, 332)	3	3	—
Natural Products and Drug Principles (PhA 321)	3	—	—
Pharmacopoeial Testing (PhA 327)	—	3	—
Inorganic Pharmacy (Phr 311)	4	—	—
Pharmaceutical Calculations (Phr 313)	—	3	—
Galenical Pharmacy (Phr 317)	—	—	3
Galenical Preparations (Phr 318)	—	—	3
Military Science or approved elective	—	—	3
	17	16	16

[1]Students expecting to major in the professional curriculum take German (Ger 1, 2, 3, or equivalent, in place of Phr 111, 112, 113).

[2]General Hygiene, 2 term hours, is taken one term in place of Physical Education.

[3]Students expecting to major in the professional curriculum take General Physics (Ph 201, 202, 203) in place of Phr 211, 212, and omit the first term elective.

Senior Year	Term hours 1st	2d	3d
Practical Pharmacology (PhP 391, 392)	3	3	—
Experimental Pharmacology (PhP 393)	—	—	3
Proprietary Remedies (Phr 350)	—	—	3
U. S. Pharmacopoeia and National Formulary (Phr 341, 342)	3	3	—
Drug Store Practices (Phr 347, 348) or Military Science	3	3	—
Manufacturing Pharmacy (Phr 344)	—	3	—
Prescription Lectures (Phr 354)	4	—	—
Prescription Incompatibilities (Phr 355)	—	4	—
Prescription Compounding (Phr 356)	—	—	3
Military Science or approved electives	3	—	6
	16	16	15

PROFESSIONAL PHARMACY

Junior Year			
Vertebrate Zoology (Z 204, 205, 206)	4	4	4
Theoretical Pharmacy (Phr 120)	4	—	—
Inorganic Pharmacy (Phr 311)	—	4	—
Practical Pharmacognosy (PhP 331, 332)	3	3	—
Pharmaceutical Calculations (Phr 313)	—	3	—
Galenical Pharmacy (Phr 317)	—	—	3
Galenical Preparations (Phr 318)	—	—	3
Essay Writing (Eng 211)	3	—	—
Elementary Physical Chemistry (Ch 340)	—	—	3
Military Science or non-science elective	3	3	3
	17	17	16

Senior Year			
Elementary Psychology (Psy 201, 202)	—	3	3
U. S. Pharmacopoeia and National Formulary (Phr 341, 342)	3	3	—
Practical Pharmacology (PhP 391, 392)	3	3	—
Prescription Lectures (Phr 354)	4	—	—
Prescription Compounding (Phr 356)	—	—	3
Literature or Public Speaking	3	3	3
Natural Products and Drug Principles (PhA 321)	—	—	3
Military Science or approved electives	3	3	3
	16	15	15

Practical Pharmacy

IN the department of Practical Pharmacy are offered elementary, basic, and advanced courses in theoretical pharmacy, pharmaceutical processes, and commercial pharmacy, including advanced courses at both the upper division and graduate levels.

DESCRIPTION OF COURSES

LOWER DIVISION COURSES

Phr 111, 112. **Theoretical Pharmacy.** First, second terms; 3 hours each term.

A systematic study of the official standards, processes, and apparatus used in pharmacy. Part I of Arny's *Principles of Pharmacy,* together with mimeographed lecture and laboratory outlines, is used. The laboratory work is designed to illustrate each topic taken up in lecture, such as weights and measures, specific gravity, uses of heat, solution, the grinding and extraction of drugs and other processes. Two lectures; 1 recitation; 1 three-hour laboratory period. Professor Ziefle.

Phr 113. **Pharmaceutical Processes.** Third term, 3 hours.

The fundamental manipulation used in the manufacture of simple galenical preparations. The manufacturing processes discussed in

lecture are employed in the laboratory in compounding the simpler preparations of the U. S. P. and N. F.; also a few common unofficial preparations. Prerequisite: Phr 112. Two lectures; 1 recitation; 1 three-hour laboratory period. Professor Gilfillan.

Phr 120. **Theoretical Pharmacy.** Any term, 4 hours.

An abbreviated course identical with Phr 111, 112 except that no laboratory work is offered. Admission to this course is restricted to students transferring from other institutions having advanced standing credit for one year of general chemistry and other science courses. This course is designed to complete Theoretical Pharmacy in one term. Three lectures; 2 recitations. Assistant Professor Britt.

Phr 211, 212. **Commercial Pharmacy.** Second and third terms, 2 hours each term.

The printing of labels, price tags, and simple display signs; preparation of display standards and backgrounds; and other practical display work. The model drug store and sign-card painting and window-trimming department are used as laboratories. Printed laboratory notes and assigned readings. Students are required to furnish brushes and pens. Three two-hour laboratory periods. Assistant Professor Britt.

Phr 220. **Household Preparations.** Any term, 3 hours.

Study of the more common medicinal remedies, technical preparations, toilet requisites, and druggists' sundries used in the home. In the laboratory students prepare representative samples of each class of preparations and study the mode of application and specific use. Stain removers. Equipping and proper labeling of a medicine cabinet. Representative samples of stock and sundries are used for demonstration. Elective without prerequisites. One lecture; 1 recitation; 1 three-hour laboratory period. Professor Ziefle and assistants.

UPPER DIVISION COURSES

Phr 311. **Inorganic Pharmacy.** First or second term, 4 hours.

Inorganic chemicals and their preparations used in medicine. Part III of Arny's *Principles of Pharmacy* is used as a lecture outline. In the laboratory students make representative samples of certain types of chemicals, as well as tests for impurities, such as arsenic, lead, antimony, etc. Prerequisite: Ch 205. Two lectures; 1 recitation; 1 three-hour laboratory period. Professor Gilfillan.

Phr 313. **Pharmaceutical Calculations.** Second term, 3 hours.

Study of calculations common to pharmacy; weights and measures; percentage solution; alligations; specific gravity; thermometers; etc. Prerequisite: Phr 111, Ch 204. Two lectures; 1 recitation. Professor Gilfillan.

Phr 317. **Galenical Pharmacy.** Third term, 3 hours.

A study of the various types of galenical preparations as outlined in Part II of Arny's *Principles of Pharmacy* and in the U. S. Pharmacopoeia and National Formulary. Prerequisite: PhP 331, Ch 226. Two lectures; 1 recitation. Professor Gilfillan.

Phr 318. **Galenical Preparations.** Third term, 3 hours.

Laboratory work in the preparation of simple galenicals, such as waters, pills, emulsions, suppositories, ointments, troches. Frequent identification examinations are held to familiarize students with the characteristics of the drugs they use, as well as of the preparations they make. Prerequisite or parallel: PhP 331, Ch 226. Three three-hour laboratory periods. Assistant Professor Britt.

Phr 341, 342. **U. S. Pharmacopoeia and National Formulary.** First and second terms, 3 hours each term.

All drugs in United States Pharmacopoeia and National Formulary, as well as all important unofficial drugs and preparations in the dispensatories, studied with emphasis on composition, uses, methods of manufacture, reasons for each step in process of manufacture, and all other important data. Complete review of all pharmacy subjects; study of typical state board questions; grounding in pharmaceutical legislation, identification of drugs and preparations, as well as other subjects which will prepare students for both state pharmacy examinations and efficient service in practical drug-store work. Prerequisite: Phr 317, PhP 332, Ch 227. Two lectures; 1 recitation. Professor Gilfillan.

Phr 344. **Manufacturing Pharmacy.** Second term, 3 hours.

This course deals with the manufacture of the more complex pharmaceuticals involving chemical reactions in their preparation. The aim of the course is to familiarize students with the accepted methods of manufacture of drugs in order that they may prepare small amounts of chemicals often required in compounding special prescriptions. Prequisite: Phr 318, Ch 227. Three three-hour laboratory periods. Associate Professor Stuhr.

Phr 347, 348. **Drug Store Practices.** First, second terms; 3 hours each term.

The stock and equipment of the model drug store are used for instruction in practical drug-store work, including preliminary problems of establishing a drug store, store arrangement, salesmanship, show-case and window trimming, inventory, keeping narcotic and poison records, taking copies of prescriptions over the telephone, and other phases of drug-store work. Mimeographed lecture notes, current trade bulletins, lectures by druggists and salesmen, and demonstrations by use of motion-pictures. Since all stock and sundries in the model drug store were donated for instructional purposes, nothing is actually sold or dispensed. Prerequisite: Phr 313. One lecture; 1 recitation; 1 three-hour laboratory period. Professor Ziefle.

Phr 350. **Proprietary Remedies.** Third term, 3 hours.

A brief descriptive survey of the more important preparations of various pharmaceutical manufacturers; a consideration of their composition, use, and therapeutic value. The text, *New and Non-official Remedies*, is supplemented by current literature and laboratory reports. Demonstration material includes most of the remedies considered. Prerequisite: Phr 342. Two lectures; 1 recitation. Professor Gilfillan.

Phr 354. **Prescription Lectures.** First term, 4 hours.

The theory of prescription compounding as outlined in Scoville, *Art of Compounding*, is made the basis of the course. The aim is to familiarize students with the approved methods of compounding prescriptions containing ordinary remedies, as well as proprietaries and the newer remedies. Prerequisite: Phr 318, PhP 332, Ch 227. Two lectures; 1 recitation; 1 three-hour laboratory period. Associate Professor Stuhr.

Phr 355. **Prescription Incompatibilities.** Second term, 4 hours.

Several hundred incompatibilities in prescriptions studied from the point of view of the cause of the incompatibility and the best method of overcoming it. Practical druggists throughout the state send in incompatible prescriptions for advice as to the best method of compounding, and these together with the regular type prescriptions as outlined in Ruddiman's *Incompatibilities in Prescription* and in current pharmaceutical literature are made the basis of the course. Prerequisite: Phr 354. Two lectures; 1 recitation; 1 three-hour laboratory period. Associate Professor Stuhr.

Phr 356. **Prescription Compounding.** Third term, 3 hours.

In this course the students apply the principles learned in Phr 355 to the actual compounding of prescriptions. More than one hundred prescriptions representing the general types met with in actual practice are compounded. The latter part of the course deals with the management of a prescription department, the compounding of toilet and domestic preparations, as well as many other methods common to a pharmacy. In preparation for the state pharmacy examination students study the physical characteristics of all common drugs, chemicals, preparations, and synthetics, and are examined in identification. Prerequisite: Phr 355. One lecture; 2 three-hour laboratory periods. Associate Professor Stuhr.

GRADUATE COURSES

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

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

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

Phr 507. **Seminar in Current Problems.** Terms and hours to be arranged.

Instruction and practice in the method of attack of a scientific problem, the use of pharmaceutical literature, and the preparation of written reports on scientific investigations.

Pharmaceutical Analysis

ALL courses in drug analysis, qualitative and quantitative, are offered through the Department of Pharmaceutical Analysis. All the work is of upper division or graduate character. The Department of Pharmaceutical Analysis is under the supervision of the Director of the Drug Laboratory of the Oregon State Board of Pharmacy.

DESCRIPTION OF COURSES

UPPER DIVISION COURSES

PhA 321. **Natural Products and Drug Principles.** First or third term, 3 hours.

A combined lecture and laboratory course on the natural products, active constituents of drugs, synthetic drugs, and newer remedies. The purpose of the course is to study all official and unofficial drugs in these classes in groups, the methods of isolation and manufacture, physical characteristics, incompatibility, medicinal and technical uses, confirmatory tests, and tests for adulteration and deterioration. Prerequisite: Ch 226. One lecture; 2 three-hour laboratory periods. Assistant Professor Britt.

PhA 327. **Pharmacopoeial Testing.** Second term, 3 hours.

The quantitative testing of the more common official and unofficial drugs for their purity and strength. Students analyze the preparations made in the laboratory, as well as other substances used in dispensing practice. Prerequisite: Ch 227. One lecture; 2 three-hour laboratory periods. Assistant Professor Britt.

PhA 361, 362, 363. **Quantitative Drug Analysis.** Three terms, 3 hours each term.

Quantitative analysis of crude drugs and drug preparations by physical means or chemical methods. Polariscope, refractometer, and other special apparatus are used. Students showing proficiency in this course are permitted to do special work in the State Drug Laboratory. Prerequisite: PhA 321, 327; Ch 227. One lecture; 2 three-hour laboratory periods. Assistant Professor Britt.

PhA 441. **Toxicology.** Any term, 3 hours.

Detection of the common inorganic and organic poisons, with emphasis on alkaloids and synthetics. Tests used are those commonly accepted as evidence in medico-legal cases. Pharmacological action of each poison and antidotal treatment. Prerequisite: PhP 332, PhA 321, Ch 227. One lecture; 2 three-hour laboratory periods. Assistant Professor Britt.

GRADUATE COURSES

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

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

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

PhA 507. **Seminar in Current Problems.** Terms and hours to be arranged. Conducted jointly with Phr 507 and PhP 507. See Phr 507.

Pharmacology and Pharmacognosy

COURSES in the culture and identification of medicinal plants, together with all courses dealing with the physiological action of drugs and their therapeutic value, are included in the Department of Pharmacology and Pharmacognosy. All the work is of upper division or graduate character.

DESCRIPTION OF COURSES

UPPER DIVISION COURSES

PhP 331, 332. **Practical Pharmacognosy.** First and second terms, 3 hours each term.

Study of animal and vegetable drugs with reference to their habitat, botanical classification, official titles, synonyms, constituents, uses, identification, and standardization. Prerequisite: Phr 113, Ch 227. Three lectures; 1 recitation. Associate Professor Stuhr.

PhP 338. **Microscopy of Drugs.** Any term, 3 hours.

Microscopic structure and characteristics of drugs; methods of identifying powdered drugs and of detecting adulterations. Prerequisite: PhP 332. One lecture; 1 recitation; 2 three-hour laboratory periods. Associate Professor Stuhr.

PhP 391, 392. **Practical Pharmacology.** First and second terms, 3 hours each term.

Physiological action and medicinal uses of drugs on the human organism. Drugs classified according to the arrangement in Cushny's *Pharmacology*, the subjects treated in the following order: factors influencing the use of remedies; definitions of medical terms; dose and action; official definitions and constituents. Preparation for the state board examinations in this subject. State and national laws regarding the sale of poisons and narcotics receive special attention. Prerequisite: Phr 318, PhP 332. Two lectures; 1 recitation. Associate Professor Stuhr.

PhP 393. **Experimental Pharmacology.** Third term, 3 hours.

A continuation of PhP 391, 392, but with the introduction of laboratory work and demonstration. Biological tests are made of some of the more important drugs of the U. S. P. and N. F. Prerequisite: PhP 392. Two lectures; 1 three-hour laboratory period. Associate Professor Stuhr.

PhP 481. **Pharmacological Standardization.** Any term, 3 hours.

Biological assaying, employing the methods of the U. S. P., together with certain unofficial but well-recognized procedures. Prerequisite: PhP 393, Ch 227, Bac 333, Z 203. One lecture; 2 three-hour laboratory periods. Associate Professor Stuhr.

GRADUATE COURSES

PhP 501. **Graduate Research.** Terms and hours to be arranged.

PhP 503. **Graduate Thesis.** Terms and hours to be arranged.

PhP 505. **Reading and Conferences.** Terms and hours to be arranged.

PhP 507. **Seminar in Current Problems.** Terms and hours to be arranged. Conducted jointly with Phr 507 and PhA 507. See Phr 507.

Secretarial Science

Faculty

HARRISON VAL HOYT, Ph.D., Dean and Director of Business Administration, Oregon State System of Higher Education; In Charge of Secretarial Science.

HERBERT TOWNSEND VANCE, M.S., Professor of Secretarial Science; Head of Department.

BERTHA WHILLOCK STUTZ, M.S., Associate Professor of Secretarial Science.

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

LILLY NORDGREN EDWARDS, M.A., Instructor in Secretarial Science.

General Statement

A FOUR-YEAR degree curriculum in secretarial training had been offered at the State College from 1916 to 1932, though instruction in secretarial subjects had been offered for many years before that time. In the 1932 allocations of major curricula in the State System of Higher Education, secretarial science was assigned to the State College with the provision that it should be under the control of the Dean and Director of Business Administration. In May 1933, the work in secretarial science was organized by authority of the State Board of Higher Education into a four-year curriculum leading to the degree of Bachelor of Secretarial Science.

The Secretarial Science four-year curriculum is planned to meet the needs of students who wish to prepare themselves for responsible secretarial positions or for such positions as office manager, assistants to public officials, and research assistants. Students may major in Secretarial Science and minor in some other field.

For the degree of Bachelor of Secretarial Science students must satisfy all the general requirements and in addition must follow a prescribed curriculum including the first two years of shorthand and typing, Office Procedure (SS 311, 312), one year of accounting, business English, Elements of Organization and Production (BA 221), Elements of Finance (BA 222), Elements of Marketing (BA 223), one year of business law, and one year of principles of economics.

Commercial Education. In conjunction with the Department of Secretarial Science the School of Education is able to meet the demand for well-prepared teachers of commercial branches in secondary schools. In the selection of their collegiate courses in both Secretarial Science and Education, students should advise with the School of Education. Teachers of commercial science are thus prepared in a way that will place them and their work on a parity with those of other longer-established and more fully developed departments of the high school. The twenty-three term hours in education required for a certificate to teach in accredited high schools must be earned during the junior and senior years.

Facilities. The instruction in secretarial science is centered in Commerce Hall, in which are located classrooms and laboratories for instruction in secretarial subjects. Special facilities comprise the latest office appliances and fixtures including the standard types of typewriters, duplicators, mimeographs, dictaphones, mimeoscopes, filing cabinets, adding machines, bookkeeping machines, and accounting machines. All appliances and equipment are kept in constant repair. Students are taught how to keep in repair the appliances they use.

Curriculum in Secretarial Science

B.S.S. Degree

Freshman Year	Term hours 1st	2d	3d
Stenography (SS 111, 112, 113)	3	3	3
Typing (SS 121, 122, 123)	2	2	2
English Composition (Eng 111, 112, 113)	3	3	3
[1]Physical Education	1	1	1
Military Science	1	1	1
Group requirement in science	3	3	3
Electives: Suggested— [2]Home Economics, Mental Hygiene, History, Methods of Study, Language, Literature, Speech	3	3	3
	16	16	16
Sophomore Year			
Applied Stenography (SS 211, 212, 213)	3	3	3
Elements of Organization and Production (BA 221)	4	—	—
Elements of Finance (BA 222)	—	4	—
Elements of Marketing (BA 223)	—	—	4
Principles of Economics (Ec 201, 202, 203)	3	3	3
Constructive Accounting (BA 111, 112, 113)	4	4	4
Advanced Physical Education	1	1	1
Military Science	1	1	1
	16	16	16
Junior Year			
Office Procedure (SS 311, 312)	5	5	—
Office Organization and Management (SS 313)	—	—	5
Business Law (BA 256, 257, 258)	4	4	4
Electives: Suggested— Retail Accounting, Principles of Cost Accounting, Analysis of Financial Statements, Statistics, Modern Governments, [2]Home Economics, Sociology, Art, History, Music, Literature, Advanced Military Science, Speech	7	7	7
	16	16	16

[1]General Hygiene, 2 term hours, is taken one term in place of Physical Education.

[2]Preferred sequence: CT 217, FN 218, HAd 225, or 320. Other sequences: (a) CT 217, 218, 231 or 250. (b) FN 211, 212, 213 *or* FN 220, 221, 222, 225. (c) HAd 411, 412, 421 or 422, 340.

Senior Year	Term hours 1st	2d	3d
Secretarial Science (SS 411, 412)	3	3	----
Seminar in Secretarial Science (SS 407)	1	1	1
Business English (Eng 217)	3	----	----
Merchandising and Selling (SS 436)	----	3	----
General Advertising (SS 439)	----	----	3
International Trade (Ec 440)	4	----	----
Money and Banking (Ec 413)	----	----	4
Investments (BA 463)	----	----	3
Electives:			
Suggested—			
Public Finance; Transportation; [1]Home Economics; Science; Advanced Military Science; Speech	5	9	5
	16	16	16

Description of Courses

COURSES IN SECRETARIAL SCIENCE

LOWER DIVISION COURSES

SS 111, 112, 113. **Stenography.** Three terms, 3 hours each term.

Theory of Gregg shorthand; practical application of theory principles in sentence dictation. Typing (SS 121, 122, 123) must be taken concurrently with this course unless the student has had the equivalent. Students who have had at least one year of Gregg shorthand are not permitted to take course SS 111 for credit. Four recitations.

SS 121, 122, 123. **Typing.** Three terms, 2 hours each term.

Theory and practice of touch typing; rhythm drills, dictation exercises; writing paragraphs; punctuation and mechanical arrangement of business correspondence, legal forms, tabulating, manifolding, speed practice. Students who have had at least one year of typing are not permitted to take SS 121 for credit. Five periods laboratory work; 1 hour home assignment.

SS 211, 212, 213. **Applied Stenography.** Three terms, 3 or 5 hours each term.

Advanced principles and phrases of Gregg shorthand; dictation and transcripts covering vocabularies of representative businesses, such as law, banking, insurance, railway, and manufacturing; advanced dictation, legal forms, newspaper and magazine articles. Prerequisite: SS 113, 123 or equivalent. Three or five recitations; 3 or 5 one-hour laboratory periods; 5 hours home work.

UPPER DIVISION COURSES

SS 311, 312. **Office Procedure.** First and second terms, 5 hours each term.

Training course in the most efficient stenographic methods and office practice, filing, advanced dictation, transcripts, reports, and practical use of modern office appliances. Prerequisite: SS 213 or equivalent. Three lectures; 3 two-hour laboratory periods. Associate Professor Stutz.

SS 313. **Office Organization and Management.** Third term, 5 hours.

Principles and practices of scientific secretarial office management, covering organization, arrangement, and operation, with special consideration of the employment and training of secretarial office

[1]See footnote [2] on page 310 for suggested sequences.

workers. Office efficiency problems and business ethics. Prerequisite: SS 311. Professor Vance.

SS 407. **Seminar in Secretarial Science.** Any term, 1 hour.
Research and survey course in the organization and practice of a modern office in which the student is especially interested and prepared. One period. Professor Vance.

SS 411, 412. **Secretarial Science.** First and second terms, 3 hours each term.
A study of the duties of the secretary in business and the professions; relation of the private secretary to the employer; office organization and management. Lectures, investigation, assigned reading. Study and application of actual problems in college offices. Prerequisite: SS 213 or equivalent. Three lectures. Professor Vance.

SS 436. **Merchandising and Selling.** Second term, 3 hours.
This course deals with retail organizations, practices, policies, and problems. It emphasizes stock control systems, buying, methods of sales promotion such as retail display and advertising, plant operation, personnel, methods of wage payment, credit, finance, receiving and marketing, mark-up, mark-downs, turn-overs, pricing, style changes, trends in retailing, expense classification and distribution. Professor Vance.

SS 439. **General Advertising.** Third term, 3 hours.
Theory and Practice. The economic and social implications of advertising. The advertising agency. "The Campaign," including methods of research and coordination of advertising with marketing and merchandising processes. Selection of media. Retail and mail order advertising. The mechanics of advertising, including typography, printing, engraving, and book making. Practice in production of layouts and copywriting. Professor Vance.

COURSES IN COMMERCIAL EDUCATION

UPPER DIVISION COURSE

Ed 329. **Special Methods in Commerce.** Second term, 3 hours.
Principles of education as used in the development of skills and precisions, largely motor, involved in the learning of such activities as are found in stenography, typing, and accounting. Lectures covering aims, materials, standards, methods of presentation, organization of courses, and arrangement of curricula. Prerequisite: BA 111, 112, 113; SS 311, 312; Ed 311, 312, 313. Three lectures. Associate Professor Stutz.

GRADUATE COURSES

Ed 501. **Educational Research.** Terms and hours to be arranged.
Problems in commercial education. Associate Professor Stutz.

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

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

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

Lower Division and Service Departments

Faculty

MAHLON ELLWOOD SMITH, Ph.D., Dean of Lower Division and Service Departments.

GERTRUDE FULKERSON, Secretary to the Dean.

ARCHITECTURE AND ALLIED ARTS

Art and Architecture

JOHN LEO FAIRBANKS, Professor of Art and Architecture; Head of Department.

IDA MARTHA MATSEN, A.M., Assistant Professor of Art.

DOROTHY MAY BOURKE, B.A., Instructor in Art.

Landscape Architecture

ARTHUR LEE PECK, B.S., B.A., Professor of Landscape Architecture; Head of Department.

FREDERICK ALEXANDER CUTHBERT, M.L.D., Associate Professor of Landscape Architecture.

HERBERT REEVES SINNARD, M.S., Assistant Professor of Landscape Architecture.

ARTS AND LETTERS

English

SIGURD HARLAN PETERSON, Ph.D., Professor of English; Head of Department.

FREDERICK BERCHTOLD, Litt.D., Professor Emeritus of English.

MAHLON ELLWOOD SMITH, Ph.D., Professor of English.

JOHN M KIERZEK, Ph.D., Associate Professor of English.

GERTRUDE ELIZABETH MCELFRESH, A.M., Assistant Professor of English.

DANIEL THOMAS ORDEMAN, Ph.D., Assistant Professor of English.

RALPH COLBY, Ph.D., Assistant Professor of English.

LAURIN BURTON BALDWIN, A.M., Assistant Professor of English.

HERBERT BENJAMIN NELSON, M.A., Assistant Professor of English.

DONALD WILLIAM EMERY, M.A., Instructor in English.

Modern Languages

*LOUIS BACH, A.M., Professor Emeritus of Modern Languages.

MELISSA MARGARET MARTIN, A.M., Associate Professor of Modern Languages; Chairman of Department.

*In charge of special language preparation in French and German for candidates for the doctorate.

EDITH CARTER KUNEY, A.M., Associate Professor of Modern Languages.
MARY EUNICE LEWIS, M.A., Associate Professor of Modern Languages.
ALICE BELLE MYERS, M.A., Instructor in Modern Languages.

Speech

CHARLES BUREN MITCHELL, M.A., Professor of Speech; Head of Department.
ELIZABETH MARIA BARNES, B.L.I., Associate Professor of Speech.
EARL WILLIAM WELLS, J.D., Associate Professor of Speech.
PAUL XENOPHON KNOLL, M.S., Assistant Professor of Speech.
DELOSS PALMER YOUNG, B.S., Instructor in Speech and Dramatics.

BUSINESS ADMINISTRATION

ERNEST EVERTON BOSWORTH, A.B., C.P.A., Professor of Business Administration; In Charge of Department.
JOHN ANDREW BEXELL, LL.D., Dean Emeritus of the School of Commerce.
HERBERT TOWNSEND VANCE, M.S., Professor of Business Administration.
FRANK LESLIE ROBINSON, M.Acct., Associate Professor of Accounting.
JEROME LLOYD LEMASTER, M.A., Associate Professor of Business Administration.
CURTIS KELLEY, M.B.A., Assistant Professor of Business Administration.

JOURNALISM

*CHARLES JARVIS MCINTOSH, B.S., B.S.D., Professor of Industrial Editing.
FRED MURIEL SHIDELER, B.S., Assistant Professor of Journalism; in Charge of Department.

MUSIC

PAUL PETRI, Director of Music; Professor of Singing and Conductor of Choruses; Head of Department.
HARRY LYNDEN BEARD, M.A., Professor of Music; Conductor of R.O.T.C. Band.
LILLIAN JEFFREYS PETRI, Professor of Piano and Music Theory.
REX UNDERWOOD, Professor of Stringed Instruments; Conductor of the College Orchestra.
FLORENCE BOWDEN, B.A., Instructor in 'Cello, Violin and Small Strings; Conductor of the Mandolin and Guitar Club.
BYRON ARNOLD, A.B., Instructor in Organ and Piano.
HOWARD CLAUDE HALBERT, B.M., B.A., Instructor in Violin and Orchestra.
IRIS GRAY, B.Mus., Instructor in Piano.

RELIGION

ERNEST WILLIAM WARRINGTON, M.A., Professor of Religion; Head of Department.

SOCIAL SCIENCE

Economics

MILTON NELS NELSON, Ph.D., Professor of Economics; Head of Department.
WILLIAM HENRY DREESEN, Ph.D., Professor of Agricultural Economics.
ROBERT HORNIMAN DANN, M.A., Assistant Professor of Economics.

*On part time 1934-35.

History

EARNEST VANCOURT VAUGHN, Ph.D., Associate Professor of History; In Charge of Department.

JOSEPH WALDO ELLISON, Ph.D., Associate Professor of History.

Philosophy

GEORGE REBEC, Ph.D., Professor of Philosophy; Head of Department.

Political Science

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

FRANK ABBOTT MAGRUDER, Ph.D., Professor of Political Science.

Psychology

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

JESSE FRANKLIN BRUMBAUGH, A.M., Professor of Psychology.

Sociology

ELON HOWARD MOORE, Ph.D., Professor of Sociology; In Charge of Department.

ROBERT HORNIMAN DANN, M.A., Assistant Professor of Sociology.

General Statement

ALL non-major instruction at the State College except that in Military Science and Tactics and Physical Education is organized into a single administrative unit under a dean. These departments comprise the basic fields of Arts and Letters and Social Science and the professional fields of Architecture and Allied Arts, Business Administration, Journalism, and Music. These constitute major schools at the University and the work at the State College in each case parallels the lower division work in that field at the University.

Similarly, in the basic fields of Biological and Physical Sciences including Mathematics and in the professional field of Home Economics, which constitute major schools at the State College, lower division work parallel to that at the State College is offered at the University.

Students can therefore complete the first two years of work in any of these fields and qualify for a junior certificate at the non-major institution, transferring to the major school at the beginning of the junior year with fundamental requirements for upper division work fully met.

At each institution, in addition to the lower division work, upper division service courses in non-major as well as major fields are offered as needed, either as prescribed subjects or electives for students registered in other fields.

In the organization and administration of the instruction in the non-major departments at the two institutions, the deans of the respective

major schools serve as expert advisers to the end that the offerings shall bear a proper relation to the work of the major school. The deans of major schools at the University who thus serve in an advisory capacity in relation to lower division and service work at the State College are the following:

CLARENCE VALENTINE BOYER, Ph.D., Dean and Director of Arts and Letters.

HARRISON VAL HOYT, Ph.D., Dean and Director of Business Administration.

ELLIS FULLER LAWRENCE, M.S., F.A.I.A., Dean and Director of Architecture and Allied Arts.

ERIC WILLIAM ALLEN, A.B., Dean and Director of Journalism.

JOHN JACOB LANDSBURY, MUS.D., Dean and Director of Music.

JOHN FREEMAN BOVARD, Ph.D., Dean and Director of Physical Education.

JAMES HENRY GILBERT, Ph.D., Dean and Director of Social Science.

In addition to the departments already named, the Department of Religion at the State College is administered under the same organization.

Architecture and Allied Arts

LOWER division and service courses in Architecture and Allied Arts are offered at the State College. By action of the State Board of Higher Education, March 7, 1932, all major work in the Oregon State System of Higher Education leading to baccalaureate and advanced degrees in Architecture and Allied Arts was confined to the School of Architecture and Allied Arts at the University, and lower division work comprising instruction in the freshman and sophomore years was assigned to both the University and the State College.

The lower division instruction in Art and Architecture and in Landscape Architecture at the State College constitutes essentially the equivalent of lower division work in these subjects at the University; and students finding it more convenient to spend their freshman and sophomore years at the State College may transfer to the University for their major work without loss of credit and with fundamental requirements for upper division work in these subjects fully met. In the case of students who take the first two years of the Landscape Architecture curriculum at the University, the third year is taken at the State College.

The lower division program in Architecture and Allied Arts at the State College, besides laying a broad foundation for later specialization in Architecture and Allied Arts at the University, is intended also to serve the needs of students majoring in other fields. In addition, upper division service courses, prescribed as required subjects or available as electives for students registered in other fields, are given as needed at the State College.

Art and Architecture

FUNDAMENTAL instruction in drawing, painting, architectural theory, design, composition, and color is offered in the Department of Art and Architecture, together with training in art appreciation.

DESCRIPTION OF COURSES

LOWER DIVISION COURSES

AA 100, 101, 102. **Art Appreciation.** Three terms, 3 hours each term.

A study of the principles and practices of the arts. It seeks an understanding of why men had the urge to produce the arts in the first place, and what types of usefulness the arts serve today. It shows how function, color, scale, textures, and proportions enter into one's personal habits of appreciation.

AA 120. **Construction.** Third term, 1 hour.

Introduction to architectural elements by means of individual research and observation. The sketching of existing examples, supplemented by class discussion.

AA 160, 161, 162. **Color and Composition.** Three terms, 3 hours each term.

Elementary study of relations of line, areas, mass, neutral values and color values for pictures, decorations, and interior schemes. Applies to both creative processes and appreciation. Adapted to needs of Home Economics group.

AA 178, 179, 180. **House Planning and Architectural Drawing.** Three terms, 2 or 3 hours each term.

Small-house construction, detail drawing, and architectural drafting, with particular reference to the needs of students majoring in Industrial Arts.

AA 290. **Lower Division Painting.** Six terms, 3 hours each term.

First year, elementary studies from still life, principles of fine arrangement in solids and backgrounds, various mediums; second year, advanced studies from still life and from the head. Encourages individual achievement.

AA 291. **Lower Division Drawing.** Six terms, 3 hours each term.

The first year of progress includes the analysis of forms leading to an understanding of essential structure of common objects, casts, and antiques. Problems in simple and direct expression of structure by use of different mediums, adapted to the needs of Industrial Arts group. The second year continues the study of forms and combinations of forms. Elementary study of the human figure. Interrelationships of forms and adaptations of forms in a decorative way.

AA 295. **Lower Division Decorative Design.** Six terms, 3 hours each term.

First year, study of the principles underlying the various arrangements of lines, shapes, neutral tones and colors for purposes of decorative expression. Second year, further problems in decorative arrangements. Building up the student's capacities to plan a design intelligent-

ly for a given purpose and to carry out his designs with increasing powers to criticize himself.

AA 297. **Lower Division Architectural Design.** Three terms, 2 hours each term.

Fundamental principles accompanied by rendered drawings of the orders of architecture, simple facades, and architectural details.

Landscape Architecture

ALL instruction in Landscape design is correlated with the instruction in closely related arts. In addition to the landscape courses, the student is instructed also in plant propagation, soils, surveying, and other practical phases of the profession. The campus constitutes an out-of-door living laboratory of unusual interest and value to students in landscape architecture.

DESCRIPTION OF COURSES

LOWER DIVISION COURSES

LA 179. **Landscape Architecture (Descriptive).** First term, 2 hours.

A lecture course planned to introduce the student to the subject as it is applied to home-ground layouts, city parks, national parks, the wilderness areas, city plans, and modern garden cities. Good taste and general information. No drawing. Two lectures and periodical quiz hours. Professor Peck.

LA 279. **Landscape Architecture.** Any term, 3 hours.

This course is designed to fit the needs of all students. Definite principles controlling layout and organization of different kinds of property are introduced. Enough drafting is done so that the student will learn to express himself in a satisfactory manner. Study is made of problems in improvement work on home grounds, rural and urban. Two two-hour drafting periods; one lecture. Professor Peck.

LA 290. **Lower Division Landscape Design.** Three terms, 2 hours each term.

Design of small residence properties, the ordinary city lot, town-house property, and suburban residence properties involving not more than three acres. Prerequisite: LA 279.

UPPER DIVISION COURSES

LA 326, 327, 328. **Plant Materials.** Three terms, 3 hours each term.

The study of trees, shrubs, vines, and perennials and their uses in plant composition. Professor Peck.

LA 356, 357, 358. **History and Literature of Landscape Architecture.** Three terms, 2 hours each term.

These courses acquaint the student with history and literature of the art. Professor Peck.

LA 359, 360, 361. **Maintenance and Construction.** Three terms, 2 hours each term.

Concise and practical knowledge of the maintenance of parks, estates, cemeteries, and golf courses. Landscape construction work involving the handling of earth, such as golf-course construction, and the building of tennis courts, walks, roads, and water effects. Professor Peck.

LA 379. **Landscape Architecture.** Third term, 3 hours.

For Forestry students. The arrangement of features and elements in ranger stations, recreation areas, state parks, overlooks, and summer-home sites; enough drafting to enable the student to express himself on paper by means of landscape plans. Assigned readings. Two lectures; 1 two-hour drafting period. Professor Peck.

LA 382, 383, 384. **Layout of Small Properties.** Three terms, 2 or 3 hours each term.

Arranged for students in Landscape Maintenance. The city lot, small suburban properties, and other graduated studies of ground arrangement. Sketch plans, finished renderings, and contour problems are presented. Two three-hour laboratory periods. Prerequisite: LA 279. Professor Peck.

LA 390. **Upper Division Landscape Design.** Three terms, 2 hours each term.

Continuation and enlargement of LA 290. Associate Professor Cuthbert.

LA 392, 393, 394. **Planting Plans.** Three terms, 2 hours each term.

Arranged for students in Landscape Maintenance. The drawing of planting plans; estimates of costs; construction and seasonal care of the planting areas worked up by students. Two three-hour laboratory periods. Prerequisite: LA 279, 326, 327, 328, 382, 383, 384. Professor Peck.

Arts and Letters

LOWER division and service courses in Arts and Letters are offered at the State College. By action of the State Board of Higher Education March 7, 1932, all major work in the Oregon State System of Higher Education leading to baccalaureate and advanced degrees in Arts and Letters was confined to the College of Arts and Letters at the University, and lower division work comprising instruction in the freshman and sophomore years was assigned to both the University and the State College.

The lower division instruction in English, modern languages, and speech at the State College constitutes essentially the equivalent of lower division work in these subjects at the University; and students finding it more convenient to spend their freshman and sophomore years at the State College may transfer to the University for their major work without loss of

credit and with fundamental requirements for upper division work in these subjects fully met.

The instruction in the first two years is made as broad and liberalizing as possible, the aim being a general education together with preparation for specialization at the upper division level. The lower division program in Arts and Letters at the State College, besides laying a broad foundation for specialization is intended also to serve the needs of students majoring in other fields. Upper division service courses, prescribed as required subjects or available as electives for students registered in other fields, are also offered at the State College.

English

THE lower division courses in English are intended to supply the training in writing necessary to every educated man, to afford a cultural background for those students who are limited to two years of work in the field of English, and to present the necessary foundation work for the continuation of English as a major at the University.

Literature. The study of English literature begins with an introduction in the form of either a historical presentation of the tradition of English literature or an examination of the motives and ideas of literature. This is followed by a more detailed study of periods, epochs, and centuries of English literary movements; a careful analysis of the chief literary forms such as the novel, drama, and poetry; and a more intensive study of the major authors.

Written English. The purpose of the study and practice of written English is technical accuracy in the fundamental forms of composition, the development of the power of expression, and the survey of special art forms such as versification, play-writing, and short story.

English K. All entering students are required to take an examination in English. Those who fail in this examination are enrolled in a writing course called English K, the object of which is the diagnosis and correction of defects manifested in the placement examination. Those who pass the examination enter the regular freshman course (Eng 111, 112, 113).

COURSES IN LITERATURE

LOWER DIVISION COURSES

*Eng 101, 102, 103. **Literature Survey.** Three terms, 3 hours each term.

A general outline course in the history of English literature. First term: from the beginnings to the seventeenth century. Second term: seventeenth and eighteenth centuries. Third term: nineteenth century. Three lectures or recitations. Not offered 1934-35. Assistant Professor Ordeman.

*Eng 104, 105, 106. **Introduction to Literature.** Three terms, 3 hours each term.

The purpose is to stimulate appreciation and criticism of literature. Study of some masterpieces in ancient, modern, and contemporary

*Students intending to major in English should take either Eng 101-103 or Eng 104-106.

literature. Three lectures or recitations. Professor Peterson, Associate Professor Kierzek, Assistant Professors Ordeman and Colby.

Eng 161. **American Literature.** First or third term, 3 hours.
Study of American literature from its beginnings to the present day. Three lectures or recitations. Professor Peterson and Assistant Professor Ordeman.

Eng 201, 202, 203. **Shakespeare.** Three terms, 3 hours each term.
Study of the important historical plays, comedies, and tragedies. Courses in sequence but may be taken separately. Prescribed for majors. Lectures or recitations. Professors Smith and Peterson.

Eng 261, 262. **Individual Authors.** Second and third terms, 3 hours each term.
Each term devoted to the study of a single author. Lectures or recitations. Professor Smith.

Eng 263. **Great Books.** First term, 3 hours.
Survey of some of the world's great books, including the Bible, the Odyssey, Arabian Nights, Divine Comedy, Autobiography of Benvenuto Cellini, Don Quixote, Pilgrim's Progress, Gulliver's Travels, and Faust. The emphasis is on the contribution each has made to western culture—that is, on elements of enduring greatness. Three lectures or discussion periods. Professor Smith.

Eng 264, 265, 266. **Continental European Literature.** Three terms, 3 hours each term.
The study of Continental European literature in approved translations. Lectures and reports. First term, Romance literature; second term, Germanic; third term, Slavic. Assistant Professor Colby.

Eng 271, 272, 273. **Contemporary Literature.** Three terms, 3 hours each term.
This sequence takes up in successive terms the contemporary American novel, modern drama, and American poetry. Three lectures or recitations. Associate Professor Kierzek.

Eng 274. **The Short Story.** Third term, 3 hours.
The development of the American short story; analysis of recognized masterpieces as well as of the best present-day magazine stories, with the idea of developing critical taste in reading. Professor Peterson.

Eng 275. **The Bible as Literature.** Third term, 3 hours.
Designed to stimulate and enlarge appreciation of the art and beauty of the literature of the Bible. Questions of theology and dogmas of religion are avoided. Assignments include passages which fall under the chief literary types, such as folk-lore, story telling, history, poetry, drama, wisdom literature, oratory, and the essay. Three lectures or recitations. Assistant Professor Baldwin.

Eng 276. **The Novel.** Second term, 3 hours.
A rapid survey of the development of the English novel. Through lectures and assigned readings, the aim is to enrich the student's background of knowledge in the field of the novel and thus to prepare him for critical appreciation of fiction. Professor Peterson.

COURSES IN WRITTEN ENGLISH

LOWER DIVISION COURSES

English K. First or second term, 1 hour.

A one-term course in the mechanics of composition for those who fail to pass the English placement examination. The student must pass the English placement examination or English K before he is permitted to register for any other written English course. Three recitations.

Eng 111, 112, 113. **English Composition.** Three terms, 3 hours each term.

A year-sequence in the fundamentals of English composition and rhetoric, with frequent written themes in the various forms of discourse. Special attention is paid to correctness in fundamentals and to the organization of papers. Prerequisite: English placement examination. Three recitations.

Eng 118. **Technical Report Writing.** Third term, 3 hours.

Study of technical reports with practice in writing them. As far as possible definite application of principles learned is made to specific needs and interests of students having papers in progress during the term. A variety of reports is studied. Assistant Professor Ordeman.

Eng 211. **Essay Writing.** First term, 3 hours.

An advanced course in composition devoted to the study and perfection of style, and to the study of the various forms and models of the essay. Prerequisite: Eng 111, 112, 113. Three recitations. Professor Berchtold.

Eng 212. **Advanced Essay Writing.** Second term, 3 hours.

An advanced study of the essay for those interested in the problems of creative expression and prose style. Prerequisite: Eng 211. Three recitations. Professor Berchtold.

Eng 213, 214, 215. **Short Story Writing.** Three terms, 2 hours each term.

Year-sequence designed to develop proficiency in the art of writing the short story. Prerequisite: consent of instructor. Two recitations. Professor Peterson.

Eng 217. **Business English.** Any term, 3 hours.

A complete review and study of modern practices in business correspondence, organized primarily for Business Administration students. Attention is paid to the analysis and to the writing of all types of correspondence. Prerequisite: Eng 111, 112, 113. Three recitations. Assistant Professor Nelson.

UPPER DIVISION SERVICE COURSE

Eng 324. **English Composition for Teachers.** Third term, 3 hours.

For students expecting to teach English in high schools. Practice in writing and a review of the rules of composition. Prerequisite: Eng 111, 112, 113. Three recitations. Assistant Professor Nelson, Mr. Emery.

Modern Languages

IN the department of Modern Languages instruction is offered in French, German, and Spanish. The lower division and service courses in these languages are intended to meet not only the cultural needs of all stu-

dents but also the foreign language requirements found in scientific and technical curricula and needed in connection with various vocations. The student will find at the State College all courses needed in preparing for major work in the languages as offered at the University.

Students who have had one year's work in a language in high school should register for the third term of the first-year college course, or, with the approval of the instructor, for the second term. Those entering with two units of entrance credit in a language should register for the second-year college course; those with three or more entrance units should register for the course in the literature of the language. Students having other preparation and students entering from colleges offering more or fewer hours per week in a course should confer with the instructor.

COURSES IN GERMAN

LOWER DIVISION COURSES

Ger 1, 2, 3. **First Year German.** Three terms, 4 hours each term.
Rudiments of the language; oral and written exercises; reading and translation of easy prose and poetry. Four recitations. Associate Professor Lewis.

Ger 4, 5, 6. **Second Year German.** Three terms, 4 hours each term.
Grammar, composition, and conversation. Translation of standard German authors. Prerequisite: Ger 1, 2, 3 or one year of college or two years of high school German. Four recitations. Miss Myers.

Ger 101, 102, 103. **German Literature.** Three terms, 3 hours each term.
(Third year German.) Advanced texts are used. Prerequisite: Ger 4, 5, 6 or equivalent. Three recitations. Associate Professor Lewis.

Ger 201, 202, 203. **German Literature.** Three terms, 3 hours each term.
(Third year German.) Advanced texts are used. Prerequisite: Ger 4, 5, 6 or equivalent. Not open to students who have taken Ger 101-103. Three recitations. Associate Professor Lewis.

UPPER DIVISION SERVICE COURSES

(Courses 300-399 are open to lower division students.)

Ger 311, 312, 313. **German Literature.** Three terms, 3 hours each term.
Advanced texts are used. Prerequisite: Ger 4, 5, 6 or equivalent. Not open to students who have taken Ger 101-103 or 201-203. Three recitations. Associate Professor Lewis.

Ger 320, 321, 322. **Scientific German.** Three terms, 3 hours each term.
Recommended to students in science or medicine. Articles on chemistry, physics, biology, anatomy, embryology, comparative anatomy, surgery, and the history of medicine will be read, as well as current clinical literature. Prerequisite: consent of instructor. Three recitations. Associate Professor Lewis.

COURSES IN ROMANCE LANGUAGES: FRENCH

LOWER DIVISION COURSES

RL 1, 2, 3. **First Year French.** Three terms, 4 hours each term.
Grammar, pronunciation, composition, conversation. Translation

of easy French prose and poetry. Four recitations. Associate Professor Kuney.

RL 4, 5, 6. **Second Year French.** Three terms, 4 hours each term.
Review of grammar, composition, conversation, reading of modern French authors. For Engineering and Science students, arrangements are made whereby in one section training is given also in scientific vocabulary. Prerequisite: RL 1, 2, 3 or one year of college or two years of high school French or equivalent. Four recitations. Associate Professor Kuney.

RL 101, 102, 103. **French Literature.** Three terms, 3 hours each term.
(Third year French.) Reading of masterpieces of various periods. A general survey of French literature. Prerequisite: two years of college French or the equivalent. Three lectures or recitations. Associate Professor Kuney.

RL 201, 202, 203. **French Literature.** Three terms, 3 hours each term.
(Third year French.) Reading of masterpieces of various periods. A general survey of French literature. Prerequisite: two years of college French or the equivalent. Not open to students who have taken RL 101-103. Three lectures or recitations. Associate Professor Kuney.

UPPER DIVISION SERVICE COURSES

RL 311, 312, 313. **French Literature.** Three terms, 3 hours each term.
(Third year French.) Reading of masterpieces of various periods. A general survey of French literature. Prerequisite: two years of college French or the equivalent. Not open to students who have taken RL 101-103 or RL 201-203. Three lectures or recitations. Associate Professor Kuney.

COURSES IN ROMANCE LANGUAGES: SPANISH

LOWER DIVISION COURSES

RL 11, 12, 13. **First Year Spanish.** Three terms, 4 hours each term.
Grammar, composition, conversation, translation of easy prose. Four recitations. Associate Professor Martin.

RL 14, 15, 16. **Second Year Spanish.** Three terms, 4 hours each term.
Review of grammar, composition, conversation, reading of modern Spanish authors. For Business Administration students at least one section is conducted with emphasis on a commercial and industrial vocabulary. Prerequisite: RL 11, 12, 13 or one year of college or two years of high school Spanish. Four recitations. Associate Professor Martin.

RL 107, 108, 109. **Spanish Literature.** Three terms, 3 hours each term.
(Third year.) Reading of masterpieces of various periods. A general survey of Spanish literature. Prerequisite: two years of college Spanish or the equivalent. Three lectures or recitations. Associate Professor Martin.

RL 207, 208, 209. **Spanish Literature.** Three terms, 3 hours each term.
(Third year.) Reading of masterpieces of various periods. A general survey of Spanish literature. Prerequisite: two years of col-

lege Spanish or the equivalent. Not open to students who have taken RL 107-109. Three lectures or recitations. Associate Professor Martin.

UPPER DIVISION SERVICE COURSES

RL 341, 342, 343. **Spanish Literature.** Three terms, 3 hours each term. (Third year Spanish.) Reading of masterpieces of various periods. A general survey of Spanish literature. Prerequisite: two years of college Spanish or the equivalent. Not open to students who have taken RL 107-109 or RL 207-209. Three lectures or recitations. Associate Professor Martin.

Speech

INSTRUCTION in speech has for its purpose to aid students in the development of clear, original thinking and to give training in the correlation, organization, and public presentation of knowledge gained through study and experience. Much drill and criticism are given on organization of material, on platform work, and on the principles that underlie effective reading and speaking. The training goes far in helping to overcome self-consciousness and in aiding to build up a strong personal address.

Courses in interpretation and community drama are conducted not only as a means of rounding out the speech training, but also as an aid to prospective teachers and other community leaders in the directing of plays and in the making of stage-settings, costumes, and other necessary equipment.

Courses in speech are required in a number of technical curricula. Such training is regarded as of great value to all students preparing for leadership in any field, including prospective teachers of vocational subjects, agricultural agents, home demonstration agents, club leaders, homemakers, and others.

Many plays, intramural and intercollegiate debates, extempore speaking and oratorical contests take place on the campus each year, and much individual attention is given to students who wish to prepare for such work.

Speech Correction. A clinic is maintained by the department for those who are handicapped with the various speech impediments, such as stammering, lisping, nasality, and the like. Advice and treatment are given for both organic and functional difficulties. An attempt is made to understand the factors in the life of the individual which have caused his emotional difficulties, and when they are located an attempt is made to eradicate them. For each student wishing to take this work individual conferences are given during which his speech difficulties receive special consideration.

DESCRIPTION OF COURSES

LOWER DIVISION COURSES

Sp 111, 112, 113. **Extempore Speaking.** Three terms, 3 hours each term.

First term: practice in the development and presentation of speeches on topics of special interest to the students; voice training; vocabulary building and pronunciation; some study of gesture, bearing, and elements of effectiveness in presentation; criticism on organization of material; organization is stressed. Second term includes practice in the construction and presentation of original speeches; voice training, and study of gesture and elements of effectiveness in delivery; criticism on organization and presentation; delivery is stressed. Third term: intensive drill in the technique of delivery, with a consideration of occasional speeches. Professor Mitchell, Associate Professor Wells, Assistant Professor Knoll.

Sp 121, 122, 123. **Interpretation.** Three terms, 3 hours each term.

Practice in the interpretation of different types of literature; literary analysis; pantomime; diction; correct breathing; voice training; correction of erroneous habits of speech; overcoming artificiality, affectation and self-consciousness. In the first term, interpretation of narrative literature and outline analysis of material are stressed; in the second term, monologue and other types of impersonation including the dramatized story; in the third term, the interpretation of poetry, psychology of the audience, expressive voice. Sp 121 will be given first and second terms; Sp 122 will be given second and third terms, and Sp 123 will be given third term. Prerequisite: consent of instructor. Three recitations. Associate Professor Barnes, Mr. Young.

Sp 211, 212, 213. **Oratory Squad.** Three terms, 2 hours each term.

Preparation and delivery of original manuscript speeches. Consent of instructor must be obtained before registration. Credit in only one of these courses may be earned in any academic year. These courses are used as a means of preparation for intercollegiate competition. Prerequisite: Sp 111, 221. Two recitations. Associate Professor Wells.

Sp 214, 215, 216. **Extempore Speaking Squad.** Three terms, 2 hours each term.

Intensive drill in extempore speaking in preparation for intercollegiate competition. Consent of instructor must be obtained before registration. Credit in only one of these courses may be earned in any academic year. Prerequisite: Sp 111, 112. Two recitations. Associate Professor Wells.

Sp 217, 218, 219. **Debating.** Three terms, 2 hours each term.

Application of the principles of argumentation to debating; analysis and brief-drawing. Each student participates in several debates. Criticism on delivery and on the selection and handling of evidence in both constructive argument and refutation. Assigned readings. Credit in only one of these courses may be earned in any one year. Prerequisite: Sp 111, 220, and consent of instructor. Two recitations. Professor Mitchell, Assistant Professor Knoll.

Sp 220. **Argumentation.** First or third term, 3 hours.

Consideration of the theory of argumentation; practical work in brief-drawing, collection and handling of evidence, and construction of argumentative speeches. Each student works out several briefs and delivers several speeches. Criticism on presentation and construction. Prerequisite: Sp 111. Three recitations. Associate Professor Wells.

Sp 221. **Speech Composition.** First term, 3 hours.

Text-book work, study of models, lectures, composition exercises, the writing of a term speech. This course is maintained as an aid to a mastery of effective style in speaking. It is recommended that students take Sp 112 before electing this course. Prerequisite: Sp 111. Three recitations. Professor Mitchell, Associate Professor Wells.

Sp 222. **The Extended Address.** Third term, 3 hours.

Construction and presentation of the extended address. Each student prepares and presents several long speeches. The psychology of public speaking involving the principles of persuasion is considered. Assigned readings. Students should confer with instructor before electing this course. Section limited to ten students. Prerequisite: Sp 111, 112. Three recitations. Professor Mitchell.

Sp 231. **Parliamentary Procedure.** Third term, 3 hours.

This course covers the history and principles of parliamentary usage and gives each student an opportunity to serve as chairman and secretary of several meetings during the term. Much practice is afforded in the presentation of motions and in impromptu speaking under the supervision of a critic. Assigned readings. Three recitations. Associate Professor Wells.

Sp 234. **Radio Speech.** Any term, 3 hours.

Voice and diction as they pertain to speaking over the radio; standards of American speech; preparation of the radio speech and continuity; program building; studio technique; radio regulations. Practice before the microphone and in the broadcasting of dramatic and other types of material over KOAC. Prerequisite: Sp 111, 121, or consent of instructor. Professor Mitchell, Associate Professor Barnes.

Sp 244. **Stagecraft and Lighting.** Any term, 3 hours.

In this course consideration is given to the problems involved in the construction of scenery and stage properties. A study is made of lighting and lighting equipment. Practical experience is gained in lighting, stage management, and the construction of different types of settings, including suggestive and impressionistic. Mr. Young.

Sp 247, 248, 249. **Community Drama.** Three terms, 3 hours each term.

Designed to meet the needs of community leaders. The community drama idea; plays suitable for use in school or community; the staff; make-up; stage setting and costumes; modern tendencies in stage setting and costuming; directing and play production. Groups of one-act plays are produced at the end of the first term and a long play during the second term. Laboratory work in conducting rehearsals and producing plays. Students are given actual experience in producing plays effectively at little expense. Prerequisite: consent of instructor. Associate Professor Barnes.

Business Administration

LOWER division and service courses in Business Administration are offered at the State College. By action of the State Board of Higher Education, March 7, 1932, the School of Business Administration at the University and the School of Commerce at the State College were consolidated into the School of Business Administration. All major work in the Oregon State System of Higher Education leading to baccalaureate and advanced degrees in Business Administration was confined to the School of Business Administration at the University, and lower division work comprising instruction in the freshman and sophomore years was assigned to both the University and the State College. Secretarial Science was allocated at the State College under the administration of the Dean and Director of Business Administration. In May 1933, the work in Secretarial Science was organized by authority of the State Board into a four-year curriculum (see pages 309-312).

The instruction in Business Administration at the State College comprises (1) lower division courses in business administration for freshman and sophomore students parallel to those at the University, together with service courses in business administration as needed by students at the State College majoring in other fields; (2) a four-year degree curriculum in secretarial science at the State College, with the necessary courses in secretarial science (see pages 309-312).

Business Training Demands Broad Foundation. Sound training in business administration necessitates a wide knowledge of economics, law and liberal arts, and technical business procedure. Through careful correlation between the allied courses in economics, law, liberal arts, and business administration, the School of Business Administration bases its training in business technique on a broad foundation of this character.

Lower Division Curricula. Since the lower division work in Business Administration at the State College constitutes the full equivalent of the lower division work at the University, students finding it more convenient to spend their freshman and sophomore years at the State College may transfer to the University for their major work without loss of credit and with fundamental requirements for upper division work fully met. At the upper division and graduate level the student may select one of a number of fields of specialization. Programs of study are worked out for lower division students according to their special objectives.

Facilities. The instruction in Business Administration at the State College is centered in Commerce Hall, in which are located classrooms and laboratories for instruction in business subjects. Special facilities comprise the latest office appliances and fixtures including the standard types of typewriters, duplicators, mimeographs, dictaphones, mimeoscopes, filing cabinets, adding machines, bookkeeping machines, and accounting machines. All appliances and equipment are kept in constant repair. Students are taught how to keep in repair the appliances they use.

Description of Courses

COURSES IN BUSINESS ADMINISTRATION

LOWER DIVISION COURSES

BA 111, 112, 113. **Constructive Accounting.** Three terms, 4 hours each term.

An introduction to the field of accounting and business administration. Technique of account construction and preparation of financial statements. Application of accounting principles to practical business problems, including a study of proprietorship from the standpoint of the single owner, the partnership, and the corporation. Required of all majors and prerequisite to all advanced work in business administration. Professor Bosworth, Associate Professor Robinson, Assistant Professor Kelley.

BA 211. **Retail Accounting.** First term, 3 hours.

A study of accounting records peculiar to retail stores. Practice sets are assigned for the purpose of familiarizing the student with the necessary forms and retail accounting routine. Prerequisite: BA 111, 112, 113. Professor Bosworth, Associate Professor Robinson.

BA 212. **Principles of Cost Accounting.** Second term, 3 hours .

A consideration of the basic principles of cost accounting, departmentalization, expense allocation, and the differences to be noted between accounting systems with which a cost system is tied in and accounting systems with no cost system involved. Problems and practice sets furnish the student with a working familiarity. Prerequisite: BA 111, 112, 113, or BA 385, 386. Professor Bosworth, Associate Professor Robinson.

BA 213. **Analysis of Financial Statements.** Third term, 3 hours.

Managerial accounting, including accounting theory and practice for effective management and control of industrial and trading concerns. Emphasis is laid on the preparation, analysis, and interpretation of balance sheets and operating reports. Prerequisite: BA 111, 112, 113, 211, 212. Professor Bosworth, Associate Professor Robinson.

BA 221. **Elements of Organization and Production.** First or second term, 4 hours.

A consideration of the principles of the science and philosophy of management as applied to industrial concerns. Functional management, including time study records, standardization, and planning, as applied by Taylor and subsequent industrial managers. Required of all students majoring in Business Administration. Assistant Professor Kelley.

BA 222. **Elements of Finance.** Any term, 4 hours.

A brief survey of financial institutions with attention to the possible use of each by the business man. A further study of the financial problems involved in the launching of a business enterprise, expansion, budgetary control, credits and collections, borrowing and management of earnings. Required of all students majoring in business administration. Prerequisite: BA 111, 112, 113, or equivalent. Associate Professor LeMaster, Assistant Professor Kelley.

BA 223. **Elements of Marketing.** Third term, 4 hours.

A study of the methods, policies, and problems involved in marketing raw materials and manufactured products. Deals with private and cooperative marketing channels, auctions, exchanges, primary and secondary middlemen, and such marketing functions as demand creation, assembly, standardization, packaging, financing, risk-taking, distribution, and market news. Required of all students planning to major in Business Administration. Assistant Professor Kelley.

BA 256. **Business Law.** Any term, 4 hours.

A general course in business law correlating fundamental principles with selected cases illustrating their application to typical business situations. The law and its relation to business. Formation of contracts, offer, acceptance, consideration, performance, interpretation and discharge of contracts. Special types of contracts, insurance and suretyship. Associate Professor LeMaster.

BA 257. **Business Law.** Any term, 4 hours.

The law of negotiable instruments. Types of negotiable instruments, creation of negotiable instruments, consideration, delivery, rights and liabilities of parties. The law of principal and agent, creation of the agency, etc. The law of personal property, sales, bailments, and chattel mortgages. Associate Professor LeMaster.

BA 258. **Business Law.** Any term, 4 hours.

The law of business organization, partnerships, corporations, unincorporated associations, business trusts, and joint stock companies. The law of real property, real property mortgages, landlord and tenant, and mechanics' lien law. Associate Professor LeMaster.

UPPER DIVISION SERVICE COURSES

BA 361. **Accounting Fundamentals.** First or second term, 3 hours.

Principally for students in Agriculture. Deals with the basic principles of accounting rather than technique, special consideration being given to the accounting problems encountered in the various fields of agriculture with some emphasis on determination of costs of operation. One lecture; 2 recitations. Associate Professor Robinson.

BA 385. **Principles of Accounting for Engineers.** Any term, 3 hours.

An abbreviated course covering the general principles of accounting, designed especially for non-business students. Emphasis is placed on accounting principles, rather than technique. The ultimate aim is to prepare the student to read and interpret accounting facts, rather than to construct accounts. Not open to Business Administration students. Associate Professor Robinson.

BA 386. **Accounting for Engineers and Foresters.** Second or third term, 3 hours.

A continuation of BA 385 covering the general principles of accounting. Not open to Business Administration students. Associate Professor Robinson.

BA 403. **Special Problems for Engineers and Foresters.** One to 5 hours each term.

An opportunity to do supervised individual work in some field of special application and interest. Subjects chosen must be approved by major professor. Prerequisite: senior or graduate standing. Staff.

BA 413. **Production Management.** First term, 4 hours.
An analysis of the problems of production, factory organization, and factory management. Studied from the point of view of the production manager. Prerequisite: BA 221. Assistant Professor Kelley.

BA 414. **Personnel Management.** First term, 4 hours.
Principles of scientific management, job analysis, systematic hiring, placing and promoting, methods of wage payment, turnover problems, labor's participation in management, the public's concern in such participation. Recommended for seniors in Business Administration or Forestry and juniors and seniors in Engineering who expect to employ and manage men. Three recitations. Professor Bosworth.

BA 463. **Investments.** Third term, 3 hours.
A study of sound and unsound investments; markets and the price of securities; their demand and supply; the computing of earnings; government, state, county, municipal, and corporation bonds and real estate loans as investment securities; the stock exchange. Assistant Professor Kelley.

BA 469. **Business and Agricultural Statistics.** First term, 3 hours.
Sources of business and agricultural statistics; study of statistical devices used in fields of business and agriculture, such as summary numbers, indices of trends, and seasonal variation; and problems involved in comparing statistical results. Three recitations. Professor Bosworth.

BA 470. **Business Statistics.** Second term, 3 hours.
Considers the causes of periods of alternate prosperity and depression; existing methods of predicting cyclical changes; suggested remedies for diminishing the range of business fluctuations.

BA 494. **Cost Accounting for Industrials.** Second or third term, 3 hours.
The principles and methods of factory cost accounting, with application to practical problems. Phases of industrial management necessary to the installation and operation of a modern cost system. Prerequisite: BA 386. Professor Bosworth, Associate Professor Robinson.

Journalism

LOWER division and service courses in Journalism are offered at the State College. By action of the State Board of Higher Education April 30, 1932, all major work in the Oregon State System of Higher Education leading to baccalaureate and advanced degrees in Journalism was confined to the School of Journalism at the University, and lower division work comprising instruction in the freshman and sophomore years was assigned to both the University and the State College.

The lower division instruction in journalism at the State College constitutes essentially the equivalent of lower division work at the University; and students finding it more convenient to spend their freshman and soph-

omore years at the State College may transfer to the University for their major work without loss of credit and with fundamental requirements for upper division work fully met.

The elementary courses, in addition to furnishing a certain cultural background in newspaper methods, are intended to introduce students to the fundamentals of news writing. These courses also enable students to get additional benefit out of work on THE DAILY BAROMETER, student newspaper, and serve to some extent as a training school in this work in an endeavor to keep student publications on a high plane. Journalistic instruction is also given which is designed to train students enrolled in the technical and professional schools to write competently for newspapers and magazines on the subjects or in the fields in which they are specializing. These courses are intended to meet the needs of a large number of persons who, either in public service or in private life, have occasion to prepare material for the press on industrial or technical subjects. Training is also offered in the popularization of scientific material for the press.

A full journalistic training combined with a technical specialty may be arranged in a four- or five-year curriculum utilizing the facilities at both the University and the State College.

DESCRIPTION OF COURSES

LOWER DIVISION COURSES

J 111, 112. **Elementary Journalism.** Two terms, 3 hours each term.

Fundamental principles of news writing. Intended to introduce to the students of the various technical schools the journalistic style of writing and to acquaint them with the workings of the press, both general and technical. Required for eligibility to the editorial staffs of student publications. Special sections for technical schools where enrollment justifies.

J 211. **Copyediting.** First or third term, 3 hours.

Copy reading, head writing, proof reading, and make-up. Actual experience is given in editing copy for publication. Required for all students in advanced positions on the Barometer. Prerequisite: J 111.

J 223. **Editorial Writing.** Second term, 3 hours.

Materials, style, and arrangement of periodical editorials are considered. Training is given in writing editorials. Principles of policy and ethics are studied and applied. The make-up of the editorial page of farm and trade journals is given attention. Prerequisite: J 111.

UPPER DIVISION SERVICE COURSES

J 312. **Special Feature Articles.** First or third term, 3 hours.

Writing of special articles along the line of the student's own major. Study of the media of such articles. Practice in popularization of scientific material. Prerequisite: J 111.

J 313. **Public Information Methods.** Second term, 3 hours.

Intended for teachers of science and vocational subjects. Planning and executing of informational campaigns through such media as newspapers, posters, radio, circular letters. Methods of informing

public of school events, progress, etc. Supervision of high school publications. Prerequisite: J 111.

J 314. **Technical Writing.** One term, 3 hours.
Writing and editing of popular and scientific bulletins. Preparing reports and writing articles for scientific publications. Preparing radio manuscripts. Planning and executing informational campaigns on scientific material. Intended primarily for research workers in fields of agriculture, home economics, engineering, and other technical fields and for extension workers and college teachers in fields of agriculture and home economics. Prerequisite: J 111.

Music

THE courses in Music at the State College are service courses for students in the various major curricula at the institution. No degrees or diplomas are conferred in Music.

Music is recognized at the State College as of fundamental value in the development of personality, enriching the life of every man or woman who learns to appreciate it. In the training of every young woman preparing for homemaking, in supplementing the resources of the teacher and others, music is regarded as of special importance. In order that music may contribute its full share in the education of the students attending the College, the institution maintains a noteworthy program of musical activities, together with exceptional opportunities for music study. The faculty in Music has been selected with great care, numbering among its members musicians of the highest rank, who, through study and concert work in the large musical centers of this country and Europe, bring to their students the highest ideals prevailing in these centers. The assistant instructors employ the same methods as their superiors, thus preparing the less advanced students for effective study under the principal instructors when they later enter upon more advanced study.

Training and experience in performance before the microphone of radio station KOAC are valuable features in all phases of the work.

Scholarships. A number of free scholarships for private study are available to worthy, talented pupils. Examinations for these are held during the first week of any term. Application must be made to the Director.

Musical Organizations. Musical organizations at the College, including the R. O. T. C. Band, the Orchestra, the Glee Club, the Madrigal Club, and the Mandolin Club, are described on another page.

Concerts. Under the direction of the faculty in Music a series of Sunday afternoon Vesper Concerts is presented throughout the college year. The Orchestra, the Glee Club, and the Madrigal Club give programs both entertaining and educational in character. Recitals by members of the faculty and by the more advanced students are also given. These Vesper Concerts contribute materially to the spiritual and cultural life of the entire student body of the State College.

Courses. Instruction in music is intended for students pursuing one of the degree curricula who take music courses as electives. A maximum of twelve credits in applied music may be counted toward a degree in the several degree-granting schools. Credits in music theory may be elected subject to the approval of the dean of the school in which the student is registered.

Students enter the State College with all degrees of previous proficiency in music. Consequently a considerable range of music courses has been provided. For students carrying a heavy program of required work, many of the courses permit carrying from one to three hours credit, while for students in curricula providing opportunity for more elective work, more credit may be carried with the approval of the Director, as determined by the individual student's previous preparation.

Students who have had sufficient preparation may pursue advanced study in Music under one of the principal instructors. So far as their music work is concerned such students are artist students of the Music faculty; they are registered in the State College only in so far as they may be pursuing regular courses, either as carrying a full major curriculum in one of the degree-granting schools or as optional or special students, not candidates for a degree. Artist students may register in the advanced courses. Violin or Singing students are expected to take, or to have had, at least one year of piano instruction.

Individual Instruction. Courses are offered in all phases of applied music at the State College, including piano, organ, singing, violin, and violoncello, plectral instruments, and band instruments. Students may study any phase of applied music throughout four years, taking from one to six term hours in any term according to the course pursued. The maximum credit in applied music acceptable toward a B.A. or B.S. degree is twelve term hours.

At all stages of instruction in applied music, training is given in analysis of material.

PIANO. Instruction in piano is offered to meet the needs of students in various stages of proficiency from the beginner to the artist student. Thorough foundation in technique is developed on a highly scientific basis. Monthly group meetings of the more advanced students give an opportunity to accustom the students to play before others. Students may take from one to six term hours each term and are required to devote from one to three hours daily to practice.

ORGAN. Students with adequate pianistic preparation may pursue courses in organ playing. A standard two-manual Kimbal pipe-organ is available for practice purposes at reasonable rates. The work is offered on the basis of two term hours each term covering one or two private lessons a week and one or two hours daily practice.

SINGING. Students who wish to develop their singing voices are offered excellent opportunity for instruction. Each student is treated individually and is assigned exercises and songs according to his stage of vocal development. For the more advanced students opportunity to sing before various campus audiences and over the radio is provided. Students may take from one to four term hours each term, requiring from one-half to two hours daily practice.

VIOLIN AND VIOLONCELLO. Instruction in violin and violoncello is available to suit the requirements of the student, from beginner to finished artist. To those of adequate ability opportunity is afforded to play in the symphony orchestra and in similar groups and to appear as soloists before various campus audiences and over the radio. Students may take from one to six term hours each term, requiring from one to three hours daily practice.

PLECTRAL INSTRUMENTS. Mandolin, guitar and banjo instruction is available at reasonable cost. Students reaching a fair degree of proficiency have opportunity to join the Mandolin and Guitar Club, which meets weekly for ensemble playing. Students may take two term hours each term, requiring one hour daily practice.

BAND INSTRUMENTS. Courses in band instruments include cornet, trombone, clarinet, oboe, bassoon, baritone, saxophone, flute, Bb bass, Eb bass, drums, French horn, bells, and xylophone.

Regulations. Students are expected to consult the Director regarding regulations governing registration, attendance, public performance of music students, etc.

Equipment. The entire top floor of the Administration Building is devoted to studios, offices, and other needs of the work in music. Ample facilities for teaching and practicing are provided.

Tuition. Private lessons are one-half hour in length. Class lessons are fifty minutes in length. All fees are payable strictly in advance.

	Per term: One lesson a week	Per term: Two lessons a week
Piano		
Mrs. Petri	30.00	60.00
Mr. Arnold	18.00	36.00
Miss Gray	15.00	30.00
Organ		
Mr. Arnold	24.00	48.00
Singing		
Mr. Petri	30.00	60.00
Violin, Viola, Cello		
Mr. Underwood	30.00	60.00
Miss Bowden	18.00	36.00
Mr. Halbert	18.00	36.00
Banjo, Guitar and other Small Strings		
Miss Bowden	15.00	30.00
Band Instruments		
Mr. Beard	15.00	30.00
Theory and Allied Subjects		
Private Instruction	30.00	60.00

Piano, Organ, and Orchestra Instrument Rental.

Piano	
½ hour a day, a term (for Singing students only)	$ 3.00
1 hour a day, a term	5.00
1 hour a day, a term (without use of piano)	2.50
2 hours a day, a term	7.50
3 hours a day, a term	10.00
4 hours a day, a term	12.50

Orchestra Instruments. Violas, cello, bassoon, and oboe are available for practice purposes for $3.00 per term for one hour weekly. Bassoon and oboe players must furnish their own reeds, and viola and cello students must replace broken strings with new ones. Any damage done to the instruments through carelessness or negligence of student must be repaired at student's expense.

Organ

Rental per hour ..... $ 0.25

COURSES IN THEORY

Mus 111, 112, 113. **Harmony I, II, III.** Three terms, 3 hours each term.

Laws of overtone; origin and history of diatonic scale system; scale drills; melodic principles developed from tetrachord relations, and awakening of harmonic consciousness; triads, dominant and diminished seventh chords; recognition of by-tones; keyboard drills; ear drills; free harmonization of melodies; original melody writing; simple transposition and modulation. Three periods.

Mus 120. **Appreciation of Music.** Second term, 1 hour.

Illustrated lectures, using the phonograph and other means, on how to listen to music, instrumental and vocal; how to instruct a child in the appreciation of good music. Required in Home Economics; elective to others. One lecture.

Mus 127, 128, 129. **Theory of Music.** Three terms, 1 hour each term.

Musical terminology and embellishments; acoustics; Pythagorean, mean tone, and well-tempered systems of tuning; elements of musical form; song form, suite, sonata, symphony, oratorio, opera, etc.

Mus 147, 148, 149. **Sightsinging and Ear-Training.** Three terms, 1 hour each term.

Writing from tonal dictation, singing melodies, rhythmic problems; rhythmic dictation. One recitation.

Mus 211, 212, 213. **Harmony IV, V, VI.** Three terms, 3 hours each term.

Continuation of Mus 113. Use of secondary chords in free harmonization of melodies; ear perception of these as substitutes for primary chords; four-voice treatment of original melodies. Free harmonization of melodies that modulate; ear drills in recognition of key changes; keyboard modulation from chord patterns. Two periods.

Mus 221, 222, 223. **History of Music.** Three terms, 2 hours each term.

Evolution of music from the ancient and medieval systems; the Gregorian Chant; the classical period through Bach and Beethoven; the classical musical forms; the romantic and modern periods; the opera. The lectures are liberally supplemented through the use of the phonograph and other means. Prerequisite: Mus 127, 128, 129. Two lectures.

Mus 290. **The College Chorus.** Three terms, 1 hour each term.

For students who can pass the necessary vocal test. Glee and Madrigal Club. Three periods each week.

Mus 311. **Strict Counterpoint.** First term, 3 hours.

Analysis of Bach fugues continued. Prerequisite: Mus 213. Two periods.

Mus 312. **Canon and Fugue.** Second term, 3 hours.
Prerequisite: Mus 311. Two periods.

Mus 313. **Modern Harmony.** Third term, 3 hours.
Modern interval successions; modern chord structure and resolution; scales other than diatonic; free harmonization of melodies with contrapuntal voice written in. Prerequisite: Mus 312. Two periods.

Mus 390. **The College Orchestra.** Three terms, 1 hour each term.
For students who play orchestral instruments and who can pass the necessary test. Three periods each week.

Mus 411. **Modern Harmony.** First term, 3 hours.
Continuation of Mus 313. Dual chord structure; lack of tonality; lack of melody and definite form traced and analyzed. Prerequisite: Mus 313. Two periods.

Mus 412, 413. **Composition.** Second and third terms, 3 hours each term.
Setting of poems chosen at first by the teacher, later by the student; original composition in old dance forms. Original sonata and any other creative work suitable to the powers of self-expression of the student, particularly for his own chosen instrument. Two periods.

Mus 421. **Pedagogy.** Second term, 1 hour.
For students in Piano or Violin. Upbuilding of comprehensive musicianship; teaching to memorize consciously in form; psychology of cultivating earnest effort in pupils; inculcating a sense of joy in earnest effort; weighing and sifting teaching material. One period either private or class instruction, as arranged.

Mus 422. **Orchestration.** Any term, 2 hours.
Course offered to enable the student to understand the tonal compass, proper grouping of all instruments employed in the present symphony orchestra. Practice in reading scores. Practical arranging of music for varied instrumental combinations. Prerequisite: Mus 127-129, 221-223, 411-413. One private or class instruction period, as arranged.

Mus 441, 442, 443. **Band Conducting.** Three terms, 2 hours each term.

INDIVIDUAL INSTRUCTION COURSES

Mus 154, 155, 156. **Piano.** Three terms, 2 to 6 hours each term.
Individual instruction. One to 3 hours daily practice.

Mus 157, 158, 159. **Organ.** Three terms, 2 hours each term.
One or 2 private lessons, 1 or 2 hours daily practice.

Mus 161, 162, 163. **Singing.** Three terms, 1 to 4 hours each term.
One or 2 private lessons, ½ to 2 hours daily practice.

Mus 164, 165, 166. **Violin.** Three terms, 2 to 6 hours each term.
One or 2 private lessons, 1 to 3 hours daily practice.

Mus 167, 168, 169. **Plectral Instruments.** Three terms, 1 or 2 hours each term.
Individual instruction in mandolin, guitar, and banjo. One or 2 private lessons, 1 hour daily practice.

Mus 171, 172, 173. **Band Instruments.** Three terms, 2 hours each term.
Individual instruction. In registering, students should write the name of the instrument in parentheses following course title—e.g., *Mus 171. Band Instruments (Cornet)*. Instruction is given in cornet, trombone, clarinet, oboe, bassoon, baritone, saxophone, flute, BBb bass, Eb bass, drums, French horn, bells, xylophone, and other instruments.

Mus 254, 255, 256. **Piano.** Three terms, 2 to 6 hours each term.
Continuation of Mus 156.

Mus 257, 258, 259, **Organ.** Three terms, 2 hours each term.
Continuation of Mus 159.

Mus 261, 262, 263. **Singing.** Three terms, 1 to 4 hours each term.
Continuation of Mus 163.

Mus 264, 265, 266. **Violin.** Three terms, 2 to 6 hours each term.
Continuation of Mus 166.

Mus 267, 268, 269. **Plectral Instruments.** Three terms, 1 or 2 hours each term.
Continuation of Mus 169.

Mus 271, 272, 273. **Band Instruments.** Three terms, 2 hours each term.
Continuation of Mus 173.

Mus 354, 355, 356. **Piano.** Three terms, 2 to 6 hours each term.
Continuation of Mus 256.

Mus 357, 358, 359. **Organ.** Three terms, 2 hours each term.
Continuation of Mus 259.

Mus 361, 362, 363. **Singing.** Three terms, 1 to 4 hours each term.
Continuation of Mus 263.

Mus 364, 365, 366. **Violin.** Three terms, 2 to 6 hours each term.
Continuation of Mus 266.

Mus 367, 368, 369. **Plectral Instruments.** Three terms, 1 or 2 hours each term.
Continuation of Mus 269.

Mus 371, 372, 373. **Band Instruments.** Three terms, 2 hours each term.
Continuation of Mus 273.

Mus 454, 455, 456. **Piano.** Three terms, 2 to 6 hours each term.
Continuation of Mus 356.

Mus 457, 458, 459. **Organ.** Three terms, 2 hours each term.
Continuation of Mus 359.

Mus 461, 462, 463. **Singing.** Three terms, 1 to 4 hours each term.
Continuation of Mus 363.

Mus 464, 465, 466. **Violin.** Three terms, 2 to 6 hours each term.
Continuation of Mus 366.

Mus 467, 468, 469. **Plectral Instruments.** Three terms, 1 or 2 hours each term.
Continuation of Mus 369.

Mus 471, 472, 473. **Band Instruments.** Three terms, 2 hours each term.
Continuation of Mus 373.

Religion

ESTABLISHMENT of a chair of Religion at the State College was authorized in 1928, and the first courses were offered in the fall term of 1928-29. While the College has given cordial encouragement to the inauguration of instruction in Religion open to all the students of the institution, the Department of Religion is sponsored and financed entirely by private auspices and is administered by a board of control composed of College leaders and representatives of the religious interests of the state. The Department of Religion is non-sectarian in spirit and organization. The instruction is organized according to the same standards of authoritative scholarship demanded in the other departments throughout the institution.

The purpose of the Department of Religion is threefold:

(1) The courses in Religion seek to develop an appreciation of the nature and processes of religion in the light of conditions affecting life today, thus enabling students to make such adjustments as will vitalize religion for them.

(2) The courses are therefore determined for the most part by the needs of the larger group of students at the College, who are preparing for service in the fields of engineering, agriculture, home economics, teaching, business, etc.

(3) Special attention is given to the religious training of those students who anticipate lay-leadership in the churches of their local communities, as well as to those who plan to enter social service or the religious vocations, such as missionary work, the ministry, directors of religious education, pastor's assistant, professional leadership of religious organizations, etc.

DESCRIPTION OF COURSES

LOWER DIVISION COURSES

R 211. **The New Testament and Its Historical Background.** Second term, 2 hours.
Special attention is given to the times and conditions out of which the New Testament writings came and the problems which gave rise to the Christian movement. Two recitations. Professor Warrington.

R 220. **The Sermon on the Mount.** First term, 1 hour.
An intensive study of a limited New Testament passage. Consideration is given to the content of Jesus' teaching as embodied in the selected passage, and to the non-technical method of Bible study. One recitation. Professor Warrington.

R 225. **The Prophets and Their Messages.** Third term, 1 hour.

The early Hebrew prophets as heralds of a new day, spokesmen of a new idealism; significance of the prophets and the value of their messages for the present day. One recitation. Professor Warrington.

Eng 275. **The Bible as Literature.** Third term, 3 hours.

Given by the department of English. Designed to stimulate and enlarge appreciation of the art and beauty of the literature of the Bible. Questions of theology and dogmas of religion are avoided. Assignments include passages which fall under the chief literary types, such as folk-lore, story telling, history, poetry, drama, wisdom literature, oratory, and the essay. Three lectures or recitations. Assistant Professor Baldwin.

UPPER DIVISION COURSES

R 370. **Principles of Religious Leadership.** Third term, 2 hours.

The class is open only to those on the campus or in the local community who are engaged, during the term, in some religious activity. In the theory work consideration is given to the psychology of human nature, work with individuals, group thinking, social conditions determining program, value of social activities, place of the Bible in religious education, and similar topics. Two recitations. Not offered 1934-35. Professor Warrington.

R 461. **Religious Orientation.** First term, 3 hours.

A study of the present status of religion; the effect upon religious thought of the new scientific discoveries and significant trends in present-day life; such questions will be discussed as the nature and function of religion in a world of change, the basis of authority in religion, evaluation of the concept of God. Three lectures. Professor Warrington.

R 462. **History of Great Religions.** Second term, 3 hours.

A comparative study of the religions that command a large following today, such as Hinduism, Buddhism, Confucianism, Judaism, Christianity, and Islam. It is intended to introduce the student to the essential facts about each religion studied. Three lectures. Professor Warrington.

R 463. **Psychology of Religion.** Third term, 3 hours.

The bearing of psychology upon religious thought and life; the effects upon human personality of such religious processes as faith, prayer, worship; the function of these as noted in a study of such modern leaders as Gandhi, Schweitzer, and Kagawa. Three lectures. Professor Warrington.

Social Science

LOWER division and service courses in Social Science are offered at the State College. By action of the State Board of Higher Education March 7, 1932, all major work in the Oregon State System of Higher Education leading to baccalaureate and advanced degrees in Social Science was confined to the College of Social Science at the University,

and lower division work comprising instruction in the freshman and sophomore years was assigned to both the University and the State College.

The lower division instruction in Economics, History Philosophy, Political Science, Psychology, and Sociology at the State College constitutes essentially the equivalent of lower division work in these subjects at the University; and students finding it more convenient to spend their freshman and sophomore years at the State College may transfer to the University for their major work without loss of credit and with fundamental requirements for upper division work in these subjects fully met.

The instruction in the first two years is made as broad and liberalizing as possible, the aim being a general education together with preparation for specialization at the upper division level. The lower division program in Social Science at the State College, besides laying a broad foundation for later specialization in Social Science at the University, is intended also to serve the needs of students majoring in other fields on the State College campus. In addition, upper division service courses prescribed as required subjects, or available as electives, for students registered in other fields are given as needed at the State College.

General Social Science

CERTAIN phases of the instructional work in Social Science are of general character, being broader in scope and objectives than any of the departments. Instruction of this type is given through the survey for freshmen and sophomores, which aims to give the student a comprehensive view of social science as a division of knowledge. The subject-matter is non-technical and is adapted to the student interested in social science more as a cultural subject than for any other specific purpose. The survey may serve as satisfaction of a Lower Division Social Science group requirement but is not usually considered as prerequisite to advanced courses in specialized social sciences.

SOCIAL SCIENCE SURVEY COURSES

LOWER DIVISION COURSES

SSc 101, 102, 103. **Background of Social Science.** Three terms, 3 hours each term.

A study is made of the factors and forces which constitute the make-up of society. The validity of the thought process and opinions of the students with respect to social phenomena is challenged. An analysis is made of scientific methods and the possibilities and limitations in the social sciences. An attempt is made to acquaint the student with the findings of psychology in regard to bias and prejudices, egoism of the crowd, habit responses, complexes and factors of wise thinking. Insight, rather than mere information, is the aim and object of the course. Assistant Professor Dann.

Economics

ECONOMICS instruction at the State College, comprising lower division and service courses, is intended to meet the cultural and informational needs of all students interested in economic problems in relation to citizenship, and to supply a lower division foundation for law,

business, or public service or for majoring in economics at the University. The courses are also selected with a view to meeting the prescriptions found in technical curricula and needed in connection with various vocational lines.

DESCRIPTION OF COURSES

LOWER DIVISION COURSES

Ec 201, 202, 203. **Principles of Economics.** Three terms, 3 hours each term.

The principles that underlie production, exchange, and distribution. Practical problems like monetary and banking reform, trade regulations, taxation, labor movements, regulation of railways and public utilities are considered. Professors Nelson and Dreesen.

Ec 211. **Outlines of Economics.** Any term, 4 hours.

A general course covering our industrial and commercial organization, the nature of wealth, its production, consumption, and distribution; law of diminishing returns; division of labor and efficiency in production; exchange and distribution in their relation to the price-making process; factors determining prices, wages, interest, rent, and profits; problems of taxation; public expenditures; protection and free trade; money and banking; labor problems; and transportation. Text-book, lectures and reports on assigned readings. Not open to Business Administration students. Professor Dreesen, Assistant Professor Dann.

Ec 212. **Outlines of Economics.** Any term, 3 hours.

An abridgment of Ec 211. Restricted to Science and upper division professional and technical school students. Professor Dreesen.

UPPER DIVISION SERVICE COURSES

Prescribed in major curricula in degree-granting schools at the State College and also available as electives to students majoring in such schools.

Ec 405. **Labor Problems.** First term, 4 hours.

Treats of the condition under which laborers have worked since the advent of the industrial revolution. Topics especially emphasized are: trade union policies; strikes and lockouts; trade agreements; conciliation and arbitration; immigration; unemployment; women and children in industry; prison labor; industrial education, etc. Open to students who have completed introductory courses in economics or sociology. Not offered 1934-35. Professor Moore.

Ec 413. **Money and Banking.** Third term, 4 hours.

(a) Money. The nature and functions of money; the factors affecting price, and their relation to business conditions; brief history of the various forms of money; present problems and conditions. (b) Banking. Functions of banks; history of banking, including our national banking system, with emphasis upon the Federal Reserve Bank Act; comparison of our banking system with those of foreign countries. Assigned readings. Prerequisite: Ec 201, 202, 203, or Ec 211. Professor Dreesen.

Ec 418. **Public Finance.** Second term, 4 hours.

Public expenditures, local, state, and national; brief history of reforms calculated to secure efficiency in these expenditures; forms of taxes, customs, and fees whereby revenues are raised; present systems of land taxation studied in the light of proposed reforms; special attention to war finance; bonds versus taxes in public finance; management of national and local debts. Assigned readings. Four recitations. Professor Dreesen.

Ec 435. **Transportation.** Third term, 4 hours.

A brief historical review of the development of systems of transportation; organization and financing of different systems; effect of competition in the railroad business; freight classification and the making of rates and fares; the necessity of government control and attempts at regulation by State and Federal governments. Prerequisite: Ec 201, 202, 203, or Ec 211. Not offered 1934-35. Professor Dreesen.

Ec 440. **International Trade.** First term, 4 hours.

The theory of international trade; nature and effects of government interference in the form of bounties, subsidies, import and export duties; the commercial policies of the more important nations; consular service; foreign exchange and international banking systems; ocean routes and carriers; foreign trade organizations. Prerequisite: Ec 201, 202, 203, or Ec 211. Professor Dreesen.

Ec 475, 476, 477. **Economic Theory and Problems.** Three terms, 2 hours each term.

An advanced course dealing with economic theories and their application to current economic problems. The work contemplates a more or less elastic program covering selected topics such as value, price, distribution, money and credit, public credit and finance, foreign trade and exchange, international and intercommunity debtor-creditor problems, tariffs, imperialism, international and domestic cartels and trusts, marketing and transportation, and others. Prerequisite: Ec 201, 202, 203, or Ec 211. Professor Nelson.

History

HISTORY courses are intended to supply the necessary background for intelligent citizenship. The aim of the several courses is to afford an opportunity for a survey of world history and the development of western civilization together with a more detailed study of the English people, the British Empire, and the history of America from the earliest period to the present. The courses also prepare students to major in history at the University.

DESCRIPTION OF COURSES

LOWER DIVISION COURSES

Hst 201, 202, 203. **History of Western Civilization.** Three terms, 3 hours each term.

A survey of the origins and development of western civilization from early times to the present. Particular attention will be given to

social, economic and political factors and the relation of the past to contemporary civilization. Associate Professor Vaughn, Assistant Professor Ellison.

Hst 207, 208. **England and the British Empire.** First and second terms, 3 hours each term.

The course deals with the constitutional and political history of England and with the expansion and present position of the British Empire. The course when followed by Hst 209 satisfies group requirements in Social Science and is accepted as the equivalent of Hst 207, 208, 209 as given at the University. Associate Professor Vaughn.

Hst 209. **The World Since 1914.** Third term, 3 hours.

The war and the problems of reconstruction in the light of their historical antecedents and causes studied with reference to evaluation of current events and sources. With Hst 207, 208 satisfies sophomore Social Science group requirement. Associate Professor Vaughn.

Hst 224, 225, 226. **History of American Civilization.** Three terms, 3 hours each term.

A course dealing with the rise and development of the United States from the early period of North American colonization to contemporary times. Special emphasis on economic, social, and cultural life and political and constitutional changes. Assistant Professor Ellison.

Philosophy

LOWER division instruction in Philosophy is intended both for students who anticipate more advanced study of philosophy and for those who desire a brief introductory study only.

LOWER DIVISION COURSES

Phl 111, 112, 113. **Practical Life-Philosophies.** Three terms, 2 hours each term.

Intended to develop in the student the habit of reflective thinking. In particular the student is asked to apply the process of critical thinking to his own judgment and evaluations of life, the world, himself, and human society. Accordingly the starting point and constant reference of the instruction is to actual "practical life-philosophies"—e.g., the traditional Christian ethics; the "American gospel according to Benjamin Franklin"; the ultra-modern idealisms, realisms, and naturalisms; Nietzscheanism, the new Epicureanism of Anatole France; Marxist socialism; the neo-Christianity of men like Kropotkin and Tolstoy; etc. Professor Rebec.

Political Science

THE courses in political science are designed primarily for training in intelligent citizenship and effective participation in public affairs. They aim to give the student an active interest in the structure of political life, the operation of governments, state and local, and an understanding

of current political questions. Graduates of technical and professional schools are expected to take an active part in the affairs of government and through courses in political science are trained for the responsibilities of public life. The courses also prepare students to major in political science at the University.

DESCRIPTION OF COURSES

LOWER DIVISION COURSES

PS 201, 202, 203. **Modern Governments.** Three terms, 4 hours each term.

(1) American National Government with special attention on contemporary reforms; (2) State and Local Governments with attention to practical operation and contemporary reforms in Oregon; (3) European Governments, a comparative study of the principal European countries with particular attention to England, France, and Germany. Professors Dubach and Magruder.

PS 212. **American National Government.** Any term, 3 hours.

An abridgment of PS 201. Restricted to Science and upper division professional and technical school students. Professors Dubach and Magruder.

UPPER DIVISION SERVICE COURSES

Prescribed in major curricula in degree-granting schools at the State College and also available as electives to students majoring in such schools.

PS 405. **Municipal Government.** Third term, 3 hours.

Consideration of the organization, functions, and present-day problems of city and town government. The cities of the Northwest receive special attention. Professor Magruder.

PS 407, 408, 409. **International Organization and World Politics.** Three terms, 4 hours each term.

Nature and history of international relations, the League of Nations and the World Court, together with a study of political and economic realities affecting international interdependence. First term, International Relations (PS 407): How the United States conducts her foreign affairs; how she deals with her protectorates; causes of international wars; the League of Nations; the World Court; general survey of contemporary world conditions. Second term, Latin American Relations (PS 408): Critical study of resources, population, social and political movements; form of government, particularly emphasizing the effects on inter-American relationships. Third term, Pacific Area Relations (PS 409): Study of races; trade conditions; Chinese-Japanese relations; Russo-Japanese affairs; the possessions of the United States in the Pacific. Professors Dubach and Magruder.

Psychology

PSYCHOLOGY courses are intended to meet the needs of students desiring a foundation in psychology for work in education, either general or vocational; to prepare students to major in psychology at the University; and to meet the service needs of various schools and departments that require psychology as a part of their program of training.

DESCRIPTION OF COURSES

LOWER DIVISION COURSES

Psy 111. **Mental Hygiene.** Any term, 3 hours.

The conditions of healthy mental development and normal reactions to life and the college environment. Deals with the habits, attitudes, and reactions of the normal mind. No credit is given to students who have taken Ed 101. Professor Chambers.

Psy 112, 113, 114. **Introduction to Reflective Thinking.** Three terms, 3 hours each term.

A course intended to develop in the student the habit of reflective thinking by self-examination and through the interpretation of fact, conduct, and experience. The student is asked to apply the processes of critical thinking to his habitual judgments and valuations of life, the world, himself, and human society. Professor Brumbaugh.

Psy 201, 202, 203. **Elementary Psychology.** Three terms, 3 hours each term.

An introductory study of the material of general experimental psychology, learning, memory, perception, imagination, sensation, attention, reasoning, instinct, emotion, will, etc. Professor Chambers.

Psy 204, 205, 206. **Elementary Psychology Laboratory.** Three terms, 1 hour each term.

An introductory course in laboratory experimental methods. This is operated in coordination with Psy 201, 202, 203, which must be taken at the same time. One laboratory period each week. Professor Chambers.

Psy 211. **Outlines of Psychology.** Any term, 4 hours.

A study of the fundamental facts of human equipment and behavior; instinct, emotion, sensation, feeling, memory, imagination, suggestion, will, reason, and personality. Professor Chambers.

Psy 212, 213, 214. **Logic.** Three terms, 3 hours each term.

A study of the forms and methods of knowledge, the general nature of scientific method and the function and limits of human understanding. The organization of knowledge for effective presentation, the problem of inference and the nature of evidence. Professor Brumbaugh.

Sociology

ALL the lower division instruction in sociology, like that in the related social sciences, is intended to contribute to the task of training for good citizenship through a better understanding of the principles that govern human associations and relationships. Particular attention is given to attitudes and habits of mind and characteristic reactions to public events and social institutions. An insight is given into contemporary social problems both urban and rural. Fundamental instruction is provided for students who may later wish to major in sociology at the University. Courses are also designed to meet the needs of those who are majoring in home economics and allied fields.

DESCRIPTION OF COURSES

LOWER DIVISION COURSES

Soc 201, 202, 203. **Elements of Sociology.** Three terms, 3 hours each term.
Analysis of social organization and culture, human nature; social changes and movements as affected by culture, biological and physical environmental factors, and a brief survey of the various social problems as well as methods of investigation. Professor Moore.

Soc 211. **General Sociology.** Any term, 4 hours.
Analysis of the phenomena of group life, embracing social origins; a comparative study of group behavior and social institutions; a sociological study of the problems of social control, crime, poverty, family life, racial and economic conflicts, recreation, and character development. Professor Moore.

Soc 212. **General Sociology.** Any term, 3 hours.
An abridgment of Soc 211. Restricted to Science and upper division professional and technical school students. Professor Moore.

UPPER DIVISION SERVICE COURSES

Prescribed in major curricula in degree-granting schools at the State College and also available as electives to students majoring in such schools.

Soc 312. **The Family.** Second term, 3 hours.
A survey of the evolution of matrimonial institutions; the modern legal status of marriage; economic and social aspects of the modern family; women in industry and the new woman's movement in relation to the family; a comparative study of the divorce problem. Open only to juniors and seniors. Prerequisite: Soc 201, 202, 203 or equivalent. Assistant Professor Dann.

Soc 314. **Educational Sociology.** First term, 3 hours.
A study of the field of sociology from the educational point of view; social institutions in their origin and development; social activities in their relation to institutions and the individual; social control or the molding of social institutions and the directing of social activities; different methods of social investigation and their comparative results. Assistant Professor Dann.

Soc 364. **Rural Sociology.** Third term, 3 hours.
Problems of rural life and rural institutions contrasted with the problems of urban living. Attention is given to the community, the family, the school, the church, recreation and welfare activities as they find their expression in the rural setting. Assistant Professor Dann.

Soc 405, 406. **Social Problems.** First and second terms, 2 hours each term.
An analysis of the factors involved in the problems resulting from economic and social disorganization. Special attention is given to problems of poverty, pauperism, crime, and those social problems which result from changes in our industrial organization. Methods of treatment or protection are analyzed with a critical evaluation of present-day trends. Designed to serve the layman with useful knowledge

which he may employ in the function of his citizenship. Prerequisite: Soc 201, 202, 203, or Soc 211. Professor Moore.

Soc 474. **Social Psychology.** Third term, 3 hours.

Analysis of group attitudes, social values, crowd behavior, fashion, custom, public opinion and forces forming it. Factors in personality, elements and types of racial and group consciousness. Prerequisite: Soc 201-203 or 211; Psy 201-203 or 211. Three recitations. Offered 1934-35. Professor Moore.

Military Science and Tactics

Faculty

COLONEL WILLIAM HENRY PATTERSON, Infantry; Commandant of Cadets, Reserve Officers' Training Corps; Professor of Military Science and Tactics.

MAJOR JACOB JOHN GERHARDT, Infantry; Associate Professor of Military Science and Tactics; Executive officer of Infantry Unit, Reserve Officers' Training Corps.

MAJOR PAUL WHITTEN MAPES, Infantry; Assistant Professor of Military Science and Tactics (Infantry Unit), Reserve Officers' Training Corps.

MAJOR WILLIAM SPENCE, Field Artillery; Associate Professor of Military Science and Tactics; Executive Officer of Field Artiliery Unit, Rerserve Officers' Training Corps.

CAPTAIN HAROLD ALLUM COONEY, Field Artillery, M.S.; Assistant Professor of Military Science and Tactics (Field Artillery Unit), Reserve Officers' Training Corps.

CAPTAIN LOWELL M. RILEY, Field Artillery; Assistant Professor of Military Science and Tactics (Field Artillery Unit), Reserve Officers' Training Corps.

CAPTAIN LEWIS TENNEY ROSS, Corps of Engineers; Associate Professor of Military Science and Tactics; Executive Officer of Engineer Unit, Reserve Officers' Training Corps.

FIRST LIEUTENANT FRANCIS ARTHUR GARRECHT, JR., Field Artillery; Assistant Professor of Military Science and Tactics (Field Artillery Unit), Reserve Officers' Training Corps.

MASTER SERGEANT JOHN HARSCH, JR., (D.E.M.L.), United States Army; Assistant to Professor of Military Science and Tactics (Field Artillery Unit), Reserve Officers' Training Corps.

STAFF SERGEANT CLARENCE CALVIN WOODBURY (D.E.M.L.), United States Army (Captain, Infantry Section, Officers' Reserve Corps); Assistant to Professor of Military Science and Tactics (Infantry Unit), Reserve Officers' Training Corps.

SERGEANT JOHN CARSON WOODBURY (D.E.M.L.), United States Army (Sergeant-Major, Reserve Officers' Training Corps); Assistant to Professor of Military Science and Tactics.

SERGEANT LAURENCE EDWIN DARLINGTON (D.E.M.L.) (Captain, Quartermaster Section, Officers' Reserve Corps), M.S.; Assistant to Professor of Military Science and Tactics (Engineer Unit), Reserve Officers' Training Corps.

SERGEANT LUTHER LAFAYETTE WADE (D.E.M.L.), United States Army; Assistant to Professor of Military Science and Tactics (Rifle Marksmanship), Reserve Officers' Training Corps.

SERGEANT EDWARD HURSHAL COMBS (D.E.M.L.), United States Army; Stable Sergeant, Military Stables; Assistant Instructor in Equitation.

General Statement

AN Act of the United States Congress establishing the Land-Grant colleges was passed in the midst of the Civil War; it inaugurated the cadet corps and provided for military training of all able-bodied male students. The object of this provision was to assure well-trained officers for citizen soldiers. The Act was supplemented on June 3, 1916, by another Act of Congress, since amended, establishing the Reserve Officers' Training Corps. The object of the Corps is "to qualify students, by systematic and standard training methods, to be commissioned in the Officers' Reserve Corps so that in time of national emergency, trained men, graduates of colleges and universities, may lead the units of the large armies on which the safety of the country will depend."

R. O. T. C. Basic and Advanced Courses. In the fall of 1917 the War Department established at Oregon State Agricultural College both a Basic Course and an Advanced Course, Senior Division, in the Reserve Officers' Training Corps. The Basic Course covers the first two years of the college military training, enrolling physically fit men of the freshman and sophomore years except those who may be excused by the proper College authorities. The Advanced Course comprises the third and fourth years of college military training, enrolling those men who have completed the Basic Course, who have shown proper interest and aptitude for the training and who are specially selected for further training in advanced work. Once enrolled in the Advanced Course, students are required to carry it to completion as a prerequisite to graduation from this College.

Three Branches of Training. Three branches of military training are offered at the College to qualified students of the Reserve Officers' Training Corps: Infantry, Field Artillery, and Engineers. An excellent R. O. T. C. cadet band affords instruction in band practice.

Uniforms Provided by the Government. Each Basic Course member of the R. O. T. C. units at this institution is provided by the United States Government with a military uniform. This uniform is returned by the student at the end of each year or upon withdrawal.

The Advanced Course members are provided with tailored serge uniforms, toward which they pay a part of the cost during the junior year. These uniforms are not turned back to the Government, and students who continue the R. O. T. C. training in the senior year are reimbursed for that part of the cost which they have paid, so that on completion of the senior year the student has received the uniform without cost to himself.

Commutation of Subsistence. Students selected for the Advanced Course (junior and senior years) of the R. O. T. C. are paid commutation

of subsistence by the Government throughout the entire period during which they are pursuing the Advanced Course.

Benefits to Student. The training afforded through the Reserve Officers' Training Corps is regarded as of great value to the student pursuing it.

(a) It prepares him for places of responsibility and leadership in professional and business life.

(b) It makes for alertness, coordination, and good health.

(c) It teaches cooperation, loyalty, team work, management of men, honor, courage, self-respect, respect for others, sacrifice, duty, love of country; emphasizes citizenship; develops concentration and the power of observation; builds character and inculcates high standards of personal honor and patriotism. It also teaches good order, neatness, and truthfulness.

(d) It provides a means of applying the lessons learned in this and other departments of the College.

(e) It is an integral and valuable element in the plan of technical education.

(f) It gives a military education which will fit the student to render efficient service to the nation in time of emergency.

(g) Upon successfully completing the course, each student is given a commission as Second Lieutenant in the Officers' Reserve Corps.

(h) It provides a maximum of 24 term hours which count toward a degree.

(i) It provides attendance at summer R.O.T.C. camps, at which the student's expenses are paid, he receives a monetary per diem allowance, is furnished a complete uniform, board, lodging, medical attention, and emergency dental treatment, and is provided with recreational amusements and diversions. Attendance at such a camp is required at the end of the junior year. For cogent reasons attendance may be deferred until the end of the senior year.

(j) There is an allowance of rifle and pistol ammunition for target practice, with expert instructors, and the use of rifles and target equipment.

(k) More than $350,000 worth of the best up-to-date equipment is issued by the Government for the use of the R.O.T.C.

Requirements. In the Basic Course freshmen and sophomores are required to take three hours of military instruction a week throughout the year. Juniors and seniors in the Advanced Course are required to take five hours of military instruction a week throughout the year.

Military Credits for Graduation. A minimum of 6 term hours in Military Science is required for graduation. This comprises 3 hours for the first year and 3 hours for the second year of the basic work. Nine hours are given for the work of each of the junior and senior years. This makes a total of 24 credits for the entire R. O. T. C. work.

Cadet Officers. The cadet officers are selected at the beginning of each college year from the senior class; sergeants from the junior class; and corporals from the sophomore class.

Equipment. The military equipment is furnished by the War Department; the Armory by the State.

Military Fraternity. A chapter of the national military fraternity "Scabbard and Blade," was installed on the campus during the spring of 1920. Membership is limited to those cadet officers who have exhibited unusually fine qualities of leadership, including high ideals and gentlemanly conduct, and whose scholarship is above average.

Description of Courses

COURSES IN INFANTRY

LOWER DIVISION COURSES

MS 111, 112, 113. **First Year Basic Course.** Three terms, 1 hour each term.

Freshman year. This course aims to instruct the student in basic Infantry subjects; to inculcate obedience, decorum, cheerfulness, esprit, and other elements of good discipline with the corresponding physical development; and to lay a sound foundation for the further pursuit of military studies. Instruction includes orientation; National Defense Act and R. O. T. C.; obligations of citizenship; military history and military policy; current international situation; military discipline, courtesies and customs of the service; military sanitation and first aid, military organization; map reading; leadership; and rifle marksmanship. Three periods.

MS 211, 212, 213. **Second Year Basic Course.** Three terms, 1 hour each term.

Sophomore year. This course aims to give students further training in the basic Infantry subjects; to inculcate leadership; to build on the knowledge they have already acquired and to prepare them to take up the Advanced Course. Interior guard duty; leadership; automatic weapons; combat training; musketry; scouting and patrolling; and combat principles. Three periods.

UPPER DIVISION COURSES

MS 311, 312, 313. **First Year Advanced Course.** Three terms, 3 hours each term.

Junior year. Aims to give further training in basic Infantry subjects and in leadership, as the ground work for the duties of Junior officers of Infantry; to develop tactical judgment; to prepare the student for practical training while attending R. O. T. C. summer camp. Aerial photograph reading; care of animals and stable management; supply and mess management, emergency procurement of property and funds; instructional methods; machine guns; Howitzer; pistol; estimate of the situation and combat orders; marches; security; development for combat, offensive and defensive combat; and field fortifications. Five periods.

MS 411, 412, 413. **Second Year Advanced Course.** Three terms, 3 hours each term.

Senior year. This course aims to complete the preparation of the student for commission as a second lieutenant of Infantry in the Officers Reserve Corps of the United States Army. Military law; company administration and supply; Officers' Reserve Corps Regulations; tanks; mechanization; signal communications; combat intelligence; and combat training. Five periods.

COURSES IN FIELD ARTILLERY

LOWER DIVISION COURSES

MS 121, 122, 123. **First Year Basic Course.** Three terms, 1 hour each term.

Freshman year. Military fundamentals; orientation; National Defense Act and R. O. T. C.; obligations of citizenship; military history and policy; current international situation; military discipline, courtesies and customs of the service; military sanitation and first aid; military organization; leadership; elementary gunnery; duties of cannoneers and the firing battery; Field Artillery ammunition and matériel. Three periods.

MS 221, 222, 223. **Second Year Basic Course.** Three terms, 1 hour each term.

Sophomore year. Fire control instruments; map and aerial photograph reading; battery communications, duties of battery commander's detail; care of animals and stable management; equitation; driving and draft; automotive vehicle construction and operation. Three periods.

UPPER DIVISION COURSES

MS 321, 322, 323. **First Year Advanced Course.** Three terms, 3 hours each term.

Junior year. Reconnaissance, Selection and Occupation of position; duties of battery officers; use of battery commander's detail; signal communications; liaison with the Infantry; elementary ballistics and dispersion; preparation of fire; conduct of fire; pistol marksmanship. Five periods.

MS 421, 422, 423. **Second Year Advanced Course.** Three terms, 3 hours each term.

Senior year. Command and instruction of student organizations; tactics; military law and administration; interior guard duty; marches and shelter; defense against chemical warfare; camouflage and field fortifications. Five periods.

COURSES IN ENGINEERS

LOWER DIVISION COURSES

MS 131, 132, 133. **First Year Basic Course.** Three terms, 1 hour each term.

Freshman year. Military fundamentals; military organization; military discipline, courtesies and customs of the service; military sanitation and first aid; National Defense Act; military history and policy; obligations of citizenship; current international situation; leadership; rifle marksmanship; weapons and musketry. Three periods.

MS 231, 232, 233. **Second Year Basic Course.** Three terms, 1 hour each term.

Sophomore year. Basic Engineer instruction; organization and duties of Engineers; map and aerial photograph reading; military sketching; map making; rigging; preliminary combat training; scouting and patrolling; and minor combat principles. Three periods.

UPPER DIVISION COURSES

MS 331, 332, 333. **First Year Advanced Course.** Three terms, 3 hours each term.

Junior year. Interior guard duty; care of animals and stable management; advanced Engineer training—military roads, their location and construction, maintenance and repair; military bridging—general, floating; military explosives and demolitions; field fortifications—trenches, emplacements, obstacles and protected shelters; combat orders and solution of Engineer problems; combat principles of Infantry; combat principles of Engineers; and Mechanization. Five periods.

MS 431, 432, 433. **Second Year Advanced Course.** Three terms, 3 hours each term.

Senior year. Supply and mess management; procurement of Engineer property and funds; advanced Engineer training; construction in war; fixed bridges; combat training; organization of the ground; defense against chemical warfare; military law and administration; military history and policy; leadership. Five periods.

Physical Education

Faculty

Physical Education for Women

LAURA CORNELIA MCALLESTER, B.S., Assistant Professor of Physical Education for Women; Chairman of Department.

BETTY LYND THOMPSON, M.A., Assistant Professor of Physical Education for Women.

RACHEL CARLETON SPARKS, M.D., Assistant Professor of General Hygiene.

NATALIE REICHART, M.A., Instructor in Physical Education for Women.

ELSIE JACOBSEN, B.S., Instructor in Physical Education for Women.

JEANETTE ALICE BRAUNS, B.S., Instructor in Physical Education for Women.

Physical Education for Men

CLAIR VAN NORMAN LANGTON, Dr.P.H., Professor and Director of Physical Education.

CARL ALLEN LODELL, B.S., Director of Intercollegiate Athletics.

RALPH ORVAL COLEMAN, M.A., Professor of Physical Education.

MELVIN PRICE ISAMINGER, Dr.P.H., Professor of Hygiene.

ALONZO STINER, B.S., Head Coach of Football; Instructor in Physical Education.

AMORY TINGLE GILL, B.S., Head Coach of Basketball and Baseball; Instructor in Physical Education.

OTTO CHRISTIAN MAUTHE, Assistant Professor of Physical Education.

GRANT ALEXANDER SWAN, B.S., Assistant Professor of Physical Education; Coach of Track.

JACK ERNEST HEWITT, M.A., Assistant Professor of Physical Education.

JAMES VICTOR DIXON, B.S., Instructor in Physical Education; Assistant Coach.

EDWARD ALMERON STEVENS, LL.B., Instructor in Physical Education; Coach of Rowing.

General Statement

LOWER division and service courses in Physical Education are offered at the State College. By action of the State Board of Higher Education March 7, 1932, all major work in the Oregon State System of Higher Education leading to baccalaureate and advanced degrees in Physical Education was confined to the School of Physical Education at the University, and lower division work comprising instruction in the freshman and sophomore years was assigned to both the University and the State College.

The lower division work in Physical Education at the State College constitutes essentially the equivalent of lower division work at the University and students finding it more convenient to spend their freshman and sophomore years at the State College may transfer to the University for their major work without loss of credit and with fundamental requirements for upper division work fully met.

The lower division program at both institutions, besides laying a broad foundation for specialization in physical education, is intended also to serve the needs of students majoring in other fields who wish to minor in physical education. In addition, upper division service courses prescribed as required subjects or available as electives for students registered in other fields are given as needed at the State Collge.

As stated on pages 315-316, the dean of the major school at the University serves in an advisory relation to the work in physical education at the State College to the end that the instruction shall meet approved standards and shall bear a proper relation to the work of the major school.

Students who plan to major or minor in physical education should confer with advisers in the office of the Department of Physical Education for Women or for Men, respectively.

Intramural Sports. Intramural sports are conducted by both Physical Education departments. The department for women has charge of all women's athletics and offers for the students a wide program of intramural sports. The department for men carries on extensive organized sports programs which are separate and apart from intercollegiate athletics.

The function of the program of intramural sports is to give every student the moral, social, physical, and educational values of competitive sports. Competition is organized between living organizations, clubs, individuals, classes, and institutional departments. The program of sports provides for both individual and team endeavor. "Athletics for all" is the purpose of intramural sports promotion.

Athletic Organizations for men include the Minor "O" and Varsity "O" associations and the honor organizations, Sigma Alpha and Sigma Delta Psi. The Women's Athletic Association sponsors a program of competitive and recreational activities for women. A point system provides opportunity for earning the awards of the Association which include the Minor "O" letter, Orange "O" letter, and senior plaque.

Health Service. The Health Service provides medical examinations for all entering students and advises with the Physical Education departments in the proper assignment of students to activities in accord with their physical needs.

Fees. The fees paid by every student cover the use of pool and baths, locker, swimming suit, towels, bandages, and consumable supplies. Every student has a basket or locker in the gymnasium for his or her exclusive use and is urged to use the gymnasium facilities to the utmost.

Prerequisites for Major. Students taking the first two years toward a major in Physical Education with the intention of transferring to the University should take all prerequisite subjects and the freshman and sophomore technical subjects. On transfer to the University these courses

are accepted and adjustments made so that requirements for a degree in Physical Education can be completed in the junior and senior years. Prerequisite courses are as follows:

	Term hours
General Zoology	9
Elementary General Chemistry	12
English Composition	9
Elementary Human Physiology	6
Elements of Psychology	9
Sociology	9
Survey (elected from Language and Literature or Social Science group)	12

Minor Norm. Students preparing for part-time teaching positions in physical education should take as a minor norm a minimum of 24 term hours of professional courses, of which at least 12 term hours must be activities suitable for high school situations.

On completion of the following minimum curriculum the student may be recommended for a part-time teaching position in physical education in the high schools of the state. The departments offer a wider range of studies, however, and the student is urged to take as much as her schedule will allow.

	Term hours		
	1st	2d	3d
Men:			
Introduction to Physical Education (PE 121, 122, 123)	2	2	2
Technique of Gymnastics (PE 174)	2	---	---
Technique of Football, Track, and Field (PE 175)	---	2	---
Technique of Minor Sports (PE 176)	---	---	2
Technique of Baseball and Basketball (PE 274)	2	---	---
Technique of Boxing and Wrestling (PE 275)	---	2	---
Technique of Swimming (PE 276)	---	---	2
Coaching of Basketball (PE 346), Coaching of Football (PE 347), Coaching of Baseball (PE 348), Coaching of Track and Field (PE 349) — Three courses selected from this group	2	2	2
	8	8	8
Women:			
Introduction to Physical Education (PE 121, 122, 123)	2	2	2
Physical Education Laboratory (PE 124, 125, 126)	2	2	2
Physical Education Laboratory (PE 224, 225, 226)	2	2	2
Technique of Teaching Physical Education (Ed 344, 346)	3	3	---
	9	9	6

Required Courses. Courses PE 111, PE 114, 115, 116, PE 131, PE 214, 215, 216 (or PE 117, 118, 119, PE 217, 218, 219) for women, and PE 150, PE 151, 152, 153, PE 251, 252, 253, (or PE 157, 158, 159, PE 257, 258, 259) for men are required of all undergraduates. For the Junior Certificate students are required to complete the following:

Freshman Year

Elementary Physical Education, 1 term hour each term for two terms.
General Hygiene, 2 term hours, one term.

Sophomore Year

Advanced Physical Education, 1 term hour each term for three terms.

Required activity courses are regularly scheduled classes planned as instructional hours leading to a knowledge and appreciation of the technique involved and not merely opportunity for recreation or exercise. Ample opportunity for exercise and recreation has been made and all of the facilities of the department are at the student's disposal outside the regular class hours.

The physical activity courses for students taking a minor in physical education (PE 124-126, 224-226 for women; PE 174-176, 274-276 for men) may be considered as fulfilling the physical education requirement for that year.

The costume needed for participation in the various activities of the department depends upon the program of the student. Since a regulation costume for the various activities must be worn, nothing should be purchased before coming to the College.

Elective Courses. Courses PE 314, 315, 316, PE 414, 415, 416 for women and PE 351, 352, 353, PE 451, 452, 453 for men, may be taken to the amount of one hour per term for juniors and seniors and a total of not more than six term hours in addition to the regular physical education requirement.

Description of Courses

SERVICE COURSES FOR WOMEN

LOWER DIVISION COURSES

PE 111. **General Hygiene.** Any term, 2 hours.

The principles and practices of health promotion, individual and physiologic hygiene, disease prevention and control, community hygiene and public health. Lectures, recitations, and demonstrations concerning phases of health which should be understood by all college students. Required of all freshmen. Two periods.

PE 114, 115, 116. **Elementary Physical Education.** Three terms, 1 hour each term.

Two terms required of all freshman women except those assigned to restricted work (courses PE 117, 118, 119) as a result of the physical and medical examination. In fulfilling this requirement the student is permitted to elect courses offered in team and individual sports, dancing, tumbling, and mechanics of posture. During one term of the freshman year all students take PE 111. Three periods.

PE 117, 118, 119. **Restricted and Corrective Gymnastics.** Three terms, 1 hour each term.

For students with temporary or permanent physical handicap referred by the Health Service, or by their family physicians. Freshmen referred to this course substitute it for PE 114, 115, 116. Three periods.

PE 131. **Social Ethics.** One term, no credit.

The purpose of this course is threefold. It brings new students into early contact with their dean of women. It gives the dean of women the opportunity of instructing new students in the fundamental principles of conduct both on the campus and elsewhere. It brings students a vision of woman's position and responsibility in the economic, social, and spiritual life of today. Required of all freshman women. One period.

PE 214, 215, 216. **Advanced Physical Education.** Three terms, 1 hour each term.

Continuation of PE 114, 115, 116. Required of all sophomores except those assigned to restricted work (courses PE 217, 218, 219). Three periods.

PE 217, 218, 219. **Restricted and Corrective Gymnastics.** Three terms, 1 hour each term.

A continuation of PE 117, 118, 119. For sophomores. Three periods.

UPPER DIVISION COURSES

*PE 314, 315, 316. **Physical Activities.** Three terms, 1 hour each term.

A continuation of PE 214, 215, 216. Elective for juniors. Three periods.

*PE 414, 415, 416. **Physical Activities.** Three terms, 1 hour each term.

A continuation of PE 314, 315, 316. Elective for seniors. Three periods.

SERVICE COURSES FOR MEN

LOWER DIVISION COURSES

PE 150. **General Hygiene.** Any term, 2 hours.

The principles and practices of health promotion, individual and physiologic hygiene, disease prevention and control, community hygiene and public health. Lectures, recitations, and demonstrations concerning phases of health which should be understood by all college students. Required of all freshmen. Two periods.

PE 151, 152, 153. **Elementary Physical Education.** Three terms, 1 hour each term.

Physical activities taught not only for the acquisition of skill, but from the standpoint of their adaptation in the social life of the student. The time set aside is for instruction. It is hoped that the student will use the open hours provided and also the Intramural Sports for practice in these various activities. All freshman students are expected to take one term of General Hygiene and two terms of Elementary Physical Education. Two periods.

PE 157, 158, 159. **Restricted Physical Education.** Three terms, 1 hour each term.

Special programs set up for freshmen not adapted to the heavier regular classwork. Students are given individual attention and assigned to modified and corrective programs suited to their needs. This course is substituted for PE 151, 152, 153; students must, however, take the course in General Hygiene. Two periods.

PE 251, 252, 253. **Advanced Physical Education.** Three terms, 1 hour each term.

Required of sophomores. Two periods.

PE 257, 258, 259. **Restricted Physical Education.** Three terms, 1 hour each term.

A continuation of PE 157, 158, 159. For sophomores. Substitute for PE 251, 252, 253. Two periods.

*Elective physical education courses for juniors and seniors may be taken to the amount of one term hour per term and a total of not more than six term hours in addition to the physical education requirement.

UPPER DIVISION COURSES

*PE 351, 352, 353. **Physical Activities.** Three terms, 1 hour each term.
A continuation of PE 251, 252, 253. Elective for juniors. Two periods.

*PE 451, 452, 453. **Physical Activities.** Three terms, 1 hour each term.
A continuation of PE 351, 352, 353. Elective for seniors. Two periods.

PROFESSIONAL COURSES

LOWER DIVISION COURSES

PE 121, 122, 123. **Introduction to Physical Education.** Three terms, 2 hours each term.
Required of all minors in the freshman year. This course introduces the student to the modern developments of physical education in relation to general education. The first term deals with the general aims and objectives, the second term with the history of physical education and the third term with the practical considerations, program, physical plant and personnel. Two periods.

PE 124, 125, 126. **Physical Education Laboratory.** Three terms, 2 hours each term.
Required of all women minors. This course deals with intensive instruction in all the various activities which go to make up the physical education program. Five periods.

PE 174. **Technique of Gymnastics.** First term, 2 hours.
Required of all men minors in the freshman year. This is a laboratory course in the technique and skills of gymnasium work, including practice in the various forms of marching (military, gymnastic, calisthenic), mass athletics (games, relays, contests, track and field), tumbling, and apparatus work for school purposes. Six periods.

PE 175. **Technique of Football, Track, and Field.** Second term, 2 hours.
Required of all men minors in the freshman year. This is a laboratory course in the techniques and skills of football, track and field activities, including actual practice in the fundamentals of these sports. Six periods.

PE 176. **Technique of Minor Sports.** Third term, 2 hours.
Required of all men minors in the freshman year. This is a laboratory course in the techniques and skills of speedball, soccer, volleyball, handball, tennis, and golf, including actual practice in the fundamentals of these sports. Six periods.

PE 221. **Community Hygiene.** First term, 2 hours.
The general principles of hygiene as applied to community problems. A study of the protection of the health of the community. Problems of contagious diseases and their prevention. Modern organizations for the promotion of healthful living. Two periods.

PE 222. **Applied Anatomy.** Second term, 2 hours.
A study of the mechanisms of bodily movements. Two periods.

PE 223. **Health Education.** Third term, 2 hours.

The materials and methods of presenting health information in the schools. The relationship of the health service work to school problems. Function of the health nurse. Two periods.

PE 224, 225, 226. **Physical Education Laboratory.** Three terms, 2 hours each term.

Required of all women minors. A continuation of PE 124, 125, 126. Five periods.

PE 274. **Technique of Baseball and Basketball.** First term, 2 hours.

Required of all men minors in the sophomore year. This is a laboratory course in the techniques and skills of baseball and basketball, including actual practice in the fundamentals of these two sports. Six periods.

PE 275. **Technique of Boxing and Wrestling.** Second term, 2 hours.

Required of all men minors in the sophomore year. This is a laboratory course in the techniques and skills of boxing and wrestling, including actual practice in the fundamentals of these two sports. Six periods.

PE 276. **Technique of Swimming.** Third term, 2 hours.

Required of all men minors in the sophomore year. This is a laboratory course in the techniques and skills of swimming, life saving, diving, and water polo, including actual practice in the fundamentals of aquatics. Six periods.

UPPER DIVISION COURSES

Ed 344, 345. **Technique of Teaching Physical Education** (Women). Two terms, 3 hours each term.

Required of all women minors during the junior year. Technique involved in the teaching of rhythm, sports, and related activities. Five periods.

PE 346. **Coaching of Basketball** (Men). First term, 2 hours.

The coaching and training of basketball teams beginning with fundamentals, passing, dribbling, and pivoting with emphasis on the psychology of the game; various methods of defense and offense. Two periods.

PE 347. **Coaching of Football** (Men). Second term, 2 hours.

Fundamentals of football, theory and practice, details of each position on the team, training and managing, complete technique of developing offensive and defensive tactics, a comparison of the various systems in American intercollegiate football. Two periods.

PE 348. **Coaching of Baseball** (Men). Third term, 2 hours.

The technique of batting, pitching, baseball strategy and how to play various positions; promoting the game; making schedules, points of inside baseball; care and construction of the field, baseball management. Two periods.

PE 349. **Coaching of Track and Field** (Men). Third term, 2 hours.

How to train for various track and field events; their form and technique; conduct of athletic meets; construction, use, and assem-

bling of all equipment used by the participants on the field; development of certain types of individuals for certain events. Two periods.

PE 358. **First Aid.** First or third term, 2 hours.
Elective for physical education majors and minors. Service course for other departments. The emergency treatment of all classes of injuries (until the doctor comes). A standard course in first aid with emphasis upon the practical use of the knowledge as applied to everyday life in varying occupations. Two periods.

PE 359. **Athletic Training and Conditioning** (Men). First term, 2 hours.
Elective for physical education majors and minors. A study, from both practical and theoretical aspects, of massage, bandaging, treatment of sprains, bruises, strains, and wounds; diet and conditioning of athletes. Lectures, demonstrations, and practice. Two periods.

Ed 411. **School Hygiene.** Third term, 2 hours.
A course in the health provisions requisite for the hygienic conduct of education. Oregon laws, regulations of the State Board of Health, and other state and local authorities explained in detail. Prerequisite: Ed 416; also one or more courses each in biological and physical science. Two periods.

Ed 412. **School Sanitation.** Second term, 2 hours.
General sanitation of school yard and arrangement of buildings; toilet; plumbing; water supply; heat; light; ventilation; seats; blackboards and cleanliness. Two periods.

PE 421. **Principles of Physical Education.** First term, 3 hours.
General philosophy and principles of physical education and its relation to general education. Three periods.

PE 422. **Tests and Measurements in Physical Education.** Second term, 3 hours.
Survey of the field; special study of typical tests, methods of scoring, principles of test building. Should be preceded by or taken simultaneously with Ed 416 whenever possible. Three periods.

PE 423. **Organization and Administration.** Third term, 3 hours.
A study of administrative problems applied to high school situations, including organization of departments, organization of instructional and recreational programs, supervision of both teaching and physical plant and routine administration. Three periods.

PE 435. **Playground and Community Recreation.** Third term, 3 hours.
Nature and function of play; adaptation of activities; program making. Playground instruction, management, and supervision. Laboratory period in activities such as handicrafts, nature work, physical activities for indoor and outdoor programs. Five periods. Offered alternate years. Offered 1934-35.

PE 465. **Health Survey.** Second term, 3 hours.
A course for seniors only. Open to men and women. A discussion of the economic, social, biological, hygienic factors concerned in effective living. Three periods.

Graduate Division

GEORGE REBEC, Ph.D., Dean and Director of the Graduate Division, Oregon State System of Higher Education.
WILLIBALD WENIGER, Ph.D., Assistant Dean of the Graduate Division.
CLARA LYNN FITCH, Secretary of the Graduate Division, University.
BARBARA BURTIS PECK, B.S., Secretary at State College.

Graduate Council

State College Council

GEORGE REBEC, Ph.D., Chairman.
WILLIBALD WENIGER, Ph.D., Vice-Chairman, Science.
PHILIP MARTIN BRANDT, A.M., Agriculture.
JAMES RALPH JEWELL, Ph.D., LL.D., Education.
SAMUEL HERMAN GRAF, M.E., M.S., Engineering and Industrial Arts.
EARL GEORGE MASON, M.F., Forestry.
FLORENCE BLAZIER, Ph.D., Home Economics.
FRANCOIS ARCHIBALD GILFILLAN, Ph.D., Pharmacy.

University Council

GEORGE REBEC, Ph.D., Chairman.
GEORGE WILLIAMSON, Ph.D., Arts and Letters.
JAMES HENRY GILBERT, Ph.D., Social Science.
PERCY PAGET ADAMS, B.A., B.S., Architecture and Allied Arts.
HARRISON VAL HOYT, Ph.D., Business Administration.
JAMES RALPH JEWELL, Ph.D., LL.D., Education.
JOHN JACOB LANDSBURY, Mus.D., Music.
ERIC WILLIAM ALLEN, A.B., Journalism.
OLOF LARSELL, Ph.D., Medicine.
JOHN FREEMAN BOVARD, Ph.D., Physical Education.

University Graduate Committees

Arts and Letters:
GEORGE WILLIAMSON, Ph.D., Chairman; FRIEDRICH GEORG GOTTLOB SCHMIDT, Ph.D.; LEAVITT OLDS WRIGHT, Ph.D.

Social Science:
JAMES HENRY GILBERT, Ph.D., Chairman; ROBERT HOLMES SEASHORE, Ph.D.; HAROLD JOYCE NOBLE, Ph.D.

Architecture and Allied Arts:
PERCY PAGET ADAMS, B.A., B.S., Chairman; ELLIS FULLER LAWRENCE, M.S., F.A.I.A.; ANDREW MCDUFFIE VINCENT.

Business Administration:

HARRISON VAL HOYT, Ph.D., Chairman; CARDINAL LYLE KELLY, M.A., C.P.A.; ORIN KAY BURRELL, M.A., C.P.A.

Education:

JAMES RALPH JEWELL, Ph.D., LL.D., Chairman; CARL LEO HUFFAKER, Ph.D.; FRED LEA STETSON, M.A.

Journalism:

ERIC WILLIAM ALLEN, A.B., Chairman; GEORGE STANLEY TURNBULL, M.A.; ARNE GUNDERSEN RAE, B.S.J.

Music:

JOHN JACOB LANDSBURY, Mus.D., Chairman; GEORGE HOPKINS, B.A.; LOUIS ARTAU.

Physical Education:

JOHN FREEMAN BOVARD, Ph.D., Chairman; ERNESTO RAY KNOLLIN, M.A.; FLORENCE DELIA ALDEN, M.A.

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 DREESEN, Ph.D.; WILLIS PIERRE DURUZ, Ph.D.

Education:

JAMES RALPH JEWELL, Ph.D., LL.D., Chairman; CARL WALTER SALSER, Ed.M.; RILEY JENKINS CLINTON, Ed.D.

Engineering and Industrial Arts:

SAMUEL HERMAN GRAF, M.E., M.S., Chairman; FRED ORVILLE MCMILLAN, M.S.; GEORGE BRYAN COX, B.S.

Forestry:

EARL GEORGE MASON, M.F., Chairman; WILLIAM JENNINGS BAKER, M.S.; THURMAN JAMES STARKER, B.S.

Home Economics:

FLORENCE BLAZIER, Ph.D., Chairman; SARA WATT PRENTISS, M.A.; LUCILE WINIFRED REYNOLDS, M.A.

Pharmacy:

FRANCOIS ARCHIBALD GILFILLAN, Ph.D., Chairman; ERNST THEODORE STUHR, M.S.; LEWIS CLEMENCE BRITT, M.S.

Medical School Graduate Committee

Medicine:

OLOF LARSELL, Ph.D., Chairman; FRANK RAYMOND MENNE, M.D.; GEORGE EMANUEL BURGET, Ph.D.

General Statement

IN the disciplines of undergraduate education the primary aim is to prepare the student for cultured living and effective citizenship. Professional training has the additional aim of preparing for a career. These aims continue into the graduate years, but in graduate study the dominant objective is the development of the scholar, capable of original thinking and of creative achievement in the advancement and extension of knowledge. Hence, the granting of a graduate degree indicates more than the mere completion of a prescribed amount of advanced study; it indicates rather that the student has shown both promise and performance in the field of independent scholarship.

Graduate study 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 a standard college or university may be admitted as a graduate student at either the University or the State College. Such admission, however, does not in itself admit him to candidacy for a degree. Candidacy for an advanced degree is gained only after the student has demonstrated the thoroughness of his previous preparation and his ability to do work of graduate character.

Organization

THE Graduate Division has jurisdiction over all graduate study, as defined above, throughout the Oregon State System of Higher Education, leading to other than strictly professional degrees. The general direction and administration of the Graduate Division are in the hands of the Graduate Dean and the Graduate Councils at the University and the State College. The Graduate Council, alike at the two institutions, consists of one representative from each major school or college. The Dean of the Graduate Division is chairman of each institutional council. The two councils meet both separately and in joint session. Regulations for the Graduate Division as a whole are formulated by the Graduate Council in joint session. Regulations governing graduate study at each institution are formulated by the respective institutional councils, subject to the approval of the Graduate Faculty of the institution.

The Graduate Faculty is made up of all members of the general faculties who offer courses eligible for graduate credit.

In each of the major schools or colleges there is a committee, known as the Graduate Committee for that school or college, appointed in consultation with the Dean of the Graduate Division, consisting of at least three members, of whom the chairman is the representative of his school or college on the Graduate Council. The several Graduate Committees work out programs and standards of study and have supervision over departmental study programs in their respective fields, whether such programs are laid down for the department generally, or for the individual student; except that the actual formulation of the departmental programs, and the

working out and direction of the programs of the individual students remain with the department. No School or College Committee has authority to waive or supersede any of the general rules or requirements of the Graduate Division.

General Regulations

TWO classes of graduate students are recognized: those desiring to become candidates for an advanced degree and those desiring merely to take work beyond the bachelor requirements. The former make out a curriculum in conformity with the rules hereinafter stated; the latter register for the courses they desire. In permitting the latter registration there is no implied obligation to accept credits so earned 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 his department.

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

Preparation Required for Graduate Study. Preparation for the graduate major must be an undergraduate major in the same subject, or a fair equivalent. Preparation for the graduate minor must be at least one year-sequence of upper division work in addition to foundational courses in the subject.

Maximum Load. The maximum registration allowed graduate students is 16 term hours per term (10 for graduate assistants and fellows), 9 term hours during each summer session, and 6 term hours during each post session.

Credit Requirements. The master's degree (M.A. or M.S.) requires 45 term hours of graduate work constituting a coherent program, based upon adequate preparation. This work is normally divided into a major and a minor, 30 term hours for the major and 15 for the minor.

No definite credit requirement is set up for the degree of Doctor of Philosophy, since it is based primarily upon attainments and proved ability. The candidate chooses a major and (subject to the approval of his major professor) one or two minor lines of study. 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 major professor, the student outlines a curriculum devoting approximately sixty per cent of his time to the major, including thesis, and approximately forty per cent to the minor or minors.

Approval of Curriculum. A curriculum for either the master's or the doctor's degree must be approved by the Graduate Committee of the school

or college and by the Graduate Council of the institution within the first term of the candidate's registration for the degree.

Grade Requirement. A grade point average of 2.00 (a B average) is required for every graduate degree. Grades below C are not accepted for graduate credit.

Residence. For the master's degree, at least three terms (or five summer sessions) of work must be completed in residence. Credit not to exceed 15 term hours may be transferred from another institution of standard rank, provided the subjects fit into a logical curriculum for the degree and are approved by the major department and the Graduate Council, and provided further that grades of A or B have been earned.

For the doctor's degree, two years of full time residence work beyond the master's degree are required, of which one year (usually the last) must be spent on the campus of the institution from which the degree is taken.

Transferred Credit. Credit may be transferred from another standard institution to the maximum amount of 15 term hours, provided the credit is approved by the major professor as fitting into the program for the master's degree, but such transferred credit, though it may lighten the schedule of the student, may not shorten his period of residence. The Graduate Council does not grant credit from another institution until after one term of work has been completed in residence.

Time Limit. All work to be counted toward the master's degree, including the thesis and the final examination, must be completed within five years from the date of matriculation in the Graduate Division. Credits falling outside of this time limit may be used as foundational work, but may not be counted toward the master's degree.

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 and in which graduate students are registered as such and expected to accomplish work of a higher order than that of undergraduate students in the same course. At least one year-sequence of 500-number character, normally of seminar or research nature, and for approximately three term hours of credit per term, is required of each candidate for the master's degree in addition to the thesis.

Degree Requirements. The Master of Arts degree requires a reading knowledge of some foreign language, preferably French or German, as shown by examination or by adequate undergraduate courses. For the Master of Fine Arts degree a high measure of creative ability must be demonstrated.

The Doctor of Philosophy degree requires a reading knowledge of French and German demonstrated by a formal examination in each language. These examinations should be taken as early as possible in the candidate's course, and must be passed before the preliminary examination can be taken.

It is not the policy of the Graduate Division to grant the doctor's degree to any student whose academic training, both undergraduate and graduate, has been exclusively with one institution.

Preliminary Examinations. For the master's degree, the preliminary examination should be taken during the first term of residence, either early or late, subject to the approval of the major professor and the Graduate Council. Under no circumstances may this examination be postponed longer than the completion of 30 term hours. Students who have taken their bachelor's degree with honors in the subject are exempt from the master's preliminary examination.

The candidate for 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 the degree is expected.

Advancement to candidacy for the degree ordinarily follows the passing of the preliminary examination and the proper recommendation to the Graduate Council by the student's major adviser, or, in the case of doctor's candidates, by his advisory committee.

Thesis. Every candidate for an advanced degree must file three copies of an acceptable thesis, and five copies of an abstract of the thesis, not later than two weeks before the date of his final examination. Nine term hours of credit are earned on the thesis toward the Master of Arts and the Master of Science degrees, 15 term hours toward the Master of Fine Arts, and 15 or more term hours toward the Doctor of Philosophy degree. The thesis for the Doctor of Philosophy degree must show evidence of independent research on the part of the candidate. Every thesis for a higher degree must have the approval of the Graduate Committee of the school or college in which the candidate is majoring before being filed in the Graduate Division office.

Final Examinations. 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 degrees, the examining committee consists of at least three members of the Graduate Faculty, including representatives of the candidate's major and minor departments. It is recommended, and may be required by the Graduate Commitee of any school, that at the master's examination there shall be one member on the committee not directly connected with the candidate's studies.

For the doctor's degrees 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 faculty members in general charge of the candidate's work and any additional members judged desirable by them or by the Graduate Council.

All examination committees are nominated by the major professor subject to the approval of the Graduate Dean, who is ex officio a member of all examining committees.

All graduate degrees must be approved by the Graduate Council of the institution by which they are given.

Fee. A graduate student is required to pay a registration fee of $23.50 each term, or $70.50 a year.

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 has been centralized by curricula or major subjects as follows:

At the State College—

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

At the University—

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

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

Graduate study may be pursued on the respective campuses according to the special requirements and conditions stated on the following pages.

The courses open to graduate students are printed under the several departments.

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 Council, Oregon State College, Corvallis, Oregon.

Degrees. Graduate degrees are offered at the State College as follows:

Master of Science: In the professional and technical fields of Agriculture, Education, Engineering, Forestry, Home Economics, and Pharmacy; and in Bacteriology, Botany, Chemistry, Entomology, Geology, Mathematics, Physics, and Zoology.

Master of Arts: In the professional and technical fields of Education and Home Economics; and in Bacteriology, Botany, Chemistry, Entomology, Geology, Mathematics, Physics, and Zoology.

Doctor of Philosophy: In the technical field of Agriculture and in Botany, Chemistry, Entomology, Geology, Mathematics, Physics, and Zoology.

Departments. The departments or subjects in which graduate work may be taken leading to advanced degrees at the State College are as follows:

BIOLOGICAL SCIENCE:

Anatomy*, Bacteriology*, Botany, Entomology, Pathology*, Physiology*, Zoology.

PHYSICAL SCIENCE:

Biochemistry*, Chemistry, Geology, Mathematics, Physics.

PROFESSIONAL AND TECHNICAL SCHOOLS:

Agriculture—Agricultural Economics, Agricultural Education, Animal Husbandry, Dairy Husbandry, Extension Methods, Farm Crops, Farm Management, Horticulture (including Horticultural Products, Landscape Maintenance, Pomology, and Vegetable Crops), Poultry Husbandry, Soils and Soil Science, and Veterinary Medicine.

Education—General, Agricultural, Home Economics, Industrial, Secretarial; Educational and Vocational Guidance.

Engineering and Industrial Arts—Chemical Engineering and Industrial Chemistry; Civil and Highway Engineering; Electrical, Power, and Communication Engineering; Mechanical and Aeronautical Engineering; Industrial Arts Education and Industrial Administration.

Forestry—Technical Forestry, Logging Engineering, Wood Products.

Home Economics—Clothing, Textiles, and Related Arts; Foods and Nutrition; Home Economics Education; Household Administration (including Child Development and Parent Education); Institution Economics.

Pharmacy—Practical Pharmacy, Pharmaceutical Analysis, Pharmacology*, and Pharmacognosy.

Facilities. The facilities for pursuing graduate work are excellent and include, in addition to well-equipped laboratories, the agricultural experiment station with nine branch experiment stations in different parts of the state, the engineering experiment station, a suitable reference library, and above all a scientific and technical faculty actively engaged in investigational and research work. No graduate student is permitted to undertake a thesis problem unless adequate facilities are available in the chosen field.

Assistants and Fellows. Information on fellowships and assistantships at the State College is obtainable from the sections of the catalog dealing with the several departments, or by writing directly to the department.

*Certain phases of graduate work in this field may be pursued at the Medical School, Portland.

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 Graduate Dean. Correspondence relating to graduate work in fields allocated to the University should be addressed to the Dean of the Graduate Division, University of Oregon, Eugene, Oregon, or to the department concerned.

Degrees. Graduate degrees are offered at the University as follows:

Master of Arts: English, German, Greek, Latin, Romance Languages, Economics, Geography, History, Philosophy, Political Science, Psychology, Sociology, Art and Architecture, Landscape Architecture, Business Administration, Music, Education, Journalism, Physical Education.

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

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

Master of Architecture: Art and Architecture.

Master of Business Administration: Business Administration.

Master of Education: Education.

Master of Landscape Architecture: Landscape Architecture.

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

Doctor of Education: Education.

Departments. The departments or subjects in which graduate work may be taken leading to advanced degrees at the University are as follows:

ARTS AND LETTERS:

English, German, Greek, Latin, Romance Languages.

SOCIAL SCIENCE:

Economics, Geography, History, Philosophy, Political Science, Psychology, Sociology.

ARCHITECTURE AND ALLIED ARTS: Art and Architecture, Landscape Architecture.

BUSINESS ADMINISTRATION.

EDUCATION.

JOURNALISM.

MUSIC.

PHYSICAL EDUCATION.

Assistants and Fellows. The University has established assistantships of several ranks for graduate students of superior attainments and abilities. Such students are given a reduction in fees and a small stipend of approximately $500 for the nine months, for which service in the major department is rendered, in the way of correcting papers, supervising quiz sections, etc., to the amount of from fifteen to twenty hours a week. These students are given the title of graduate assistant and are limited to a program of study of not more than ten hours a term. While the master's degree may be earned in one year with the addition of the summer term, such students ordinarily seek reappointment and take two years for the degree. Students who render a lesser amount of service are called part-time graduate assistants, and receive a smaller stipend, but are also entitled to the reduction in fees. Part-time graduate assistants are permitted a schedule of twelve term hours.

Research Assistantships. These are awarded to graduate students of proved ability who are chosen to assist in the research projects of the faculty or of the department. The same restrictions as to registration in courses apply to these assistants, and the monetary considerations and fee reductions are essentially the same.

Graduate Work in Portland

STUDY under the Graduate Division may, in certain fields, be pursued in Portland at the Medical School or at the Portland Extension Center. Students seeking advanced degrees for such study register in the Graduate Division and take their degrees from the State College or the University according to the major subject (see Institutional Allocation of Graduate Work, page 369).

At the Medical School. Graduate work may be taken at the Medical School, under the Graduate Division, toward the degrees of M.A., M.S., and Ph.D. These degrees, as indicated previously, are conferred according to the major subject, in harmony with the 1932 allocations of major curricula and degrees.

At the Portland Extension Center. In a number of departments at the Portland Extension Center, it is possible to accomplish much or all of the work for the master's degrees. In other departments at least some portion of the work may be accomplished. Work toward the doctor's degree may not be taken at the Portland Extension Center.

Appointments for conferences between graduate students and the Graduate Dean or representatives of the Graduate Division from the State College or the University will be arranged by the Portland Center office.

Part IV

Research and Experimentation

Research

ENLARGEMENT of human knowledge and the rendering of technical and technological service to the commonwealth and its various subdivisions, industries, and interests are recognized functions of all institutions of higher learning. General research in the Oregon State System of Higher Education is fostered and supervised by the interinstitutional General Research Council, which is interinstitutional in function, and by special institutional research agencies. At the University research of a service nature and service studies are fostered and supervised by the Institutional Research Council and by the Commonwealth Service Council. At the State College special research activities are carried on through the Agricultural Experiment Station, including the home station and nine branch stations located in different sections of the state, and through the Engineering Experiment Station. At the Medical School general medical research and special research in the Nutritional Research Laboratory are carried on in the medical research division.

The General Research Council

EARL LEROY PACKARD, Ph.D., Dean and Director of Science; Chairman.

*HOWARD PHILLIPS BARSS, S.M., Professor of Botany and Plant Pathology.

WILLIAM ALFRED SCHOENFELD, M.B.A., Dean and Director of Agriculture.

WILLIAM EDMUND MILNE, Ph.D., Professor of Mathematics.

RALPH W. LEIGHTON, Ph.D., Executive Secretary of Research; Professor of Education.

ROBERT HOLMES SEASHORE, Ph.D., Associate Professor of Psychology.

OLOF LARSELL, Ph.D., Professor of Anatomy.

HOWARD RICE TAYLOR, Ph.D., Professor of Psychology.

CLARENCE VALENTINE BOYER, Ph.D., Dean and Director of Arts and Letters.

FRED ORVILLE MCMILLAN, M.S., Research Professor of Electrical Engineering.

Natural Science Divisional Council

WILLIAM EDMUND MILNE, Ph.D., Professor of Mathematics; Chairman.

WILLIBALD WENIGER, Ph.D., Professor of Physics.

WALTER BENO BOLLEN, Ph.D., Assistant Professor of Bacteriology.

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

NATHAN FASTEN, Ph.D., Professor of Zoology.

DON CARLOS MOTE, Ph.D., Professor of Entomology.

ROGER JOHN WILLIAMS, Ph.D., D.Sc., Professor of Chemistry.

EARL GEORGE MASON, M.F., Professor of Forestry.

JESSAMINE CHAPMAN WILLIAMS, M.A., Professor of Foods and Nutrition.

ETHEL IDA SANBORN, Ph.D., Associate Professor of Botany.

RALPH RUSKIN HUESTIS, Ph.D., Professor of Zoology.

WILL VICTOR NORRIS, D.Sc., Associate Professor of Physics.

FRANCIS ARCHIBALD GILFILLAN, Ph.D., Professor of Pharmacy.

*Resigned 1934.

Social Science Divisional Council

HOWARD RICE TAYLOR, Ph.D., Professor of Psychology; Chairman.
JAMES RALPH JEWELL, Ph.D., LL.D., Dean and Director of Education.
WAYNE LYMAN MORSE, LL.B., J.D., Dean and Director of Law.
CALVIN CRUMBAKER, Ph.D., Associate Professor of Economics.
LUTHER SHEELEIGH CRESSMAN, Ph.D., Professor of Sociology.
ERIC WILLIAM ALLEN, A.B., Dean and Director of Journalism.
ORIN KAY BURRELL, M.A., C.P.A., Associate Professor of Business Administration.
JAMES DUFF BARNETT, Ph.D., Professor of Political Science.
HARVEY GATES TOWNSEND, Ph.D., Professor of Philosophy.
JOSEPH WALDO ELLISON, Ph.D., Associate Professor of History.
MILTON NELS NELSON, Ph.D., Professor of Agricultural Economics.
ROBERT CARLTON CLARK, Ph.D., Professor of History.
MAUD MATHES WILSON, M.A., Professor of Home Economics.

Language, Literature, Art Divisional Council

CLARENCE VALENTINE BOYER, Ph.D., Dean and Director of Arts and Letters; Chairman.
GEORGE HOPKINS, A.B., Professor of Piano.
JUAN BAUTISTA RAEL, M.A., Assistant Professor of Romance Languages.
CLARA ELIZABETH SMERTENKO, Ph.D., Associate Professor of Latin and Greek.
GEORGE WILLIAMSON, Ph.D., Associate Professor of English.
NOWLAND BRITTIN ZANE, Associate Professor of Design.
ARTHUR LEE PECK, B.S., B.A., Professor of Landscape Architecture.

WITH the approval of the administration of the institutions concerned and of the State Board of Higher Education, a General Research Council was established in 1932 to provide for the research interests of the staff members at the State College and the University, as separate and apart from the research programs of the Agricultural Experiment Station and the Engineering Experiment Station at the State College and the University of Oregon special service and research councils.

The Council is organized as a general research council with three divisional councils. This general council is concerned with general policies affecting the research interests of staff members and is authorized to make grants-in-aid or otherwise assist the approved research project initiated by staff members. It is also the duty of the council to select and to make budgetary provision for publishing such research findings as it deems worthy of publication. The divisional councils further the research interests of the fields represented, and evaluate and examine the technical aspects, merit and feasibility of projects coming before them. Projects receiving the recommendation of these councils are submitted to the General Council for approval.

The General Research Council is the budgetary group and the chairman is the budgetary officer. The council prepares annually and submits to the Chancellor a budget for the support of general research and for the publication of the results of completed studies. From this budget grants are made by the General Research Council to individuals or groups of individuals of the rank of instructor or higher, for research projects that have met the approval and received the recommendation of the appropriate divisional council. Research assistantships normally carrying a stipend of $400.00 or $500.00 each are available for major research projects requiring the technical assistance of a graduate student. Formal applications for grants-in-aid or for research assistance are made to the chairman of the General Council or to the appropriate divisional council.

The Agricultural Experiment Station

WILLIAM ALFRED SCHOENFELD, M.B.A., Director of the Agricultural Experiment Station.

RALPH STEPHEN BESSE, M.S., Vice-Director of Agricultural Experiment Station.

DIVISION OF AGRICULTURAL ECONOMICS

ERMINE LAWRENCE POTTER, M.S., Agricultural Economist; In Charge, Division of Agricultural Economics.

Agricultural Economics

WILLIAM HENRY DREESEN, Ph.D., Agricultural Economist.

Farm Management

HENRY DESBOROUGH SCUDDER, B.S., Economist (Farm Management).

HALBERT EDGERTON SELBY, M.S., Associate Economist (Farm Management).

GUSTAV WESLEY KUHLMAN, M.S., Associate Economist (Farm Management).

ARNOLD STEWART BURRIER, M.S., Associate Economist (Farm Management).

DIVISION OF ANIMAL INDUSTRIES

PHILIP MARTIN BRANDT, A.M., Dairy Husbandman; In Charge, Division of Animal Industries.

Animal Husbandry

ORAN MILTON NELSON, M.S., Animal Husbandman.

ALFRED WEAVER OLIVER, M.S., Assistant Animal Husbandman.

Dairy Husbandry

IDWAL RALPH JONES, Ph.D., Associate Dairy Husbandman.

Poultry Husbandry

ALFRED GUNN LUNN, B.S., Poultry Husbandman.

FRANK LESTER KNOWLTON, M.S., Poultry Husbandman.

FRANK ELMER FOX, M.S., Associate Poultry Husbandman.

Veterinary Medicine

BENNETT THOMAS SIMMS, D.V.M., Veterinarian.

WALTER THEODORE JOHNSON, B.S., D.V.M., Poultry Pathologist.

JAMES NIVEN SHAW, D.V.M., Associate Veterinarian.

ROBERT JAY, D.V.M., Associate Veterinarian, Bureau of Animal Industries, United States Department of Agriculture.

ERNEST MILTON DICKINSON, D.V.M., Assistant Poultry Pathologist.

FONSOE MARION BOLIN, D.V.M., Assistant Veterinarian, Agricultural Experiment Station; Cooperative Agent, United States Department of Agriculture.

OTTO HERBERT MUTH, D.V.M., Assistant Veterinarian, Agricultural Experiment Station; Cooperative Agent, United States Department of Agriculture.

OWEN LESTER SEARCY, B.S., Technician in Veterinary Medicine.

DIVISION OF PLANT INDUSTRIES

GEORGE ROBERT HYSLOP, B.S., Agronomist; In Charge, Division of Plant Industries.

Farm Crops

HARRY AUGUST SCHOTH, M.S., Associate Agronomist; Forage Crops and Disease Investigation, United States Department of Agriculture.

DONALD DAVID HILL, M.S., Associate Agronomist.

DAVID CLYDE SMITH, Ph.D., Assistant Agronomist.

BRITTAIN BRAGUNIER ROBINSON, Ph.D., Assistant Plant Breeder, United States Department of Agriculture.

GRACE COLE FLEISCHMAN, A.B., Assistant Botanist, Division of Seed Investigations, United States Department of Agriculture.

ALVIN EUGENE GROSS, B.S., Research Fellow in Farm Crops.

Horticulture

WALTER SHELDON BROWN, D.Sc., Horticulturist.

ARTHUR GEORGE BRISTOW BOUQUET, M.S., Horticulturist (Vegetable Crops).

ERNEST HERMAN WIEGAND, B.S.A., Horticulturist (Horticultural Products).

HENRY HARTMAN, M.S., Horticulturist (Pomology).

CARL EPHRIAM SCHUSTER, M.S., Horticulturist, United States Department of Agriculture.

WILLIS PIERRE DURUZ, Ph.D., Horticulturist (Plant Propagation).

GEORGE FORDYCE WALDO, M.S., Assistant Pomologist, Department of Horticulture.

BLISS F. DANA, M.S., Pathologist (Horticultural Crops and Diseases), United States Department of Agriculture.

JAMES CECIL MOORE, M.S., Assistant Horticulturist (Pomology).

THOMAS ONSDORFF, B.S., Assistant Horticulturist (Horticultural Products).

Soil Science

WILBUR LOUIS POWERS, Ph.D., Soil Scientist.

CHARLES VLADIS RUZEK, M.S., Soil Scientist (Fertility).

MORTIMER REED LEWIS, C.E., Irrigation and Drainage Engineer, Bureau of Agricultural Engineering, United States Department of Agriculture.

ROSCOE ELMO STEPHENSON, Ph.D., Associate Soil Scientist.

EDWARD FRITCHOFF TORGERSON, B.S., Assistant Soil Scientist (Soil Survey).

OTHER DEPARTMENTS

Agricultural Chemistry

J. SHIRLEY JONES, M.S.A., Chemist in Charge.

REGINALD HEBER ROBINSON, M.S., Chemist (Insecticides and Fungicides).

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

DELOSS EVERETT BULLIS, M.S., Assistant Chemist (Horticultural Products).

MILES BRAYTON HATCH, B.S., Assistant Chemist.

Agricultural Engineering

FREDERICK EARL PRICE, B.S., Agricultural Engineer.

CLARENCE IVAN BRANTON, B.S., Assistant Agricultural Engineer.

Bacteriology

GODFREY VERNON COPSON, M.S., Bacteriologist in Charge.

JOSEPH ELLSWORTH SIMMONS, M.S., Associate Bacteriologist.

WALTER BENO BOLLEN, Ph.D., Assistant Bacteriologist.

Entomology

DON CARLOS MOTE, Ph.D., Entomologist in Charge.

ANDREW OLOF LARSON, M.S., Entomologist (Stored Products Insects), United States Department of Agriculture.

BENJAMIN GARRISON THOMPSON, M.S., Assistant Entomologist.

FRANK GERALD HINMAN, M.S., Junior Entomologist (Stored Products Insects), United States Department of Agriculture.

SIDNEY CARROLL JONES, M.S., Assistant Entomologist.

KENNETH WIESNER GRAY, B.S., Field Assistant (Entomology).

WILLIAM DONALD EDWARDS, B.S., Field Assistant (Entomology).

ROLAND EUGENE DIMICK, M.S., Assistant Entomologist.

Home Economics

MAUD MATHES WILSON, A.M., Home Economist.

Plant Pathology

CHARLES ELMER OWENS, A.M., Plant Pathologist.

SANFORD MYRON ZELLER, Ph.D., Plant Pathologist.

FLOYD DOUGLAS BAILEY, M.S., Associate Plant Pathologist, United States Department of Agriculture.

LESLIE NEWTON GOODDING, B.A., B.S., Associate Pathologist, United States Department of Agriculture.

FRANK PADEN MCWHORTER, Ph.D., Pathologist.

PAUL WILLIAM MILLER, Ph.D., Associate Pathologist, United States Department of Agriculture.

GODFREY RICHARD HOERNER, M.S., Agent, United States Department of Agriculture.

THEODORE DYKSTRA, M.S., Assistant Plant Pathologist, United States Department of Agriculture.

ALBERT RODERICK SPRAGUE, JR., Ph.D., Assistant Pathologist, United States Department of Agriculture.

HORACE HANNA MILLSAP, Agent, Bureau of Plant Industry, United States Department of Agriculture.

Publications and News Service

CHARLES DAVID BYRNE, M.S., Director of Information.

EDWIN THOMAS REED, B.S., A.B., Editor of Publications.

DELMER MORRISON GOODE, B.A., Associate Editor of Publications.

JOHN COLE BURTNER, B.S., Associate in News Service.

BRANCH STATIONS

DAVID EDMUND STEPHENS, B.S., Superintendent, Sherman County Branch Experiment Station, Moro; Senior Agronomist, United States Department of Agriculture.

LEROY CHILDS, A.B., Superintendent, Hood River Branch Experiment Station, Hood River.

FRANK CHARLES REIMER, M.S., Superintendent, Southern Oregon Branch Experiment Station, Talent.

DALE EVERETTE RICHARDS, B.S., Superintendent, Eastern Oregon Branch Experiment Station, Union.

HAROLD KARL DEAN, B.S., Superintendent, Umatilla Branch Experiment Station, Hermiston.

OBIL SHATTUCK, M.S., Superintendent, Harney Valley Branch Experiment Station, Burns.

ALBERT EDWARD ENGBRETSON, B.S., Superintendent, John Jacob Astor Branch Experiment Station, Astoria.

GEORGE ADAMSON MITCHELL, B.S., Acting Superintendent, Pendleton Field Station, Pendleton; Assistant Agronomist, Division of Dry Land Agriculture, United States Department of Agriculture.

GORDON GEORGE BROWN, A.B., B.S., Horticulturist, Hood River Branch Experiment Station, Hood River.

ARCH WORK, B.S., Associate Irrigation Engineer, Bureau of Agricultural Engineering, United States Department of Agriculture.

WILLARD WALKER ALDRICH, Ph.D., Assistant Horticulturist, Bureau of Plant Industry, United States Department of Agriculture.

LOUIS GUSTAVE GENTNER, M.S., Associate Entomologist, Southern Oregon Branch Experiment Station, Talent.

JAMES FOSTER MARTIN, M.S., Junior Agronomist, Division of Cereal Crops and Diseases, United States Department of Agriculture.

MERRILL MAHONRI OVESON, M.S., Assistant to Superintendent, Sherman County Branch Experiment Station, Moro.

ROBERT BILLINGS WEBB, M.S., Junior Agronomist, United States Department of Agriculture, Sherman County Branch Experiment Station, Moro.

ROY EMERY HUTCHISON, B.S., Assistant to Superintendent, Harney Valley Branch Experiment Station, Burns.

OREGON State Agricultural Experiment Station was organized July 2, 1888, in accordance with the Act of Congress of 1887 known as the Hatch Act. The Experiment Station includes the Home Station at Corvallis and nine branch stations advantageously located in such a way as to cover the varying agricultural conditions of Oregon.

The Home Station. At the Home Station about 900 acres of land are used by the College and Station workers engaged in the scientific investigation of problems presented by the different branches of agriculture. The Station includes the following departments: Agricultural Economics, Agricultural Engineering, Animal Husbandry, Bacteriology, Chemistry, Dairy Husbandry, Entomology, Farm Crops, Farm Management, Home Economics, Horticulture, Plant Pathology, Poultry Husbandry, Soils, and Veterinary Medicine.

The scientific investigations of the Station Staff strongly support the instruction given in the classroom and through the Extension Service. Aside from the original investigations of economic significance to agriculture, the work affords daily object lessons in modern farm methods. To the students in the various fields of study the value of the investigative work can hardly be overestimated. To the state, from the point of view of economic progress, its value has been greater, in the estimation of many people, than the entire cost of the College to the commonwealth. The work of the Experiment Station is fundamental in the agricultural development of the state. Oregon's soil and climatic conditions present many problems that are unique and that must be solved before the state can develop its great potential agricultural wealth.

The Branch Stations. The nine branch stations located at Astoria, Burns, Hermiston, Hood River, Medford, Moro, Talent, Union, and Pendleton conduct experiments on the major agricultural problems of their respective agricultural sections of the state.

The John Jacob Astor Branch Experiment Station. The major problems under investigation at this station are dairying, improvement of farm crops, soil fertility, and soil management for Coast conditions and the drainage, improvement, and cultivation of tide-lands.

The Harney Valley Branch Experiment Station at Burns is conducting experiments in both dry-farming and irrigation agriculture.

The Umatilla Branch Experiment Station at Hermiston is studying problems of agriculture under irrigation on the Umatilla Reclamation Project and similar lands of the Columbia River Basin.

The Hood River Branch Experiment Station deals with orchard pests and horticultural problems of this important orcharding section.

The Sherman County Dry-Farm Branch Experiment Station at Moro is conducting investigations on the major problems of dry-land farming in the Columbia Basin.

The Southern Oregon Branch Experiment Station at Talent is centering attention almost wholly upon problems involved in fruit production in this important fruit-growing region.

The Eastern Oregon Branch Experiment Station at Union is equipped with land and buildings for experiments with both livestock and farm crops.

The Medford Branch Experiment Station is conducted jointly by the United States Department of Agriculture, Bureaus of Plant Industry and of Agricultural Engineering, and the Oregon Agricultural Experiment Station. The major investigations deal primarily with problems affecting pear production.

The Pendleton Branch Experiment Station is equipped with 160 acres of land in an important wheat-growing belt for the purpose of establishing and maintaining crop rotation investigations and other problems of wheat growing.

The Engineering Experiment Station

RICHARD HAROLD DEARBORN, A.B., E.E., Acting Director of the Engineering Experiment Station.

SAMUEL HERMAN GRAF, M.E., M.S., Director of Engineering Research.

*FREDERICK GOTTLIEB BAENDER, M.M.E., Mechanical Engineering.

WALLACE HOPE MARTIN, M.E., M.S., Mechanical Engineering.

GEORGE WALTER GLEESON, M.S., Chemical Engineering.

BURDETTE GLENN, M.S., Highway Engineering.

CHARLES SAMUEL KEEVIL, Sc.D., Chemical Engineering.

FRED ORVILLE MCMILLAN, M.S., Electrical Engineering.

FRED MERRYFIELD, M.S., Sanitary Engineering.

CHARLES ARTHUR MOCKMORE, C.E., M.S., Civil and Hydraulic Engineering.

WILLIAM HOWARD PAUL, B.S., Automotive Engineering.

EUGENE CARL STARR, B.S., Electrical Engineering.

ROBERT EDWARD SUMMERS, M.S., Mechanical Engineering.

CHARLES EDWIN THOMAS, M.M.E., Engineering Materials.

Technical Counselors

CLAIR VAN NORMAN LANGTON, Dr.P.H., Technical Councelor in Sanitary Engineering.

CONDE BALCOM MCCULLOUGH, Eng.D., Technical Counselor in Structural Engineering.

*On leave of absence 1934-35.

BY act of the Board of Regents of the State College on May 4, 1927, the Engineering Experiment Station was established at Corvallis to serve the state in a manner broadly outlined by the following policy:

(1) To serve the industries, utilities, professional engineers, public departments, and engineering teachers by making investigations of significance and interest to them.

(2) To stimulate and elevate engineering education by developing the research spirit in faculty and students.

(3) To publish and distribute through bulletins, circulars, and technical articles in periodicals the results of such studies, surveys, tests, investigations, and researches as will be of greatest benefit to the people of Oregon, and particularly to the state's industries, utilities, and professional engineers.

The Engineering Experiment Station is an integral part of the School of Engineering. All staff members and laboratory facilities of the Engineering School are available for the investigational work of the Station to the extent of the sums allocated or contributed for their operation and support. Much of the work of the Station has been made possible by the assistance of industries and state and national associations.

The dean of engineering is director of the station and the heads of the various major departments function as a council ex-officiis. The director of research acts as chairman of the council, technical adviser upon investigational work and as engineering editor of publications. The active staff is composed of members of the instructional staff who may be interested in various specific research projects, and of research fellows who are pursuing graduate study and are assigned to part-time work in the Station. Experts who are especially qualified by training and experience to advise upon the investigations in certain fields have been appointed to the staff as special technical counselors. Some technical assistants have been supported by manufacturers and industrial associations interested in working out specific problems.

Part V

Extension

Extension

THROUGH extension the benefits of all the state institutions of higher education are brought to the people of the state in their own communities. All divisions of the state system of higher education seek through every means possible, so far as resources and facilities permit, to serve the entire state. All extension activities of the several institutions are administered through two great coordinated extension services: the General Extension Division and the Federal Cooperative Extension Service.* The latter includes all extension activities carried on jointly with the Federal government.

General Extension Division

Administration

ALFRED POWERS, B.A., Dean and Director of General Extension and Summer Sessions; Professor of Journalism.

DAN E. CLARK, Ph.D., Assistant Director of General Extension and Summer Sessions; Professor of History.

WILLIAM GILBERT BEATTIE, B.A., Assistant Director of Portland Summer Session; Associate Professor of Education; Head of Department of Social Welfare.

MARY E. KENT, B.A., Office Manager, General Extension.

HILDA O. COOPER, B.A., Secretary, Summer Sessions.

SHIRLEY F. WRIGHT, Stenographer, General Extension.

VESTA ORRICK, B.S., Mimeograph Clerk, General Extension.

Correspondence Study

MOZELLE HAIR, B.A., Head, Correspondence Study; Assistant Professor of Sociology.

IRENE C. GRANT, Record Clerk, Correspondence Study.

HELEN K. KILPATRICK, Clerk, Correspondence Study.

Portland Extension Center

ALFRED POWERS, B.A., Dean and Director of General Extension.

MABLE HOLMES PARSONS, M.A., Professor of English.

*The Federal Cooperative Extension Service, which is closely coordinated with the General Extension Division, is charged with extending to the residents of the state the benefits, advantages, and available information of the State College and of the United States department of agriculture in agriculture and home economics. This service includes all forms of cooperative off-campus instruction and assistance in those subjects which through extension methods can be taken and adapted to the direct needs of the people of the state, particularly in enlarging and enriching the agricultural and home interests of Oregon.

ALEXANDER GOLDENWEISER, Ph.D., Professor of Thought and Culture.

F. MIRON WARRINGTON, Diplome de l'Université de Paris, Professor of Romance Languages.

PHILIP W. JANNEY, B.A., C.P.A., Assistant Professor of Business Administration.

PERCY M. COLLIER, B.A., LL.B., Assistant Professor of English.

HELEN MILLER SENN, B.A., Instructor in Public Speaking.

MARGARET M. SHARP, Secretary, Portland Extension Center.

MAURINE CHURCHILL, Stenographer, Portland Extension Center.

Radio Station KOAC

*WALLACE LA DUE KADDERLY, B.S., Manager, Radio Station KOAC.

WILLIAM GILBERT BEATTIE, B.A., Acting Manager, Radio Station KOAC.

LUKE LEA ROBERTS, Program Director.

CYRUS RIPLEY BRIGGS, B.S., Director of Agricultural Programs.

ZELTA FEIKE RODENWOLD, M.S., Director of Home Economics Programs.

JAMES MADISON MORRIS, B.S., Announcer.

DONALD KNEASS, Announcer.

ANTHONY HENDERSON EUWER, Announcer.

GRANT STEPHEN FEIKERT, M.S., Engineer.

OLIVER D. PERKINS, M.S., Assistant Engineer.

RUTH BELLROOD, B.S., Secretary.

Visual Instruction

URIEL SELLERS BURT, Associate Professor of Visual Instruction; Head of Department.

RUTH P. ADAMS, Secretary, Visual Instruction.

THE General Extension Division of the Oregon State System of Higher Education is that agency of the University of Oregon, Oregon State Agricultural College, and the three Oregon Normal Schools which serves the people of the state with formal instruction in extension classes, correspondence study, and adult education through visual instruction, municipal service, radio, and social welfare. Its work is organized into the following departments:

At Eugene—

Correspondence Study
Social Welfare
State-Wide Extension Classes
Municipal Service

* On leave of absence.

At Corvallis—
Visual Instruction
Radio

At Portland—
The Portland Extension Center

A State-Wide Campus. Through the General Extension Division the curricula, personnel, and facilities of all the state institutions of higher education are made available in some degree to every citizen, group, and community in Oregon. The activities of the General Extension Division are carried on in close cooperation with those of the Federal Cooperative Extension Service and all other organized service agencies in the state.

Portland Extension Center. General Extension in Portland is carried on through the Portland Extension Center. Nearly one hundred evening, late afternoon, and Saturday morning classes in twenty-four different departments and professional schools are available during the academic year 1933-34. The work of these classes is of standard college or university grade. The courses are intended for persons who, because of preoccupation with bread winning or with home making, or for other reasons, cannot attend college. In these classes residence credit may be earned at the University, the State College, or the normal schools. Courses are offered in the Portland Extension Center carrying graduate credit at both the University and the State College, but work toward the doctor's degree may not be taken in the Portland Extension Center. For detailed information concerning the Portland Extension Center see special bulletin.

Visual Instruction. Visual Instruction service includes glass and film slides, microscopic slides, and motion picture films usable for educational purposes by schools, community clubs, and other appropriate organizations.

A special catalog is published listing the material available.

Radio Station KOAC. The state radio station, first opened in 1925, is operated entirely in the interest of the Oregon public. Programs broadcast by station KOAC are arranged by the General Extension Division and are entirely free from commercialism.

The radio service is used as a means of extending throughout the state the benefits of the varied activities of all the state institutions of higher education. KOAC operates with 1,000 watts power on a frequency of 550 kilocycles by authority of the Federal Radio Commission.

The Summer Sessions. The summer sessions, although a phase of resident instruction since the summer sessions are centered on the several campuses, are administered under the General Extension Division. The 1934 summer sessions include regular six-week sessions at Eugene, Corvallis, and Portland (Portland Extension Center), offering undergraduate and graduate courses, with a post session of one month at Eugene, and six-week sessions at the three normal schools, with an additional five-weeks session at the Oregon Normal School at Monmouth. Information concerning the summer sessions is issued in separate bulletins.

Federal Cooperative Extension

WILLIAM ALFRED SCHOENFELD, M.B.A., Dean and Director of Agriculture.
JOHN MYERS CLIFFORD, Extension Secretary.

Extension Staff at Corvallis

HARRY CASE SEYMOUR, State Leader of 4-H Club Work.
FRANK LLEWELLYN BALLARD, B.S., State County Agent Leader.
LE ROY BREITHAUPT, B.S., Extension Agricultural Economist.
GEORGE OURY GATLIN, LL.B., Extension Economist in Marketing.
OVID TULLIUS MCWHORTER, B.S., Extension Horticulturist.
CLARIBEL NYE, M.A., State Leader of Home Economics Extension.
EDWIN RUSSELL JACKMAN, B.S., Extension Agronomist.

HELEN JULIA COWGILL, M.A., Assistant State Club Leader.
LEONARD JOHN ALLEN, M.S., Assistant State 4-H Club Leader.
HUBERT ELMER COSBY, Extension Poultryman.
HARRY ARTHUR LINDGREN, B.S., Extension Animal Husbandman.
WILLIAM LEROY TEUTSCH, B.S., Assistant County Agent Leader.
ROGER WILLIAM MORSE, B.S., Extension Dairyman.
AZALEA LINFIELD SAGER, M.A., State Specialist in Clothing and Textiles.
URIEL SELLERS BURT, State Specialist in Visual Instruction.

LUCY ADA CASE, M.A., Extension Specialist in Nutrition.

HAROLD H. WHITE, B.S., Assistant Agricultural Economist.
ARTHUR SOLOMON KING, M.S., Extension Specialist in Soils.
GERTRUDE LONETTE SKOW, B.S., County Home Demonstration Agent at Large.

County Extension Agents

CHARLES ALBERT HENDERSON, B.S., County Agricultural Agent, Klamath County.
OTTIS SCHULER FLETCHER, M.S., County Agricultural Agent, Lane County.
WALTER ARMAND HOLT, B.S., County Agricultural Agent, Umatilla County.
HARRY GRANT AVERY, B.S., County Agricultural Agent, Union County.
ROBERT GREY FOWLER, B.S., County Agricultural Agent, Jackson County.

SYLVESTER BENJAMIN HALL, B.S., County Agricultural Agent, Multnomah County.
WILLIAM BENJAMIN TUCKER, County Agricultural Agent, Crook County.
GEORGE ALLEN NELSON, B.S., County Agricultural Agent, Columbia County.

PHILIP TUTHILL FORTNER, B.S., County Agricultural Agent, Baker County.
JAMES RALPH BECK, B.S., County Agricultural Agent, Polk County.
JOHN JERRY INSKEEP, B.S., County Agricultural Agent, Clackamas County.
CHARLES WESLEY SMITH, B.S., County Agricultural Agent, Morrow County.
RAYMOND GILBERT LARSON, B.S., County Agricultural Agent, Malheur County.
DAVID HONORE KENNEDY, B.S., County Club Agent, Tillamook County.
SARA HUNTINGTON WERTZ, B.S., Home Demonstration Agent, Josephine County.
LYLE PORTER WILCOX, B.S., County Agricultural Agent, Jackson County.
MELVIN J. CONKLIN, B.S., County Agricultural Agent, Lincoln County.
SOLON TAYLOR WHITE, B.S., County Agricultural Agent, Yamhill County.
NOBLE CLARK DONALDSON, B.S., County Agricultural Agent, Wallowa County.
RICHARD CARL KUEHNER, B.S., County Club Agent, Lane County.
ARCHIE LEE MARBLE, B.S.A., County Agricultural Agent, Hood River County.
SARAH VINEYARD CASE, M.S., Home Demonstration Agent, Columbia County.
MABEL CLAIR MACK, B.S., Home Demonstration Agent, Jackson County.
WILLIAM FLETCHER CYRUS, B.S., County Agricultural Agent, Washington County.
WILBUR WRAY LAWRENCE, B.S., County Agricultural Agent, Wasco County.
VICTOR WALDEMAR JOHNSON, B.S., County Agricultural Agent, Lake County.
GEORGE HERRICK JENKINS, B.S., County Agricultural Agent, Coos County.
RAY GEORGE JOHNSON, B.S., County Agricultural Agent, Grant County.
RUSSEL MELVILLE MCKENNON, B.S., County Agricultural Agent, Gilliam County.

FRANK WILLIAM SEXTON, County Club Agent, Klamath County.
JAMES ROLAND PARKER, M.S., County Agricultural Agent, Douglas County.
LEROY CLINTON WRIGHT, B.S., County Club Agent, Clackamas County.
CLAY CARL MILLER, B.S., County Club Agent, Multnomah County.
ROBERT MYRON KNOX, B.S., Assistant County Agent, Coos-Curry counties.
WILLIAM SAMUEL AVERILL, B.S., County Agricultural Agent, Benton County.
FRANCES ANN CLINTON, M.S., Home Demonstration Agent, Multnomah County.
THELMA CHARLOTTE GAYLORD, B.S., Home Demonstration Agent, Clackamas County.
ERNEST MILLARD HAUSER, B.S., Assistant County Agent, Malheur County.
GUSTAVE YNGVE HAGGLUND, B.S., County Agricultural Agent, Deschutes County.
GARNET DOUGLAS BEST, B.S., Assistant County Agent, Umatilla County.
CALLA VAN SYCKLE, M.S., Home Demonstration Agent, Deschutes County.
JOSEPH BELANGER, Assistant County Agent, Washington County.
CHESTER HAROLD BERGSTROM, B.S., County Agricultural Agent, Tillamook County.
CLIFFORD LOVEJOY SMITH, M.S., County Agricultural Agent, Clatsop County.

WAYNE D. HARDING, County Club Agent, Marion County.

CHARLES J. WEBER, Urban Club Agent, Portland.

FLOYD CHARLES MULLEN, B.S., County Agricultural Agent, Linn County.

PERRY NOLAN JOHNSTON, B.S., County Agricultural Agent, Sherman County.

HARRY LABARE RICHES, B.S., County Agricultural Agent, Marion County

RALPH EDWARD BROOKE, M.S., Assistant County Agent, Klamath County.

HENRY HARDY RAMPTON, M.S., Emergency Agricultural Assistant, Union County.

REX WARREN, M.S., Emergency Agricultural Assistant, Yamhill County.

CLIFFORD CHARLES JENKINS, B.S., Emergency Agricultural Assistant, Baker County.

KENNETH WHITE SAWYER, B.S., Emergency Agricultural Assistant, Clackamas County.

HAMILTON BRUCE SHAWE, B.S., Emergency Agricultural Assistant, Lane County.

LINDEN ELI HARRIS, M.S., Emergency Agricultural Assistant, Malheur County.

LAWRENCE EDWARD FRANCIS, B.S., Emergency Agricultural Assistant, Polk County.

NOLAND ADOLPH JACOBSEN, B.S., Emergency Agricultural Assistant, Umatilla County.

KENNETH E. CARL, B.S., Emergency Agricultural Assistant, Tillamook County.

OSCAR EDWIN MIKESELL, B.S., Emergency Agricultural Assistant, Linn County.

FEDERAL Cooperative Extension, closely coordinated with the work of the General Extension division, performs one of the three great functions of Oregon State Agricultural College, which include: resident instruction, research and experimentation, and college extension. The Extension Service is charged with the duty of extending the benefits advantages, and available information of the College and of the United States Department of Agriculture to every portion of the state and to all those persons who for any reason are unable to come to the College.

The Farm and Home Interests of Oregon. The Extension Service includes all forms of cooperative off-campus instruction and assistance in those subjects in the College curriculum which lend themselves to extension methods or which can be taken and adapted to the direct needs of the people of the state. The various extension activities are the means through which information, instruction, assistance, and methods of self-help are carried to all persons who desire them at any point within the state. In brief, the Extension Service represents the medium, both independently and in hearty cooperation with all other organized forces of betterment, for enlarging and enriching the agricultural and home interests of Oregon. No county, town, hamlet, farm, or home need be without some evidence of this service.

Extension Projects. In order to assure the maximum of efficiency, extension work is conducted on the basis of definitely planned projects. These require approval by the proper College authority and the Secretary

of the United States Department of Agriculture before federal funds are made available.

The several distinct lines of work now covered by written projects, from which the citizens of some portion of the state are receiving benefit, include:

(1) General Administration and Organization of the Extension Service.
(2) Field Meetings.
(3) County Agricultural Agent Service.
(4) Home Demonstration Work.
(5) Nutrition.
(6) Four-H Club Work.
(7) Soils.
(8) Horticulture.
(9) Animal Husbandry.
(10) Dairying.
(11) Poultry Husbandry.
(12) Farm Crops.
(13) Agricultural Economics, including Marketing and the Collection and Dissemination of Agricultural Statistical Information.
(14) Rodent Control.
(15) Preparation, Printing, and Distribution of Bulletins.
(16) Visual Instruction, including chart service, lantern slides, motion-pictures.
(17) Clothing and Textiles.

It should not be assumed that these projects cover the only problems of importance within the state. It is the purpose to put into operation and to emphasize those lines of Extension Service that are fundamental to large and important interests of farm or home welfare, or to material agricultural development.

Part VI

Miscellaneous

Sixty-fifth Annual Commencement

(Students designated by asterisks received their degrees at the close of the 1933 summer session.)

Advanced Degrees (Honorary)

DOCTORS OF LAWS

LOUIS GAYLORD CLARKE
Graduate (1875), Philadelphia College of Pharmacy.

UBERTO MERSON DICKEY

DOCTOR OF LITERATURE

FREDERICK BERCHTOLD
B. in Ped. (1879), State Normal, Berne, Switzerland; A.B. (1899), A.M. (1910), National University.

DOCTOR OF ENGINEERING

CONDÉ BALCOM MCCULLOUGH
B.S. (C.E.) (1910), C.E. (1916), Iowa State; LL.B. (1928), Willamette.

Advanced Degrees (Graduate Division)

MASTERS OF ARTS

B NORMAN GONZALES
Tracy, California
A.B., 1928, College of the Pacific.
Thesis: A Contribution to the Paleontology of the Paleozoic Faunas of Central Oregon.

HERBERT L. JONES
Corvallis
B.A., 1926, University of Oregon.
Thesis: Development and Study of a Four Wire Echo Suppressor Using a Double Anode Gas Filled Tube.

ROBIN EMERSON MOSER
Salem
A.B., 1930, Willamette University.
Thesis: The Ionization Constant of Pantothenic Acid.

ALFRED TAYLOR
Corvallis
B.A., 1932, University of Oregon.
Thesis: Skeletal Changes Associated With Increasing Body Size.

MASTERS OF SCIENCE

BESSIE THOMPSON ARNOLD
Tillamook
B. S., 1919, Commerce, Oregon State College.
Thesis: A Remedial Program in High School Algebra.

HOWARD GLEN BARNETT
Salem
B.S., 1931, Electrical Engineering, Oregon State College.
Thesis: Crest Measurements of Radio-Frequency Electromagnetic Radiations From High-Voltage Transmission Lines.

HAROLD WILLIAM BERG
Salem
B.S., 1932, Chemical Engineering, Oregon State College.
Thesis: Sludging In Internal Combustion Motors.

BETTY BROWN
Beaverton
B.S., 1933, Science, Oregon State College.
Thesis: Contractions Accompanying the Swelling of Gelatine in Solutions of Varying pH.

KENDALL EDWARDS BURKE
Dallas
B.S., 1932, Education, Oregon State College.
Thesis: An Effort to Discover and Evaluate Certain Religious Attitudes.

MARJORIE BERNICE CHAPMAN
Oakland, California
B.S., 1924, Pacific Union College, Angwin, California.
Thesis: A Study of the Homemaking Experiences and Interests of the Girls in Pacific Union and Walla Walla Colleges.

ALAN WILFRED COBB
Portland
B.S., 1932, Chemical Engineering, Oregon State College.
Thesis: The Thermochemistry of Hydrazine: (1) Construction of an Automatic Adiabatic Calorimeter. (2) Determination of Specific Heat Capacities.

LAURENCE EDWIN DARLINGTON
Corvallis
B.S., 1932, Education, Oregon State College.
Thesis: Educational Opportunities and Schools of the United States Army.

MILES EDWARD DRAKE
Portland
B.S., 1933, Pharmacy, Oregon State College.
Thesis: Umbellulone: Pharmacological and Bactericidal Properties.

GEORGE WALTER GLEESON
Corvallis
B.S., 1928, Chemical Engineering, Oregon State College.
Thesis: Aggregate Grading for Mechanically Compacted Concrete Pipe.

ROBY DELOSS GOFF
Phoenix, Arizona
B.S., 1926, Industrial Arts, Oregon State College.
Thesis: The Teaching of Elementary Forging by the Contract Method.

RUTH WESTCOTT HANSEN
Gaston
B.S., 1933, College of Medical Evangelists, Loma Linda, California.
Thesis: A Graphical Study of Food Costs of the Department of Dormitories, Oregon State Agricultural College.

MILES BRAYTON HATCH
Corvallis
B.S., 1930, State College of Washington.
Thesis: Volatization Studies of Spray Oils.

HANS HOFFMANN
Switzerland
M. S., 1926, The Confederated Technical College, Zurich, Switzerland.
Thesis: The Comparative Efficiency of Different Types of Dairy Farm Milk Coolers.

EDGAR FULLER HOWARD
Corvallis
B.S., 1932, Mechanical Engineering, Oregon State College.
Thesis: The Biochemical Oxygen Demand Studies of Sewage and Industrial Wastes in the Willamette Valley.

LEE OSCAR HUNT
Corvallis
B.S., 1932, Forestry, Oregon State College.
Thesis: Ecological Anatomy of Woody Plants With Special Reference to Leaf Variations.

WILLIAM JACK INGRAM
Albany
B.A., 1932, Albany College.
Thesis: Combining Weights of Proteins.

HOWARD THEODORE JOHNSTON
Croswell, Michigan
M.S., 1932, Michigan State College.
Thesis: Flax Retting.

WALTER RICHARD JONES
Corvallis
B.S., 1923, Mechanical Engineering, University of Washington.
Thesis: Polar Analysis of Beam-Columns for Aircraft.

ELWOOD JOHN KEEMA
Sacramento, California
B.S., 1933, Education, Oregon State College.
Thesis: A Comparative Study of American and Japanese Students.

RUSSELL BRADFORD KIDDER
Chico, California
B.S., 1923, Industrial Arts, Oregon State College.
Thesis: A Review of the General Shop Movement in Industrial Arts Education.

DELMAN VERNON KUYKENDALL, JR.
Klamath Falls
B.S., 1932, University of Oregon.
Thesis: The Effect of Hydrogen Ion Concentration Upon the Absorption of Dyes by Cellulose and Fillers.

FLOYD LLEWELLYN LANGDON
Corvallis
B.S., 1932, Agriculture, Oregon State College.
Thesis: A Preliminary Study of Contributions of Oregon Farms to the Aid of the Unemployed During the Depression 1933-1934.

DONALD KUO-CHIH LEE
Portland
B.S., 1932, Pharmacy, Oregon State College.
Thesis: The Potency of Oregon Foxglove (Digitalis Species).

ESTHER TANNER LONG
Fullerton, California.
B.A., 1918, The Ohio State University.
Thesis: The Use of Individual Instruction Sheets in High School Foods Classes.

WILLIAM ERNEST MCKITRICK
Eugene
B.S., 1932, University of Oregon.
Thesis: The Geology of the Suplee Paleozoic Series of Central Oregon.

DONALD LESLIE MASSON
Monroe
B.S., 1926, Mining Engineering, Oregon State College.
Thesis: The Undergraduate College Preparation in the Subjects That They are Teaching of Oregon State College Trained Teachers in the Year 1933-34.

JEAN ELIZABETH MILLICAN
Leaburg
B.S., 1925, University of Oregon.
Thesis: A Study of the Differential Equation

$$(1 - x^2)\frac{d^2 z}{dx^2} - 3x\frac{dz}{dx} + (m^2 - 1)\, z = 0.$$

LEONARD ALBERT MOORE
Corvallis
B.S., 1932, Industrial Arts, Oregon State College.
Thesis: An Evaluation of Certain High School Subject-matter Groups in Terms of Their Contributions to the Seven Objectives of Secondary Education, Based upon a Study of Selected High Schools in Washington, Oregon, and California.

MAUD MUELLER MORSE
Portland
B.S., 1927, Home Economics, Oregon State College.
Thesis: The Use of Nursery School in the Teaching of Child Development at the College Level.

EVERALD ELMER NELSON
Corvallis
B.S., 1932, Forestry, Oregon State College.
Thesis: A Method for Predicting the Drying Times for Douglas Fir Heartwood.

RICHARD ALEXANDER NIXON
West Linn
B.S., 1925, Agriculture, Oregon State College.
Thesis: A Study of the Financial Methods of Extra-curricular Activities in the Secondary Schools of Oregon.

MATTHEW JENNINGS O'DELL
Portland
B.S., 1933, Chemical Engineering, Oregon State College.
Thesis: The Effect of Ponding and Aeration on the Biochemical Oxygen Demand of Sulfite Liquors.

JOHN RAYMOND PARKER
Corvallis
B.S., 1932, Forestry, Oregon State College.
Thesis: The Grasslands of North America.

ROY LAVELLE PATRICK
Napa, California
B.S., 1925, Commerce, Oregon State College.
Thesis: A Study of the Results of Commercial Training in Napa Union High School.

JAMES RICHARDSON ROAF
Corvallis
B.S., 1932, Agriculture, Oregon State College.
Thesis: Some Observations on the Life History and Bionomics of the Holly Scale, *Aspidiotus britannicus* Newst. in Oregon.

TREVOR ARNETT STEELE
Santa Barbara, California
B.S., 1933, State Agricultural College of Colorado.
Thesis: Factors Relating to Cold Resistance in Strawberries.

LEE STEPHENSON
Seattle, Washington
B.S., 1932, Industrial Arts, Oregon State College.
Thesis: The General Shop as an Educational Activity in the Small High School.

WALTER ALLEN STOKESBARY
Corvallis
B.S., 1932, Mining Engineering, Oregon State College.
Thesis: A Faunal Study of the Dallas Area in an Attempt to Determine the Faunal Horizon or Horizons Present and to Correlate With Other Oregon and California Horizons.

RICHARD THOMAS THACKER
Tualatin
B.S., 1922, Agriculture, Oregon State College.
Thesis: Trends of Economics in Secondary Education in Oregon.

MARY LITTLE THOMAS
Corvallis
B.S., 1926, Home Economics, Oregon State College.
Thesis: A Study of the Expenditures of Home Economics Freshmen at Oregon State College 1930 to 1933.

HENRY TIEDEMANN
Portland
B.S., 1933, Forestry, Oregon State College.
Thesis: The Establishment of Douglas Fir Reproduction in Relation to Certain Natural Environmental Factors.

DOROTHY VANGROOS
Corvallis
B.S., 1932, Education, Oregon State College.
Thesis: A Study of the Policies With Regard to Post-Graduate Students in the Oregon High Schools.

TOM B WAGNER
Portland
B.S., 1933, Electrical Engineering, Oregon State College.
Thesis: Simplified Electrical Measurements of Sound Absorbtion.

RUTH ELIZABETH WARNKE
Boise, Idaho
B.S., 1933, Home Economics, Oregon State College.
Thesis: A Survey of the Physical Education Activity Program for Women in State Colleges and Universities in the United States.

MARGARET ELAINE WILLIAMS
Wallowa
B.S., 1932, University of Oregon.
Thesis: The Occurrence of the Spores of Clostridium Botulinum in Certain Soils of Benton and Linn Counties, Oregon.

Bachelor's Degrees

BACHELORS OF ARTS

SCHOOL OF SCIENCE

ROBERT LICK GAMER
Portland
JAMES LYLE HURT
Portland
CARL DITTMER MERRYMAN
Corvallis
JOHN A. ROSS
Salem
MARGARET LOUISE SORING
Woodburn
GEORGE FRANKLIN STEEL
Portland
ALFRED S. WOLFE
Portland

SCHOOL OF HOME ECONOMICS

MARY WHATELY APPLEBE
Grants Pass
MARIAN DUNHAM
Portland

BACHELORS OF SCIENCE

SCHOOL OF SCIENCE

COLVER FARLOW ANDERSON
Ashland
SIGRID RIDDELL CANTINE
Corvallis
CHARLES WEBSTER CHATTIN, JR.
Ashland
LENARD HERMAN DAVIS
Estacada
MORRIS MILLER EISENBREY
Pomona, California
WILLIAM LATIMER FAILING
Portland
WAYNE MOORE FELTS
Portland
DORIS HERRINGTON
Portland
CLINTON MONROE KELLEY
Corvallis
ANDREW WARREN LARSON
Corvallis
NOAL P. LARSON
Corvallis
MARY KATHERINE MCINTYRE
Portland
DONALD CHARLES PRENTISS
Corvallis
WILLIAM REGINALD REYNOLDS
Hillsboro
LESLIE CHARLES RICHARDS
Portland
EWALD ROHRMANN
Pendleton
JOSEPH BERNARD SPULNIK
Portland
VIRGIL EVANS STARR
Powell Butte
FLETCHER WALKER
Salem
HAROLD WILLIAM WOOD
Nyssa

School of Agriculture

Wallace E. Ayres
Junction City
John Stannard Billings
Ashland
James Franklin Bishop
Tigard
Robert Litzel Brown
Corvallis
Kenneth Eugene Carl
Arago
Henry A. Collin, Jr.
Orosi, California
Clive Winton Cook
Wells
Everett Henry Davis
Junction City
Harold Joseph Finegan
Cornelius
Harold Ethan Finnell
Portland
J. Spencer George
Corvallis
Howard Gibson
Corvallis
Edgar Boyd Grimes
Harrisburg
Elmer Hansen
Freewater
Robert Selvester Harper
Adin, California
Joel Hedgpeth
Fresno, California
Gerald Howard Hughes
Corvallis
Clifford Charles Jenkins
Coquille
Creighton Benton Jones
Gervais
William Merges Kletzer
Portland
Robert Abbott Lange
Eau Claire, Wisconsin
Chester Amos Loe
Corvallis
Juan Andres Mariano
Corvallis
Oscar Edwin Mikesell
Hermiston
Orie Stephen Moore
Medford
Robert Ashcraft Nichols
Corvallis
Charles Edward Norton
Roseburg
Clarence Russell Olds
Portland
Walther Henry Ott
Hermiston
Donald John Pentzer
Grants Pass
Joe Rickard
Corvallis
Gilbert Henry Ridder
Sherwood
Hazen Albert Sandwick
Corvallis
Henry Webster Scott
Roseburg
John Nicholas Shellabarger
Portland
Lloyd Shoesmith
Salem
Howard George Smith
Newberg
Ivan Wellar Weikel
Roseburg
Russell Vincent Wood
Portland
Ethan Linden Woods
Moro

School of Commerce†

*Wilbert Forbes Campbell
Portland
*Herbert L. Kirkpatrick
Long Beach, California
*Wallace Franklin Marsden
Marshfield
*Frank Irving Merrill
Corvallis
*Wade Arnold Rodwell
Hood River
*Sigmond Sielicky
Portland
*Clair Field Young
Ione

School of Education

Harold Elmer Allen
Cottage Grove
Ruby Arline Atkinson
Portland
Clarence Cass Bates
Corvallis
Astrid Ermine Bergdahl
Marysville, California
John Biancone
Portland
Miriam Du Bois Bleamaster
Corvallis
William Stephen Bodner
Corvallis
Anita Louise Boley
Salem
James Day Britton
Marysville, California
Edwin Fuller Brown
Vancouver, Washington
Shirlie Ruth Brownson
Hermiston
*Doris Adelaide Buck
Portland
Clarkson Isaac Buckley
Corvallis
William Callan
Portland

†The School of Commerce was consolidated with the School of Business Administration at the University of Oregon in 1932-33, but the students listed who were enrolled in the School of Commerce prior to the transfer were permitted by the State Board of Higher Education to receive their degrees from the State College.

School of Education—*Continued*

Edmund Ackerman Carleton
Portland
Harry Forest Clinton
Corvallis
Ralph Post Coleman
Eugene
Karl Conner
Corvallis
Louise Winfield Cook
Salem
Lucy Miriam Crossett
Portland
Marion Ione Driggs
Salem
*Richard William Dunn
Portland
Edna Martha Edwardes
San Francisco, California
Grant H. Edwards
Corvallis
Herbert Frank Eisenschmidt
Portland
Dana Selby Frame
Sacramento, California
Marian Caroline Gary
Portland
Bernice Harriet Green
Portland
Thelma Aileen Gregory
Newberg
Ida Cora Gunter
Grants Pass
Wayne Harn
Corvallis
Guy Marvin Harvey
Portland
Alphonse Matthews Hillstrom
Marshfield
*Emil Edwin Horning
Portland
Vernon Judson Kruse
Eugene
Dorothy Elsie Lachmund
Portland
Edgar Ledgerwood
Stayton
Edward Collins Lewis
Portland
Frank Anthony Little
Corvallis
William Fred MacDonald
Medford
Joseph Henry Mack
Corvallis
Bruce Martin
Corvallis
Walter Jesse Mathiesen
Banks
Florence Helen Maw
Toledo
Bessie May Miller
Los Angeles, California
Lloyd Francis Millhollen, Jr.
Corvallis
Eileene Loraine Morency
Portland
James Kenneth Munford
Banks
Thora Elizabeth Nielsen
Tigard
Marjorie Lucille Parrott
Portland
Maxine Mary Paulsen
The Dalles
Kareen Sayre Peiffer
Portland
M. Maxine Peterson
Corvallis
Anita Helene Post
Portland
Alice Edith Purvis
Vale
Theodore John Raisig
Portland
Dent Byrl Reed
Walnut, California
Taylor Reedy
Los Angeles, California
Warren Alaska Reid
Corvallis
Aldo Sante Romiti
St. Helens
*Mamie Rounds
Corvallis
A'leen Elizabeth Runkle
Corvallis
Fred William Saling
Corvallis
*John Willard Schloth
Portland
Frank Edward Schwartz
Corvallis
Mary Alice Scott
Klamath Falls
Hugh Miller Sherwood, Jr.
Corvallis
Priscilla Kerr Skeen
Salt Lake City, Utah
Lillian Lorraine Sparr
Ashland
Helen Margaret Spring
Corvallis
*James Lee Stafford
Portland
Esther Elizabeth Stahl
Corvallis
Mary Elizabeth Stevenson
Glendale
Herbert Emmett Summers
Corvallis
Merritt Wallace Truax
Albany
Loren William Tuttle
Grants Pass
Sibyl Alma Veatch
Cottage Grove
Velma Louise Whitlock
Corvallis
Walter Alexander Woodard
Portland
Virginia Woodruff
Corvallis

School of Engineering

Leslie Hugh Aungst
Baker
Willis Myron Ausland
Grants Pass
Ross Leo Bateman
Toledo
Jack Rudolph Bauman
Nampa, Idaho
Howard Paul Beckendorf
Portland
Henry Walter Berkey
Tillamook
Delbert Biersdorf
Cornelius
Jack C. Boggess
Mabel

SCHOOL OF ENGINEERING—*Continued*

HARALD PETER BONDESON
Portland
CYRIL HAROLD BOTTS
Corvallis
GEORGE MARSHALL CHANDLER
Eugene
HARLAND RUSSELL CLODFELTER
Corvallis
JULIUS STEPHEN CONRAD
Marshfield
JAMES PHILIP COOKE
Portland
FREDERICK WILLIAM COOKMAN, JR.
Portland
CECIL LAVERN CORLEW
Portland
GEORGE L. DANFORTH
Portland
OWEN DAVIES DAVIS
Honolulu, Hawaii
HAROLD WILBUR DAWSON
The Dalles
ELDON RICHTON DEARDORFF
Prairie City
JOHN WILSON DOUGHERTY
Portland
AVERITT DUNAGAN
Scotts Mills
HOWARD ROBERT EADE
Warrendale
BRYAN EDWARD EGAN
Corvallis
CLIFFORD KENNETH EMERY
Portland
EDWIN FAIT
Everett, Washington
DONALD WILLIAM FINLAY
Portland
WILLIAM FITZSTEPHENS
Corvallis
ELLSWORTH RICHMOND FLETCHER
Salem
LOREN IRVING FOGLER
Mitchell
ALVIN LEONARD FUNK
Aberdeen, Idaho
RAYMOND WINFIELD GALLAGHER
Woodburn
ARNOLD ZIEGLER GREENLAW
Palo Alto, California
EDWARD MORTIMER GREGORY
Albany
WALTER HANTHORN
Portland
WILLIAM GLOVER HARBER
Albany
EVERETT JAY HARRINGTON
Marshfield
GIFFORD THOMPSON HART
Kerby
ROBERT JAMES HUTCHINSON
Multnomah
HAROLD MARX JOHNSON
Gresham
STANLEY ERNEST KEBBE
Mohler
KENNETH MILLER KLEIN
Salem
*ALFRED VALENTINE LANDES
Corvallis
SIDNEY PRATT LATHROP
Portland
WILLARD WRIGHT LAZARUS
Corvallis
LLOYD LILLIE
Portland
HOLLIS RUDOLPH LITTLE
Portland
ALBERT RAYMOND LUBERSKY
Portland
JAMES MCALLISTER
Gresham
THOMAS HARTLEY MCCLUNG
Portland
WINSLOW IFFLAND MCCURDY
Port Townsend, Washington
NED ALBERT MCELROY
The Dalles
HUGH MCCONAUGHY MARQUIS
Portland
DRAPER COOLIDGE MASON
Portland
ROBERT WAYNE MASON
Talent
THERALD MOELLER
Toledo
JAMES KELLY MOORE
Salem
WILLIS HIGHT MORRIS
Portland
WALTER BRUCE MORRISON
Portland
ROBERT THEODORE MOUNTAIN
Aumsville
MELVIN FRANCIS MUNCH
Portland
ROBERT LINTON MUSHEN
Lakeview
JACK THOMAS NAYLOR
Wolf Creek
CHARLES HENRY NELSON
Cascade Locks
JAMES RAYMOND NEWBERRY
Forest Grove
WALTER NICKELS
Portland
HENDRIK JACOB OORTHUYS
Corvallis
ROBERT WADE RAMSEY
La Grande
JOHN ROBERT REES
Shaniko
THOMAS HARVEY ROBINSON
Corvallis
CHARLES ALBERT ROHRMANN
Pendleton
FRED ARNOLD RONER
Albany
NORMAN NEWTON RUDD
Corvallis
PAUL ERNEST SANDOZ, JR.
Trail
RAYMOND GROVER SANDWICK
Corvallis
WALDEMAR ADRIAN SCHMIDT
Portland
RAYMOND HAROLD SCHWARZ
Myrtle Point
ROBERT FULTON SNYDER
Los Angeles, California
ROMAR ERNEST STEIN
Sherwood
THOMAS ELWOOD TAYLOR
Portland
RUDOLF HAROLD THIELEMANN
Portland
ROBERT LEWIS TIDBALL
Portland
GRAHAM EDWARD TOWNSEND
Portland
WILLIAM ARMSTRONG TURNBULL, JR.
Portland
KENNETH SHELDON WRIGHT
Portland
THURSTON LLOYD YOCUM
Corvallis

School of Forestry

Thomas Bolton Armstrong
Pasadena, California
Stanley Bishoprick
Portland
Richard Paul Bottcher
Portland
George Lewis Burnett
Portland
Charles Eric Chester
Astoria
George William Churchill
Corvallis
Leo Miles Compton
Corvallis
Horace Garfield Cooper
Portland
Montague William Easton
Corvallis
Harry Bernarr Forse
Courtenay, British Columbia
Jesse Hathorn
Hood River
Joe O. Lammi
Portland
Frederick Omer Lemery
Brooks
Robert Stanley Lewis
Jacksonville
Victor Lindwall
Portland
Kermit Walter Linstedt
Eugene
Francis Robert McCabe
Portland
Jack Manley Miller
Elgin, Illinois
Waldo I. Petterson
Colton
John Rae Philbrick
Portland
William Keith Tinsley
Portland
Andrew Claude Upham
Hermiston
Samuel Allen Warg
Prineville
John Edwin Weisgerber
Portland

School of Home Economics

Eleanor Brown Allen
Cottage Grove
Frances Rose Bothern
Albany
Julia Maye Bowdon
Bastrop, Louisiana
Lora Rosalie Bradley
Silver Lake
Dorris Jacqueline Brier
Turlock, California
Beatrice Tefft Churchill
Corvallis
Marion Coates
Tillamook
Eleanor Wright Danforth
Salem
Mary Jane Davidson
Coaldale, Alberta
Ruth Elizabeth De Armond
Sitka, Alaska
Elinor Bernice Dick
Portland
Gladys Goodman
Portland
Marian Gertrude Hall
Portland
Helen Dorothy Haynes
Gladstone
LaVerne Dorothy Hessler
Dayton
Helen Pauline Kammerer
Corvallis
*Clara Virginia Kauffman
Corvallis
Sylvia Caroline Keen
Shaw
Josephine Miriam Kidd
Corvallis
Vades Juanita Koonst
Portland
Elizabeth Louise Kraus
Aurora
Waivo Loudene Lenon
Woodburn
Betty-Louise Losse
Santa Clara, California
Ruth Janet McCready
Chiloquin
*Alice B. Marsh
Corvallis
Susan Helen Miller
Portland
Inez Anne Oatfield
Milwaukie
Mary Elizabeth Ott
Portland
Marie Anna Peterson
Lakeview
Evelyn Alice Reekman
Harbor
Rita M. Renninger
Albany
Estora Velma Ricks
Portland
Dorothy Merle Ripley
Portland
*Vera Ardess Rosenberg
Tillamook
Winifred Josephine Schuele
Portland
Dorris Mary Scott
Corvallis
Evelyn Scott
Corvallis
Elise Anderson Scudder
Monterey Park, California
Dorothe Jeanne Shepherd
Salem
Dorothy-Ann Sidler
Portland
Ruth Genevieve Smith
Portland
Viva Gertrude Smith
Albany
Alice Frances Stangel
Wilsonville
Eva Mae Thompson
Corvallis
Ruth Marie Thompson
Corvallis
Verna Evelyn Townsend
Corvallis
Edna Pauline Tracy
Claremont, California
Helen Vincent
Corvallis

School of Home Economics—*Continued*

Edna Elizabeth Voorhees
San Marino, California
Edythe M. Walker
Portland
Marguerite Byra Ward
Albany
Vera Helen Weber
Portland
Marguerite Eunice Welch
Corvallis
Margaret Frances Zimmerman
Portland

School of Pharmacy

Frederick Milton Chapman
Roseburg
Claude Theodore Gerlach
Coquille
Inez Gilbert
Corvallis
Lloyd M. Irvine
Myrtle Creek
Hugh Andrew Kerwin
Corvallis
Jack Kemp Kuhn
Salem
Henry Laurence Levinger
Baker
Florence Long
Taft
Herbert Allan Luehrs
Ontario
George Reiser Palmer
Hood River
Wellington Wilkes Pollock
Tillamook
Lawrence DeWitt Robertson
Freewater
Lela Ruth Robertson
Freewater
John Daniel Saager
Freewater
Harold Mason Thompson
Pendleton
Earl Austin Whitehouse
Lakeview

BACHELORS OF SECRETARIAL SCIENCE

Frederick Anders Anderson
Sherwood
Richard Myers Brown
Portland
Milton Victor Carlson
Portland
Grace Elizabeth D'Spain
Milwaukie
Eugene Kruse
Portland
Charles Wesley Medley
Oakland
Jack B. Pearce
Portland
Clara Ellen Rettie
Fossil
Jessie May Smith
Roseburg
Beneva Artilee Volkmar
Myrtle Point

Senior Honor Students, 1934

See page 88.

Elections for June, 1934

SCIENCE

Clinton Monroe Kelley
Ewald Rohrmann
Fletcher Walker

AGRICULTURE

Elmer Hansen
Robert Ashcraft Nichols
Walther Henry Ott

EDUCATION

Thelma Aileen Gregory
Lloyd Francis Millhollen, Jr.
James Kenneth Munford
M. Maxine Peterson
Fred William Saling
Lillian Lorraine Sparr
Esther Elizabeth Stahl

ENGINEERING

HOWARD PAUL BECKENDORF
JULIUS STEPHEN CONRAD
RAYMOND WINFIELD GALLAGHER
DRAPER COOLIDGE MASON
THERALD MOELLER
ROBERT THEODORE MOUNTAIN
JACK THOMAS NAYLOR
NORMAN NEWTON RUDD
WALDEMAR ADRIAN SCHMIDT

FORESTRY

GEORGE LEWIS BURNETT

HOME ECONOMICS

RUTH ELIZABETH DE ARMOND

PHARMACY

HENRY LAURENCE LEVINGER

SECRETARIAL SCIENCE

JESSIE MAY SMITH

Prizes and Awards, 1934

(Announced May 23, 1934)

The Clara H. Waldo Prizes

See page 88.

Senior Women

First Honor—

THELMA AILEEN GREGORY
(Education)

Honorable Mention—

M MAXINE PETERSON
(Education)

LILLIAN LORRAINE SPARR
(Education)

Junior Women

First Honor—

DOROTHY M ATWOOD
(Home Economics)

Honorable Mention—

PAULINE CONSTANCE PAUL
(Home Economics)

GEORGENA PETTINGELL SAMSON
(Education)

Sophomore Women

First Honor—

HELEN MAARANEN
(Education)

Honorable Mention—

ELLEN VIVIAN LUNN
(Lower Division)

LILLIAN MARIE HOLM
(Secretarial Science)

Freshman Women

First Honor—

PAULINE VIOLET TURNER
(Lower Division)

Honorable Mention—

LUCILLE E HOAGLAND
(Lower Division)

CHARLOTTE OLIVE GOODDING
(Lower Division)

The Adolphe Wolfe Prizes

See page 88.

Senior Woman

JESSIE MAY SMITH
(Secretarial Science)

Senior Men

First Honor—

RICHARD MYERS BROWN
(Secretarial Science)

Honorable Mention—

WALTHER HENRY OTT
(Agriculture)

HOWARD PAUL BECKENDORF
(Engineering)

Junior Woman

JANE ELIZABETH FLORY
(Education)

Junior Men

First Honor—

MERWIN MILLER
(Engineering)

Honorable Mention—

MAURICE DWANE BRANDS
(Engineering)

HENRY W BRANDS
(Engineering)

Sophomore Woman

DOROTHY CAROLYN BRUNS
(Education)

Sophomore Men

First Honor—

MELVIN WILSON BREESE
(Pharmacy)

Honorable Mention—

F DUDLEY MOSS
(Engineering)

JACK GRAHAM
(Engineering)

The Joseph H. Albert Prize

See page 88.

NORMAN NEWTON RUDD

(Engineering)

The Chi Omega Prize

See page 88.

RUTH ELIZABETH DEARMOND

(Home Economics)

The E. D. Ressler Memorial

See page 88.

MARY NEILL WHITELAW

(Education)

The Alpha Zeta Scholarship Cup

See page 88. No award 1933-34.

The Kappa Delta Pi Award

See page 88.

MARY NEILL WHITELAW

The American Society of Civil Engineers Prizes

See page 88.

ARNOLD ZIEGLER GREENLAW

The American Society of Mechanical Engineers Prizes

See page 88.

ROBERT THEODORE MOUNTAIN
JACK ALBAN GIBBS
WALTER HANTHORN

The Eta Kappa Nu Cup

See page 89.

EDWARD WHITNEY HOUGHTON

The Charles Lathrop Pack Forestry Prize

See page 89.

SAMUEL ALLEN WARG
CLARENCE WILFRED RICHEN
HAROLD DELBERT TURNER

The Omicron Nu Plaque

See page 89.

RUTH ELIZABETH DEARMOND

The Home Economics Prize

See page 89.

FLORA MARGUERITE HOWE

The Drucilla Shepard Smith Prizes

See page 89.

GILMA ELLEN ENDICOTT

(Home Economics)

The Rho Chi Prize

See page 89.

LAWRENCE DEWITTE ROBERTSON

Military Honors

Honor Graduates, Military Department

Because of the recognized efficiency of the Military Department of the State College, the War Department permits the institution to name, as Honor Graduates, five per cent of the students of each unity who complete the Advanced Course each year. Designations are made on the basis of academic grades and demonstrated efficiency in military work. The following are the Honor Graduates this year:

LLOYD FRANCIS MILLHOLLEN, JR., Infantry
WALDEMAR ADRIAN SCHMIDT, Field Artillery

Reserve Commissions

Three units of Reserve Officers' Training Corps are maintained at the College—Infantry, Field Artillery, and Engineers. Oregon State College is among the very best equipped institutions of the country for giving efficient military training. From 1917 until 1927, the R.O.T.C. Units at the College were awarded the highest obtainable War Department rating—"Distinguished"—nine times. The rating "Excellent" (the highest now obtainable) was substituted for "Distinguished" in 1928. The R.O.T.C. Units at the College have been rated "Excellent," as a result of numerous inspections, in 1928, 1930, 1931, 1932, 1933, and 1934. Students who successfully complete the Advanced Course are commissioned Second Lieutenants, Organized Reserves, from which they would be called to active duty in the event of an emergency, and in which, in times of peace, they are occasionally called to active duty with their consent, for short periods of training. The following students were graduated from the Advanced R.O.T.C. Course this year:

Infantry

HAROLD ELMER ALLEN
JOHN BIANCONE
WILLIAM STEPHEN BODNER
CHARLES ROBERTS BUXTON
RALPH POST COLEMAN
WILLIAM SHERRETT HOFF
JACK KEMP KUHN
ERNEST WALTER LEHMANN
CECIL HAMILTON MEEKER
*LLOYD FRANCIS MILLHOLLEN, JR.
ROY MORGAN MUELLER
MELVIN FRANCIS MUNCH
JAMES KENNETH MUNFORD
FRED WILLIAM SALING
HERBERT EMMETT SUMMERS
THOMAS HENRY WARD
JOHN EDWIN WEISGERBER
HAROLD SAMUEL WHITESIDE
LOUIS ALTON WITHERS
JOHN CHARLES WOODARD

Field Artillery

CAL ATTERBURY
WILLIAM CALLAN
EDMUND ACKERMAN CARLETON
KARL CONNER
URIEL LEE CORBIN
CECIL LAVERN CORLEW
OWEN DAVIES DAVIS
JOHN WILSON DOUGHERTY
MORRIS MILLER EISENBREY
DONALD WILLIAM FINLAY
PAUL FRANKLIN HELMICK
ROBERT JAMES HUTCHINSON
WILLIAM MERGES KLETZER
WILLARD WRIGHT LAZARUS
FORREST SAMUEL LINDSAY
HOLLIS RUDOLPH LITTLE
ALBERT RAYMOND LUBERSKY
HUGH MCCONAUGHY MARQUIS
HUBERT MAXON MATTOON
TOM HARTLEY MCCLUNG
WALTER BRUCE MORRISON
CHARLES EDWARD NORTON
JOHN RAE PHILBRICK
THOMAS HARVEY ROBINSON
HAZEN ALBERT SANDWICK
WALDEMAR ADRIAN SCHMIDT

Corps of Engineers

DEAN LESLIE CONDON
GEORGE L. DANFORTH
WILLIAM MICHAEL O'BRIEN
BERT RORICK SCOTT, JR.
RUDOLF HAROLD THIELEMANN
WILLIAM MORROW WHITCOMB

*Certificate of Appointment.

Students, 1933-34

The classification of students by curriculum and rank is indicated by the following abbreviations: A, Agriculture; BAd, Business Administration; CE, Civil Engineering; ChE, Chemical Engineering; E, Engineering; Ed, Education; EE, Electrical Engineering; F, Forestry; FA, Fine Arts; G, Geology; H, Home Economics; IA, Industrial Arts; J, Journalism; LA, Landscape Architecture; LD, Lower Division (Liberal Arts and Sciences); Mth, Mathematics; ME, Mechanical Engineering; P, Pharmacy; PE, Physical Education; Sc, Science; SS, Secretarial Science; Sp, Special; 1, Freshman; 2, Sophomore; 3, Junior; 4, Senior.

Graduate Students

1933-34

Adams, Robert Sterling.....Lakeview
Allen, Ethan Alfred.....Corvallis
Bailey, George Sterling.....Grants Pass
Ball, Eldon Edward.....Crockett, Calif.
Bauer, Wayne Lewis.....Molalla
Beals, Maple Lucille Cole.....Corvallis
Beatty, Daniel Webster.....Brownsville
Berg, Elmer Oscar.....Canby
Berg, Harold William.....Salem
Berryman, Carl Wilbur.....Meridian, Idaho
Bertram, Mary Elizabeth.....Corvallis
Blow, Grace Hayward.....Los Angeles, Calif.
Bogue, Richard Gerard.....Corvallis
Bridger, Clyde Arthur.....Payette, Idaho
Broadbooks, Martin Robert..Naches, Wash.
Brown, Betty.....Beaverton
Brown, Rayma.....Eugene
Buchanan, Aurella.....Corvallis
Burnham, Clarence.....Brigham City, Utah
Chambers, Gladys Dawson.....Corvallis
Cobb, Alan Wilfred.....Portland
Coleman, Howard.....Corvallis
Conrad, Ralph Cornelius.....Hammond, Wis.
Cordray, Lola Pearle.....Ontario
Dasch, Dale Milton.....Salem
Davis, Irene Ruby.....Corvallis
Dery, Robert.....Pasadena, Calif.
Dillin, Dorothy Ann.....Pomona, Calif.
Drake, Miles Edward.....Portland
Eberhart, Howard Davis.....Eugene
Eldredge, Kenneth Roland.....Portland
Fryer, Holly Claire.....Yamhill
Gjullin, Claude Melvin....Gallap City, Mont.
Gross, Alvin Eugene.....Halfway
Halpenny, Helen Alberta.....Portland
Hansen, Mrs. Ruth Westcott.....Gaston
Harris, Quinton Parker..Hobart Mills, Calif.
Heesacker, Robert Edwin.....Forest Grove
Hertz, Mary Collins.....Corvallis
Hoffmann, Hans.....Switzerland
Holaday, Duncan A.....Corvallis
Holmquist, Robert Edwin.....Cheney, Wash.
Howard, Edgar Fuller.....Corvallis
Howey, Olive Mary.....Corvallis
Hyslop, Sue.....Corvallis
Ingram, William Jack.....Albany
Jacquot, Alfred Andrew.....Bend
Janzen, Enelse Dina.....Corvallis
Jenks, Forena.....Albany
Johnston, Howard Theodore..Croswell, Mich.
Jones, Herbert L.....Corvallis
Kammerer, Esther Elizabeth.....Corvallis
Keema, Elwood John.....Elk Grove, Calif.
Kivlahan, Edith Lucille.....Chico, Calif.
Klemm, Karl.....Eugene
Kofoid, Melvin Julius.....Portland
Kruse, Vernon Judson.....Eugene
Kuykendall, Delman Vernon..Klamath Falls
Langdon, Floyd Llewellyn.....Corvallis
Lange, Robert A.....Eau Claire, Wis.
Lerch, Louise Marie.....Portland
Levinger, Henry Laurence.....Baker
Loehr, Ruby R.....Corvallis
Loh, Woh Ping.....Canton, China
Lovegren, Lawrence Alfred.....Corvallis
Lund, Helen Karen.....Corvallis
Lyman, Carl Morris.....Corvallis
McBurney, Charles Hamilton.....Wendling
MacCracken, Elliott Bolte.....Ashland
Marlatte, Charles R.....Eugene
Martin, William E.....Corvallis
Masson, Donald Leslie.....Monroe
Merritt, John Rupert.....Corvallis
Metzler, Glen Arthur.....Corvallis
Metzler, Ruth Evelyn.....Corvallis
Miller, William A.....Corvallis
Millican, Jean Elizabeth.....Leaburg
Milne, Lillian Mary I.....Victoria, B. C.
Moore, Mrs. Marie Whitwam.....Los Altos, Calif.
Moser, Robin Emerson.....Salem
Nelson, Everald Elmer.....Corvallis
Newlands, Mary Creighton.....Oswego
Nilsen, Margaret T.....Eureka, Calif.
Nixon, Richard Alexander.....West Linn
O'Dell, Matthew Jennings.....Portland
Parker, John Raymond.....Corvallis
Patterson, Joseph Deane.....Corvallis
Peck, Norton Lee.....Corvallis
Perkins, Drew White.....Eugene
Perrin, William Roy.....Oregon City
Powell, Garland Schmidt.....Philomath

Reed, Eloise.....Corvallis
Reichart, Robert Ray.....Corvallis
Reynolds, James Nathaniel.....Corvallis
Reynolds, William Reginald.....Hillsboro
Roaf, James Richardson.....Corvallis
Robinson, Clifford Ellis.....Corvallis
Saunders, Donald Herbert.....Eugene
Schreiber, Raemer Edgar.....Corvallis
Schuh, Joe.....Portland
Shearer, William Norman.....Estacada
Sparks, Victor E.....Corvallis
Steele, Trevor Arnett.....Kansas City, Mo.
Stevensen, Mary Elizabeth.....Portland
Strachan, Charles Campbell.....Summerland, B. C.
Sullivan, Elmer.....Portland
Taylor, Alfred.....Corvallis
Tharp, Harold.....Albany
Thompson, Carolyn Isabelle.....Pendleton
Tiedemann, Henry.....Portland
Tyler, Willard Philip.....Corvallis
van Groos, Dorothy.....Corvallis
Wagner, Tom B.....Portland
Waldo, George Fordyce.....Corvallis
Warnke, Ruth Elizabeth.....Boise, Idaho
Watts, Dorothy E.....Watsonville, Calif.
Wilhelm, Teresa Mary.....Eugene
Williams, Margaret Elaine.....Wallowa
Woodriff, Ray A.....Harbor
Yates, Margaret Anne.....Shedd

Undergraduate Students

1933-34

Abe, Paul Yoza, P, 1.....Corvallis
Abraham, Elaine Mae, SS, 2.....Corvallis
Abramson, Ruth Christine, SS, 2.....Lakeview
Acheson, John Russell, Ed, 3.....Portland
Acheson, Margaret Irene, P, 2.....Brownsville
Adams, Jack, LD, 2.....Warrenton
Akers, Ernest Alfred, SS, 2.....Portland
Albright, John Carmi, P, 1.....Portland
Alldredge, Sumner, CE, 2.....Portland
Allen, Alfred Thomas, Ed, 3.....Corvallis
Allen, Eleanor Brown, H, 4.....Corvallis
Allen, Harold Elmer, Ed, 4.....Cottage Grove
Allen, Harry Albert, BA, 1.....Wilmington, Calif.
Allen, Leona Grace, Ed, 4.....Corvallis
Allen, Marjorie, H, 1.....Cove
Allen, Mary Maxine, H, 2.....Adams
Allen, Richard Holman, E, Sp.....Portland
Allen, Sherman R., P, 2.....Richland
Allison, Jean, H, 3.....Cottage Grove
Allison, Mary Elizabeth, SS, 4.....Albany
Ames, Beatrice Elsie, H, 2.....Portland
Amrine, Richard Mahlon, IA, 2.....Oregon City
Andersen, Lester E., LD, 1.....Portland
Anderson, Alice Eaton, Ed, 3.....Corvallis
Anderson, Colver Farlow, Sc, 4.....Ashland
Anderson, Don, Ed, 3.....Portland
Anderson, Dorothy, Ed, 2.....Portland
Anderson, Fred A., SS, 4.....Sherwood
Anderson, Harold Coulston, EE, 2.....Salem
Anderson, Harry Kenneth, A, 2.....Hammond
Anderson, Janet Alden, Ed, 3.....Corvallis
Anderson, John William, Ed, 1.....Seaside
Anderson, Margaret Elizabeth, H, 1.....Corvallis
Anderson, Melvin Walter, P, 2.....Medford
Anderson, Olaf S., A, 2.....Grants Pass
Anderson, Richard Dwight, E, 1.....Salem
Anderson, Robert Charles, IA, 2.....Corvallis
Angle, Martha Cornelia, Ed, 4.....Corvallis
Angle, Marvin Giger, F, 2.....Corvallis
Applebe, Mary Whately, H, 4.....Grants Pass
Applewhite, Gordon Miles, P. 3.....Roseburg
Armstrong, Thomas Bolton, F, 4.....Pasadena, Calif.
Arnott, David Shiress, E, 1.....Albany
Ash, Alice Arnold, SS, 3.....Corvallis
Atkinson, Pearl, Ed, 1.....Portland
Atkinson, Ruby Arline, Ed, 4.....Portland
Atterbury, Cal, Ed, 2.....Portland
Atwood, Dorothy McKenzie, H, 3.....Corvallis
Atwood, Jewel Louise. SS, 1.....Corvallis
Aungst, Leslie H., CE, 4.....Baker
Aupperle, Elizabeth, SS, 2.....Jefferson
Ausland, Warren Winton, E, 2.....Grants Pass
Ausland, Willis Myron, CE, 4.....Grants Pass
Avery, Punderson, A, 3.....Corvallis
Axelsen, Carl Alfred, SS, 1.....Portland
Ayres, Lucille Kathryn, LD, 1.....Corvallis
Ayres, Wallace E., A, 2.....Corvallis
Babb, Walter Raymond M., SS, 2.....Corvallis
Bagley, William R., ME, 2.....Talent
Bailey, Laura Alice, H, 4.....Corvallis
Bailey, Warren Hutchinson, LD, 2.....Corvallis
Baird, Jean Rachel, Ed, 2.....Portland
Baker, Gerald Alvin, IA, 1.....Willamina
Baker, Walter Clifford, LD, 2.....Toledo
Baker, William Hudson, Ed, 3.....The Dalles
Baldwin, E. Louise, Ed, 1.....Hood River
Bales, Margaret Leah, H, 2.....Corvallis
Ball, A. Glen, P, 1.....Fontana, Calif.
Bannister, Wayne Burnett, LD, 1.....Athena
Bany, Helen Lucille, Ed, 1.....Astoria
Barnes, Marian Elizabeth, H, 1.....Portland
Barnes, Mary Lee, LD, 1.....Seattle, Wash.
Barnett, Rex, LD, 2.....Portland
Barney, Richard, E, 1.....Oregon City
Barrell, Colburn Harry, P, 2.....Bend
Barrett, Leander Rockwell, ME, 2.....Forest Grove
Barrington, Anna Fern, SS, 1.....Lakeview
Barry, Edith Ewell, LD, 1.....Lakeview
Barss, Richard Hawks, Ed, 3.....Corvallis
Barss, Roger Phillips, LD, 2.....Corvallis
Bartell, Albert Odeen, LD, 1.....Portland
Barth, Victor Warren, F, 2.....Salem
Batcheller, Campbell Robinson, Ed, 4.....Corvallis
Batcheller, Oliver A., A, 2.....Corvallis
Bateman, Ross Leo, EE, 4.....Toledo
Bates, Clarence Cass, Ed, 4.....Corvallis
Bates, Lois Laurella, SS, 1.....Estacada
Bates, Mercedes Allison, H, 2.....Portland
Bateson, Marian Caroline, H, 2.....Portland
Bauer, Jeanne Margaret, Ed, 3.....Portland
Baum, Arthur Waller, Jr., CE, 2.....Roseburg
Bauman, Jack Rudolph, ME, 4.....Nampa, Idaho
Beach, Gene Fay, H, 3.....Bend
Beal, Eleanor Halliday, Mrs., Ed, 2.....Parkdale
Beal, Robert William, E, 2.....Parkdale

Beall, Thomas Wallace, A, 2.....Oswego
Bear, Edith Irene, Ed, 2.....Albany
Beard, Howard Lynden, E, 1.....Corvallis
Beard, Jean, Ed, 2.....Klamath Falls
Beardsley, Bruce M., SS, 4.....Corvallis
Beardsley, Marion C., EE, 2.....Corvallis
Bearss, Ernest Herbert, Ed, 2....Grants Pass
Beasley, Tom Robert, ME, 3....Santa Ana, Calif.
Beatty, Melvin, BA, 2.....Balboa, Calif.
Beaty, Elizabeth Joan, H, 1.....Corvallis
Beaver, Jay Willis, CE, 3.....Portland
Bechler, Edwin C., A, 1....Long Beach, Calif.
Beckendorf, Howard Paul, EE, 4....Portland
Beckham, John Benjamin, E, 1.....Tigard
Bell, Elston P., F, 1.....Sheridan
Bell, Gordon Budington, Jr., CE, 2....Portland.
Benham, Henry L., IA, 4....Williams, Ariz.
Bennett, Donald K., LD, 2.....Corvallis
Beno, Maxwell Fredrick, EE, 2.....Sherwood
Benson, Bjorn Frost, CE, 2.....Corvallis
Bentley, Clair Benton, Ed, 1..Glendale, Calif.
Benton, Marjorie Louise, LD, 1.....Corvallis
Berg, Evelyn Leona, SS, 1.....Portland
Bergano, Fabian C., P, 2.....Corvallis
Bergdahl, Astrid Ermine, Ed, 4.....Portland
Bergen, John, LD, 2.....Marshfield
Bergh, Albert Gordon, BA, 1.....Pasadena, Calif.
Bergstrom, Robert William, LD, 2....Astoria
Berkey, Henry W., ME, 4.....Tillamook
Bezzant, Shirley Jane, LD, 1.....Albany
Biancone, John, Ed, 4.....Portland
Bieber, Leland Charles, P, 1.....Haines
Bier, Blanche Louise, H, 2.....Corvallis
Biersdorf, Delbert, ME, 4.....Corvallis
Bigelow, Betty Jeanne, Ed, 2.....Belknap Springs
Billings, Benson Everett, LD, 1.....Portland
Billings, John Stannard, A, 4.....Ashland
Billingsley, Donald B., ME, 3.....Portland
Bilyeu, Margaret Virginia, H, 1.....Portland
Binnicker, Jack Noble, CE, 3.....Portland
Binshadler, William Gale, CE, 2.....Lebanon
Bishop, James Franklin, A, 4.....Tigard
Bishoprick, Stanley, F, 4.....Portland
Black, Kenneth Henry, E, 2....Independence
Blackledge, Robert Caldwell, E, 1....Corvallis
Blaine, Kathleen Lorne, SS, 1.....Seaside
Blair, Wallace M., CE, 2.....Corvallis
Blake, Lillie Arvilla, H, 2.....Portland
Blakely, Carolyn, Ed, 2.....Corvallis
Blatch, Dorothy B., H, 2.....Carlton
Bleamaster, Miriam DeBois, Ed, 4..Corvallis
Blitz, William, Sc, 4.....Portland
Bloomberg, Joseph, Sc, 3..Sacramento, Calif.
Boden, Paul Oscar, Ed, 2.....Nyssa
Bodner, William Stephen, Ed, 4.....Corvallis
Boehm, Edith Lucille, SS, 1.....Lakeview
Boehm, Viola Irene, SS, 2.....Lakeview
Bogardus, George William, IA, 1....Cascade Locks
Bolton, Betty Jane, H, 1.....Corvallis
Bolton, Valerie C., P, 2.....Corvallis
Bonbright, Jewel Bernice, H, 1.....Portland
Bondeson, Harold Peter, EE, 4.....Portland
Bonebrake, John Henry, ME, 2.....Portland
Boner, John Halbert, E, 1.....Los Angeles, Calif.
Booth, Richard Hammond, EE, 2....Jennings Lodge
Booth, Willard, BA, 2.....Portland
Boothby, Harold G., P, 3.....Corvallis
Borkowski, George, E, 3.....Portland
Bosworth, Enid Brunetta, LD, 2....Corvallis
Bosworth, Virginia Marian, LD, 2..Corvallis
Bothern, Frances Rose, H, 4.....Albany
Bott, Juanita Virginia, SS, 1.....Pendleton
Bottcher, Richard Paul, F, 4.....Portland
Botts, Cyril H., ME, 4.....Corvallis
Bowdon, Julia Maye, H, 4.....Bastrap, La.
Bowman, Blanche, H, 2.....Portland
Bowman, James Pierre, BA, 2.....Corvallis
Boyle, Kenneth Lyle, EE, 2.....Portland
Boynton, Robert P., A, 1.....Pendleton
Brack, Harold Glen, SS, 1.....Portland
Bradley, Leah Mae, Ed, 2.....Silver Lake
Bradley, Lora Rosalie, H, 4.....Silver Lake
Brainerd, Philip F., Ed, 3.....Grants Pass
Bramwell, Donald Marion, P, 2.....Halsey
Brandis, John Sebastian, LD, 1.....Hoquiam Wash.
Brandis, Richard William, LD, 2....Hoquiam Wash.
Brandon, Ruth Emmaline, H, 1.....Corvallis
Brands, Henry W., CE, 3.....Portland
Brands, Maurice Dwane, CE, 3.....Portland
Brandt, Harriett Anne, Ed, 2.....Corvallis
Brandt, Philip Martin, A, 2.....Corvallis
Brandt, Reuben, Ed, 3.....Corvallis
Brant, Evelyn Lucille, H, 3.....Independence
Bray, Frances Elizabeth, LD, 3.....Albany
Breck, Laura Jane, SS, 2.....Corvallis
Breese, Melvin Wilson, P, 2....Cottage Grove
Breitenstein, Arthur Richard, P, 1..Klamath Falls
Brennan, John Richard, ChE, 1.....Portland
Brier, Dorris Jacqueline, H, 4..Turlock, Calif.
Briggs, Ernest Leonard, ChE, 2....La Grande
Brineman, Margaret, H, 3..San Diego, Calif.
Bringolf, Jane Wilhelmina, SS, 1....Corvallis
Bringolf, Philip Henry, E, 1.....Corvallis
Britton, James Day, Ed, 4..Marysville, Calif.
Brommer, Louise Alma, H, 2.....Medford
Bronson, Dave Grayson, SS, 2.....Portland
Bronson, Robert Kumler, BA, 2.....Portland
Brough, Lloyd Herbert, P, 3.....Rainier
Brown, Frances Mary, H, 1.....Shedd
Brown, George Houston, LD, 2.....Corvallis
Brown, Grace Marjory, SS, 2.....Corvallis
Brown, Harold Weldon, Ed, 2.....Corvallis
Brown, Marion Irene, H, 1.....Corvallis
Brown, Mary Elizabeth, H, 2.....Portland
Brown, Mary Louise, J, 1.....Salem
Brown, Richard Myers, SS, 4.....Portland
Brown, Robert L., A, 4.....Corvallis
Brown, Sterling, ME, 2.....Baker
Browning, Charles Wetzel, LD, 1....Portland
Brownson, Mary Jean, H, 2.....Hermiston
Brownson, Shirlie Ruth, Ed, 4....Hermiston
Bruhl, Althea Lucile, Ed, 3.....Portland
Bruns, Dorothy Caroline, Ed, 2.....Sandy
Bruns, George Edward, ME, 2.....Sandy
Bryant, Robert Edell, BA, 2....Myrtle Point
Buchanan, Helen Ila, LD, 2.....Portland
Buckley, Clarkson I., Ed, 4.....Corvallis
Buckley, Lewis Thomas, A, 2.....Ruck
Bue, Morris, Ed, 1.....Enterprise
Bufton, Lawrence Scott, CE, 2.....Portland
Bullis, Robert Orland, E, 1.....Corvallis
Bulman, William J. T., A, Sp..Vernon, B. C.
Burkholder, Kenneth Arthur, F, 1....Portland
Burnett, George Lewis, F, 4.....Portland
Burns, Margaret M., H, 2.....Newberg
Burns, William Nelson, LD, 2.....Corvallis
Burris, Luis Morton, A, 1.....Harrisburg
Burton, James Oliver, Ed, 2.....Redmond
Burze, Edwin Robert, E, 1.....Portland
Bush, Laurence Damon, E, 1.....Portland
Buslach, Mignon Alice, Ed, 2.....Corvallis
Butler, Charles Henry, EE, 2.....Bull Run
Butler, Joe P., ME, 3.....Marshfield
Buxton, Charles Robert, Ed, 4.....Corvallis
Byrd, Dorothy Maurine, Ed, 2.....Corvallis
Cady, Janette, SS, 4.....Hillsboro

Calderwood, Neva Louise, BA, 2....Warrenton
Callan, Sarah, Ed, 3....Portland
Callan, William, Ed, 4....Portland
Callaway, Margaret Louise, LD, 2..Corvallis
Callaway, V. Fay, H, 1....Corvallis
Cameron, Elizabeth Alice, LD, 2....Eugene
Camp, Robert H., CE, 3....The Dalles
Campbell, Catherine Jane, H, 2....Portland
Campbell, Milton Lora, SS, 2....Portland
Cantine, Sigrid Elizabeth, Sc, 4....Corvallis
Carico, Hugh V., A, 2....Bonita
Carl, Kenneth E., A, 4....Arago
Carl, Marion Eugene, E, 1....Hubbard
Carleton, Edmund Ackerman, Ed, 4....Portland
Carlon, Charles William, LD, 2....Portland
Carlson, Carl Oscar, P, 3....Los Altos, Calif.
Carlson, Milton V., SS, 4....Portland
Carothers, Selma Malinda, LD, 1....Hubbard
Carrico, Angela Elizabeth, Ed, 3....Burns
Carson, James Rolland, A, 1....Portland
Carson, Jesse Eugene, EE, 3....Portland
Carson, Wallace E., EE, 3....Portland
Carter, Myrtle Mae, LD, 1....Corvallis
Carter, Robert Rounsavelle, E, 1....Medford
Case, Carmen Georgene, SS, 2....Molalla
Casebere, Thor Riley, E, 1....Portland
Casserly, Jack Patrick, SS, 1....Pasadena, Calif.
Cassidy, Patrick F., A, 1....Pilot Rock
Caster, Marion Bertram, E, 3....Central Point
Cattrall, John William, CE, 3....Astoria
Caughell, John Everett, Ed, 1....Gold Beach
Causbie, Jefferson Davis, F, 1....Lakeview
Cauthers, Thomas F., LD, 2....Portland
Cernik, Beatrice Estell, SS, 2....Salem
Chadwick, Eleanor Marie, H, 1....Salem
Chamberlain, Keith Marion, A, 2....Mosier
Chamberlin, Fred Sterling, ME, 1....Corvallis
Chambers, Mildred Ann, SS, 1..Oregon City
Chambers, Robert Stewart, BAd, 1..Portland
Chandler, George Marshall, EE, 4....Eugene
Chaney, Richard O., LD, 1....Corvallis
Chaney, Wayne Philip, LD, 2....Marshfield
Chapman, Frederick Milton, P, 4....Roseburg
Chapman, Genevieve Mable, H, 2....Portland
Chapman, Jack Ray, A, 1....Tulelake, Calif.
Chapman, Lincoln, F, 1....Calistoga, Calif.
Chase, I. Virginia, SS, 1....Eugene
Chatham, Marian Frances, LD, 1....Baker
Chattin, Charles W., Jr., Sc, 4....Ashland
Chester, Charles Eric, F, 4....Astoria
Chism, Reno Granville, IA, 2....Portland
Christensen, Emelyn Burke, LD, Sp....Corvallis
Christensen, Leonard, LD, 1....Corvallis
Christenson, Chester Marion, IA, 2....Portland
Christenson, Howard Wayne, E, 1....Portland
Christenson, Laurence E., E, 1....Portland
Churchill, Beatrice Mary, H, 4....Corvallis
Churchill, George William, F, 2....Corvallis
Clampitt, Allyn Claude, BAd, 1....San Fernando, Calif.
Clark, Gordon Kendall, FA, 2....Portland
Clark, Harold, BAd, 1....Baker
Clark, Prosser Everett, A, 1....Portland
Clark, Robert L., A, 1....Portland
Clarke, James Edward, Ed, 3....Portland
Clarke, Norma Dismore, J, 2....Stayton
Clausen, Cornelia, SS, 1....Broadbent
Clemens, Kathryn Denus, LD, 2....Portland
Cleghorn, Catherine H., 2....Klamath Falls
Clement, Jerome, LD, 2....Astoria
Clement, Sanford, LD, 2....Astoria
Clements, Edwin Francis, A, 2....Corvallis
Cleveland, Wallace T., ChE, 1....Portland
Clinton, Harry Forest, Ed, 4....Corvallis
Clodfelter, Alice Marline, H, 2....Portland
Clodfelter, Harland Russell, ChE, 4....Corvallis
Coates, Marion, H, 4....Tillamook
Cockran, John Robert, LD, 2....Oregon City
Cockrell, Barbara Jane, H, 2....Portland
Cockrell, Geraldine Lois, H, 3....Portland
Colasuonno, Thomas Mathew, Jr., P, 2....Portland
Coleman, Ralph Post, Ed, 4....Eugene
Collie, Janet, H, 2....Hood River
Collin, Henry A., Jr., A, 2....Orosi, Calif.
Collins, Dorothy Edith, LD, 1....Portland
Collins, Evelyn June, SS, 1....Portland
Collins, Howard Alfred, F, 1....Wheeler
Collins, John Murray, BAd, 1....Portland
Colvin, Tom Edward, P, 1....Portland
Comfort, John Edward, E, 2....Corvallis
Compton, Leo Miles, F, 4....Corvallis
Condon, Dean Leslie, CE, 3....Gardiner
Confer, Roma Maxine, SS, 1....Oswego
Congdon, Levi Y., Sc, 3....Horton
Conger, Doris Marie, SS, 2....Monmouth
Conkle, Howard Elliott, F, 1....Portland
Conner, Cloyd Alan, E, 2....Hood River
Conner, Karl, Ed, 4....Corvallis
Conrad, Clifford DeVere, A, 2....Imbler
Conrad, Julius Stephen, CE, 4....Marshfield
Conway, Jefferson D., SS, 3....Portland
Cook, Albert Boardman, A, 2....Portland
Cook, Clive Winton, A, 4....Wells
Cook, J. William, Sc, 3....Myrtle Creek
Cook, James F., LD, 1....Myrtle Creek
Cook, Louise Winfield, Ed, 4....Salem
Cook, Owen Martin, LD, 2....Wells
Cooke, Faith Beamer, H, 4....Corvallis
Cooke, James Philip, ChE, 4....Corvallis
Cookman, Frederick William, EE, 4....Portland
Cooley, Edwin Charles, E, 1....Blue River
Cooney, Wilbur T., A, 2....Roseburg
Cooper, Donald Herbert, E, 1....Corvallis
Cooper, Irvin Aaron, CE, 3....Portland
Cooper, James Marion, Ed, 2....Corvallis
Cooper, Jean Dorothy, Ed, 1....Corvallis
Cooper, Virginia, SS, 2....Portland
Coopey, Martin Portman, CE, 3....Corvallis
Corbin, Uriel Lee, F, 2....Halsey
Corlew, Cecil L., EE, 4....Forest Grove
Cornelius, Thelma Roberta, H, 2....Corvallis
Corporon, Gordon, LD, 1....Grants Pass
Correll, Howard Lowell, F, 1....Corvallis
Corum, Sam Milton, F, 2....Silver Lake
Coshow, Catherine Clair, FA, 2....Prineville
Cottrell, George William, P, 2....Portland
Coulter, Eleanor, Ed, 1....Hood River
Counts, Tom, F, 2....North Bend
Courtney, William Boyd, F, 2....Portland
Coward, Gordon Nason, F, 1..Aloha, Hawaii
Cox, Elmo Cleve, F, 2....Fresno, Calif.
Cox, Nancy Jane, H, 1....Heppner
Cox, Walter Allen, LD, 2....Corvallis
Crane, Walter Jackson, ME, 3....Eureka, Calif.
Crawford, Clayton, Ed, 2....Corvallis
Crawford, Holman Bufford, LD, 1..Portland
Crawford, Josephine Pauline, H, 2....Powers
Crawford, Randall Vern, BA, 2..Oregon City
Creacy, Thomas Nelson, CE, 3....Portland
Creider, Edwin A., Ed, 2....Long Beach, Calif.
Crillo, Louise, H, 3....Portland
Crosbie, William John, SS, 1....Portland
Crossett, Dorothy Grace, LD, 2....Portland

Crossett, Lucy Miriam, Ed, 4.....Portland
Crossley, Charles Brown, EE, 3.....Eureka, Calif.
Crover, Nell F., Ed, 4.....Lebanon
Crow, Louis Martin, BAd, 1.....Lostine
Crowe, George Leland, SS, 2.....Corvallis
Crowell, Hamblin Howes, LD, 2....Portland
Cuddy, Bess Teresa, LD, 1.....Corvallis
Cullen, Frank Benjamin, P, 2.....Corvallis
Cummins, Louise Elsie, SS, 1....Hood River
Currier, Kitty Bernadean, H, 2.....Paisley
Curtin, Victor, Ed, 2.....Portland
Curtis, Jack, Ed, 3.....Corvallis
Cuthbert, Henry, Ed, 2.....Portland
Dahl, Russel Eugene, E, 2.....Portland
Dahlin, Verus, F, Sp.....Corvallis
Dahlman, Virginia, H, 2.....Castle Rock, Wash.
Dahrens, Donald George, F, 1.....Sandy
Dalrymple, Helen Jean, BAd, 1....The Dalles
Dalton, Charles D'orr, P, 2.....Corvallis
Daly, Benjamin R., LD, 1.....Lakeview
Daly, Josie Kathryn, Ed, 2.....Lakeview
D'Ambrosia, Rosina Margaret, H, 1..Marshfield
Dammasch, Eleanore Cascaden, H, 2..Portland
Danforth, Eleanor Wright, H, 4.....Salem
Danforth, George, CE, 4.....Portland
Danforth, Willis, Ed, 2.....Bend
Darling, Alice Barbara, LD, 1.....Corvallis
Darling, Anna Jean, Ed, 1.....Corvallis
Dart, C. Kenneth, Ed, 2.....Corvallis
Dasch, Orpha May, LD, 1.....Salem
Daue, Louis James, CE, 2.....Portland
Davenport, Lloyd Clifton, A, 2..Myrtle Point
Davey, Arloene Edith, H, 4.....Salem
Davey, Meredith La Verne, H, 3.....Salem
Davidson, Mary Jane, H, 2.....Coaldale, Alberta
Davies, Charles H., E, 1.....Portland
Davis, Bernard Wilfred, ME, 3....Willamette
Davis, Clifford Earl, BAd, 2.....Albany
Davis, Doris Jeanette, H, 2.....Corvallis
Davis, Edwin Blundell, Ed, 3.....Sheridan
Davis, Everett Henry, A, 4.....Corvallis
Davis, Keith Edwin, A, 2.....Corvallis
Davis, Lenard H., LD, 2.....Estacada
Davis, Owen Davies, CE, 4.....Honolulu, Hawaii
Davis, Ralph M., CE, 2.....Estacada
Davis, Trist Franklin, A, 2.....Corvallis
Davolt, Claudine Virginia, Ed, 2....Corvallis
Dawson, Harold Wilbur, EE, 2.....Corvallis
Day, Mahon Marshall, LD, 2.....Portland
Day, Wilma Lucille, Ed, 2.....Hubbard
Deardorff, Eldon R., EE, 4.....Corvallis
De Armond, Ardis Carolyn, H, 2.....Ashland
De Armond, Ruth Elizabeth, H, 4.....Sitka, Alaska
De Barnardis, Amo, IA, 2.....Portland
De Camp, Richard Edward, F, 1..Milwaukie
Dehlinger, Karl Fredrick, A, 2.....Klamath Falls
Dehne, Venita D. V., H, 2.....Fort Rock
de Lancy, Raymond W., CE, 2.....Corvallis
Delano, Peter George, SS, 1....Lindsay, Calif.
De Lateur, Conrad Alphonse, LD, 1.....Hoquiam, Wash.
De Lateur, Margaret Adele, H, 2..Hoquiam, Wash.
Delzell, Sheila Nell, H, 3.....Turner
Deming, Kenneth Justice, Ed, 1.....Oregon City
Demme, William Robert, F, 1.....Portland
Dempsey, Ralph William, F, 1.....Rickreall
Denison, John, Jr., A, 2.....Troutdale
Denison, Rex, A, 1.....Troutdale
Dent, Margaret, H, 1.....Roseburg
Denyer, James Ulwin, P, 2.....Turner
Dessert, Joseph F., EE, 2....Pasadena, Calif.
Devine, Clyde Frederick, Ed, 3.....Corvallis
Dew, Marie Margaret, SS, 2.....Corvallis
DeYoung, Catherine, SS, 2.....Portland
Dick, Elinor Bernice, H, 4.....Portland
Dickinson, John Sanford, BAd, 1.....Independence
Dinges, Ruth, SS, 2.....Lexington
Dizney, Clarence Luther, IA, 2....The Dalles
Dobell, Alice Elizabeth, LD, 1.....Corvallis
Dockery, Wilson Carl, BAd, 2.....Portland
Dolan, Mary Jane, H, 2.....Corvallis
Donaldson, Vernon Verl, CE, 2.....Portland
Donley, Gordon Richard, A, 3.....Portland
Donnelly, Francis Klosterman, ME, 3.....Portland
Donnelly, William Matthews, F, 2.....Portland
Dooley, Edmund James, LD, 1.....Albany
Dorrance, Jean, SS, 1.....Enterprise
Doty, Darwin Horneff, Ed, 4.....Corvallis
Dougherty, John Wilson, CE, 4.....Portland
Dougherty, Richard Herbert, E, 1....Portland
Downing, Frances Evlynne, H, 2.....Hood River
Dreisbach, Marjorie, H, 3.....Baker
Driggs, Marion Ione, Ed, 4.....Salem
Dryer, Donald A., LD, 2.....Portland
D'Spain, Grace Elizabeth, SS, 4....Milwaukie
Duhrkoop, Russell, SS, 1.....Portland
Dully, Howard Franklin, CE, 2.....Portland
Dumble, Charles Skiles, CE, 3....Bakersfield, Calif.
Dunagan, Averitt C., ME, 4.....Scotts Mills
Dunford, LeVon Perry, F, 2.....Medford
Dunham, Marion, H, 4.....Portland
Dunham, Walter, BAd, 1.....Powers
Dunkin, Marshall Fielding, Ed, 4.....Salem
Dunlap, Clarence, E, 3.....Sutherlin
Dunne, Marian Lucille, P, 2.....Portland
DuRette, Dorothy Merle, H, 1.....Aurora
Durland, Arthur Charles, ME, 2.....Corvallis
Dutton, Jean, H, 2.....Portland
Dyer, William Connell, LD, 1.....Salem
Eade, Howard Robert, ME, 4....Warrendale
Earle, Sam M., Ed, 1.....Salem
Easley, Norman L., LD, 1.....Portland
Eason, Stearns D., CE, 2.....Salem
Easton, Montague William, F, 4....Corvallis
Ebert, Arnold, A, 2.....Echo
Ebert, Marjory Frances, H, 1.....Echo
Eckman, Donald Parke, SS, 2.....Corvallis
Eckman, Mildred Lillian, H, 1.....Corvallis
Edelson, Zanly Charles, Sc, 3.....Portland
Edlefsen, Robert, E, 1.....Portland
Edson, Robert Harold, ME, 2.....Portland
Edwardes, Edna Martha, Ed, 4....San Francisco, Calif.
Edwards, Howard A., SS, 2.....Freewater
Edwards, Hugh Wilson, Ed, 2.....Portland
Edwards, Sue, H, 1.....San Francisco, Calif.
Egan, Bryan Edward, ME, 4.....Corvallis
Eidson, Mabel Elsie, H, 1.....Eugene
Eisenbrey, Morris, Sc, 4.....Pomona, Calif.
Eisenschmidt, Herbert, Ed, 4.....Portland
Ekstrand, Clarence Charles, SS, 2....Portland
Elder, Douglas Marion, IA, 1.....Williams
Elkins, William Christian, E, 1....Monmouth
Elle, George O., A, 1.....Milwaukie
Elliott, Dorothy May, H, 2.....Dallas
Elliott, Leroy Seth, A, 1.....Corvallis
Elliott, Otis Newell, A, 1.....Ashland
Elliott, Ruth Dorcas, LD, 1.....Portland
Elliott, Sylvia Engleson, LD, 1.....Corvallis
Ellis, David H., ME, 3.....Portland
Emery, Clifford Kenneth, EE, 4....Portland
Emery, Maxine Marie, Ed, 4.....Ashland
Emmett, LaVora Alice, H, 2.....Albany
Emmett, Mildred Rozetta, SS, 2.....Albany
Engle, Melvin Miller, A, 3....Klamath Falls

Endicott, Gilma Ellen, H, 3.....Redmond
Endicott, Harry J., A, 1.....Springfield
Enke, Robert Arnold, CE, 3.....Portland
Entler, Paul Hoye, Jr., BAd, 1.....Portland
Erickson, Walter M., A, 2.....Warren
Erlandson, Shirley M., Ed, 1..Klamath Falls
Esson, Evanelle, SS, 1.....Gervais
Estberg, Norman, E, 1.....Portland
Etchegary, Herbert, F, 2.....Los Angeles, Calif.
Evans, Donald Edward, ME, 3.....Portland
Evans, Lois Myrle, H, 1.....Troutdale
Evenden, William, Sc, 4.....Warrenton
Ewing, Helen Gertrude, H, 2.....Oswego
Failing, William Latimer, Sc, 4.....Portland
Fallen, Walter James, Ed, 4.....Post
Faris, Therone Ivan, F, 3.....Ashland
Farley, Joel Fred, E, 1.....Salem
Farmer, William Henry, A, 2.....Shedd
Farr, John Curtis, A, 2.....Warren
Farran, Richard Emerson, A, 2....Hood River
Farrell, Phillip Ward, A, 1.....Gateway
Farrow, Stanley, EE, 3.....Corvallis
Faust, Robert George, EE, 3.....Portland
Feigenson, Betty, H, 2.....Portland
Feigenson, Tina Esther, H, 3.....Portland
Feikert, Helen, H, 2.....Corvallis
Feldman, Iwan Mardell, BA, 1.....Portland
Felthouse, Mary Margaret, SS, 1..Hermiston
Felton, Glenn W., A, Sp.....Dayton
Felts, Wayne Moore, Sc, 4.....Portland
Fendall, Virginia Lee, Ed, 3....Forest Grove
Fenn, Joel Ransom, A, 2.....Roseburg
Fenner, Eugene, CE, 1.....Philomath
Fenner, Janet Cartis, Ed, 1.....Corvallis
Fenner, Keith Peck, Sc, 4.....Corvallis
Ferguson, George Ray, A, 2.....Corvallis
Ferguson, Henry Jasper, A, 1.....Portland
Ficklin, Edna B., SS, 1.....Huntington
Field, Harry Montague, BAd, 2.....Corvallis
Filipoff, John William, IA, 2.....Halsey
Filippini, Alvin Bloom, LD, 2....San Anselmo, Calif.
Finegan, Harold Joseph, A, 4.....Comelius
Finke, Allan C., BAd, 1.....Portland
Finlay, Donald William, ME, 4.....Portland
Finlay, Gilbert C., P, 2.....Roseburg
Finlay, Gordon Alvin, Ed, 2.....Portland
Finlay, Keith Ferguson, E, 1.....Portland
Finley, Eileen Edens, H, 3.....Bellingham, Wash.
Finley, Francellia Sue, H, 3.....McMinnville
Finn, James Francis, J, 1.....Portland
Finnell, Harold E., A, 2.....Portland
Fisher, Donald Moore, E, 1.....Portland
Fisher, Donnell George, ME, 2.....Seattle, Wash.
Fisher, Frieda Harriett, H, 2.....Haines
Fisk, Earl Gradon, LD, 1.....Maplewood
Fisk, Lloyd L., F, 1.....Eugene
Fitzpatrick, Marian Elise, H, 3.....Albany
Fitzstephens, William Barnett, EE, 4....Corvallis
Fixott, Henry Cline, LD, 1.....Portland
Flavelle, Brian Woolley, F, 1....West Caldwell, N. J.
Fletcher, Ellsworth Richmond, E, 4....Salem
Flood, Einar Johan, IA, 2.....Westport
Flory, Jane Elizabeth, Ed, 3.....Portland
Flower, Winnifred Alice, H, 3.....Portland
Floyd, Bertha Mildred, Ed, 1.....Corvallis
Fluke, Charles Wesley, LD, 1.....Portland
Fluke, W. Jerome, A, 2.....Portland
Fogler, Loren Irving, E, 4.....Mitchell
Folen, Clifford G., LD, 2.....Portland
Folks, Myrna Weltha, SS, 1.....Monmouth
Ford, Rex William, F, 1.....Dayville
Forestel, William Milo, SS, 1.....Portland
Forrester, Ruth Marie, H, 2.....Marshfield
Forse, Harry Bernarr, F, 4..Courtenay, B. C.
Forster, Thomas Robert, E, 1.....Portland
Fosburg, Henry Granson, F, 2....Marshfield
Foster, Marjorie Hunter, H, 3.....Toledo
Fox, Henry G., A, 2.....Lakeview
Fox, Lucile Marie, LD, 1.....Marshfield
Frakes, Maurice Gilbert, A, 1.....Ontario
Fram, Roberta Calista, H, Sp.....Portland
Franklin, Norman Clifford, Ed, 2....Corvallis
Fraser, Thomas Henry, Jr., A, 1.....Moro
Frazee, Theodore Neville, E, 1.....Albany
Frederick, Gertrude Jane, LD, 2.....Yachats
Fredrickson, Frances Louise, SS, 1....Corvallis
Freeman, Robert L., J, 2.....Portland
Frizzell, Burt Jacob, LD, 2.....Enterprise
Fromm, Orris Robert, Ed, 1.....Port Orford
Fronk, Edwin Alexander, Jr., E, 1.....Salem
Fuhrman, Frederick A., CE, 1.....Coquille
Fulkerson, Carmen Sylva, Ed, 2.....Seaside
Fulkerson, Doris Elizabeth, Ed, 3....Corvallis
Fulkerson, Frank Benton, LD, 2....Corvallis
Fulkerson, Jack Fisher, LD, 2.....Corvallis
Fulkerson, Viola Roberta, LD, 2....Corvallis
Fuller, Franklin Ide, LD, 2..Palo Alto, Calif.
Fuller, George Alvin, IA, 2.....Corvallis
Fuller, Leonard F., LD, 2....Palo Alto, Calif.
Fulton, Cora Fair, H, 2.....Patterson, Calif.
Funk, Alvin Leonard, EE, 4.....Corvallis
Funk, Herbert Leander, E, 1.....Corvallis
Fyock, Charles William, A, 2.....Portland
Gaddis, Jean Elizabeth, H, 2.....Portland
Gadsby, William, LD, 1.....Portland
Gallagher, Joan Louise, FA, 1.....Portland
Gallagher, John Hubert, Jr., E, 1....Portland
Gallagher, Raymond Winfield, EE, 4.....Woodburn
Gallaway, Willard Holbrook, IA, 1....Hood River
Galley, James Beverly, F, 1.....Hood River
Galloway, Torrence, LD, 2.....Culver
Gamer, Robert Lick, Sc, 4.....Salem
Gardiner, William Walter, ME, 2....Portland
Gardner, Val D., F, 2.....Stayton
Garlinghouse, Acel, A, 2.....Halfway
Garlinghouse, Lester Edwin, EE, 2....Halfway
Garnjobst, Richard Neal, LD, 1.....Corvallis
Garrison, Ray Leonard, A, 2.....Nyssa
Gary, Marian Caroline, Ed, 4.....Portland
Gaskins, Eleanor Carolyn, H, 2.....Corvallis
Gates, Albert Gwyn, E, 1.....Lyons
Gates, Frank Erven, CE, 1.....Corvallis
Gault, Effie Jean, H, 4.....Gladstone
Gawley, Alfred, SS, 3.....Portland
Gearhart, John Chase, CE, 3.....Portland
Gearhart, Richard Charles, CE, 1....Portland
Gehlar, Mark G., A, 1.....Salem
Geil, Louis Richard, A, 1.....Corvallis
Geisler, Eleanor Anna, SS, 2.....Corvallis
Gentner, Larry C., F, 1.....Portland
Gentry, Thelma Frances, SS, 3.....Medford
George, Eldred, F, 2.....Modoc Point
George, Florence K., H, 1.....Pt. Barrow, Alaska
George, J. Spencer, A, 4.....Corvallis
Gerber, Joseph Albert, EE, 3.....Portland
Gerding, William Burt, LD, 2.....Portland
Gerlach, Claude Theodore, P, 2.....Coquille
Getty, Beatrice Fanny, H, 1.....Lakeview
Gibbon, Clarence Irwin, CE, 2.....Hines
Gibbs, Goldie C., H, 1.....Lakeview
Gibbs, Jack Alban, ME, 3.....Roseburg
Gibson, Bertha Margaret, SS, 1..Pilot Rock
Gibson, Helen Marie, Ed, 2.....Pilot Rock
Gibson, Howard, A, 4.....Corvallis
Gibson, Loene, Ed, 2.....Portland

Gibson, Warren Oliver, ME, 2.....Corvallis
Gignac, Thomas, ME, 3.....Portland
Gilbert, Clifford R., E, 1.....Grants Pass
Gilbert, Frank H., EE, 3.....Portland
Gilbert, Inez, P, 4.....Corvallis
Gilkey, Harold Edgar, A, 1.....Albany
Gille, Phillip Edward, LD, 1.....Salem
Gillette, Leland Burnette, ME, 3.....Salem
Gilman, Raymond Eldon, P, 2.....Portland
Gilmore, Stanley John, P, 2.....Salem
Gilmore, William James, Ed, 4.....Corvallis
Ginther, Francis T., CE, 2.....Halsey
Goff, Kenneth Spencer, P, 1....Cottage Grove
Goodale, Jane Louise, SS, 2.....Jefferson
Goodding, Charlotte Olive, LD, 1....Corvallis
Goode, Mabel Irene, H, 3.....Portland
Goodman, Gladys, H, 4.....Portland
Goodyear, Catherine Louise, LD, 1....Portland
Gordon, James, Ed, 2.....Philomath
Gosney, Clyde Albert, BA, 1.....Marshfield
Goss, Mary Catherine, Ed, 3.....Portland
Gottenberg, Angeline Grace, H, 2....Silverton
Gove, Mahlon Gilbert, CE, 2.....Corvallis
Gove, Wilma Chapman, Ed, 3.....Corvallis
Gowan, Enid L., Ed, 2.....Corvallis
Graf, William, LD, 1.....Shedd
Graham, Barbara Fenwick, H, 3.....Eureka, Calif.
Graham, Crawford H., EE, 3.....Portland
Graham, Helen, LD, 1.....Corvallis
Graham, Jack, CE, 2.....Portland
Graham, Robert Putnam, SS, 1.....Portland
Gramms, Dorothy Morton, BAd, 2....Astoria
Grandy, Jeanne Frances, Ed, 2.....Tigard
Grasier, Frederick Arden, CE, 3....Gladstone
Gravley, Roberta Katherine, FA, 1..Corvallis
Gray, Kenneth, IA, 1.....Portland
Green, Bernice Harriett, Ed, 4.....Portland
Green, Ferris Jane, H, 1.....Portland
Green, Lea Elaine, LD, 1.....Echo
Green, Stanley A., A, 2.....Echo
Greenlaw, Arnold Ziegler, CE, 4....Palo Alto, Calif.
Greenough, Harrison, E, 1.....Coquille
Gregory, Arthur Stanley, CE, 2.....Albany
Gregory, Edward Mortimer, ME, 4....Albany
Gregory, Thelma Aileen, Ed, 4.....Newberg
Grenfell, William Stuart, EE, 3....McMinnville
Griffin, Alice Rhees, H, 3.....Portland
Grim, Willard Allen, F, 2.....Medford
Grimes, Edgar B., A, 4.....Harrisburg
Grimes, Randall E., A, 2.....Harrisbrug
Grimmet, Evelyn Gay, SS, 2.....Medford
Grimmett, Mable Marian, H, 2.....Medford
Griswold, William Fredmore, Ed, 1....Corvallis
Gross, Bernice Johnson, SS, 2.....Corvallis
Gross, Noel Harden, Sc, 3.....Corvallis
Gross, William Ellis, F, 2.....Halfway
Groves, Francis William, A, 2.....Amity
Guggisburg, Ernest, A, 2.....Cottage Grove
Gulick, Virginia Dale, SS, 1.....Portland
Gunter, Ida Cora, Ed, 4.....Grants Pass
Gustafson, Harold Wayne, F, 2....Woodburn
Guttry, Robert John, A, 1.....Sheridan
Haberlach, Frank William, A, 1.....Clackamas
Hadley, Helen May, SS, 2.....Tillamook
Hagerty, Catherine Josephine, SS, 1....Portland
Haight, Gwendolyn Isabelle, H, 2....Cottage Grove
Hakkerup, John Harold, LD, 2.....Prospect
Halderman, Helen Lillian, H, 1.....Portland
Haley, Thomas Irving, CE, 2.....Portland
Hall, Chas. Brandon, LD, 1.....Banks
Hall, Earl Victor, Ed, 2....Los Angeles, Calif.
Hall, Ernest, A, 1.....Redmond
Hall, Marian Gertrude, H, 4.....Portland
Hallmark, Ruth Estelle, J, 2.....Waldport
Haly, Phillip S., E, 2.....Corvallis
Hamilton, Frank Lowell, F, 1....Yreka, Calif.
Hamilton, John Sargent, SS, 3....Ketchikan, Alaska
Hamilton, Wayne Benjamin, BAd, 1....Bend
Hammond, Richard Watt, CE, 2....Portland
Han, Chang Kun, A, 2.....Salem
Hanberg, Byron William, EE, 3.....Boring
Hand, E. Ramona, H, 2.....Corvallis
Hand, Katherine Elaine, P, 2.....Corvallis
Hanley, Edward Dennis, LD, 2.....Portland
Hanna, Hugh Pomeroy, A, 1....Independence
Hansen, Elmer, A, 4.....Freewater
Hansen, Elsie Christina, H, 2.....Portland
Hansen, Virgil Christian, A, 1.....Springfield
Hanshew, Corla, H, 1.....Corvallis
Hanson, Ellen, SS, 2.....Lakeview
Hanson, James William, E, 1.....Portland
Hanson, Louis Philip, EE, 2.....Paisley
Hanson, Reid, P, 1.....Salem
Hanthorn, Mary, SS, 1.....Portland
Hanthorn, Walter, ME, 4.....Portland
Harber, William Glover, CE, 4.....Albany
Harding, Walda B., SS, 1.....Roseburg
Hardman, Eliza, H, 3.....Eugene
Hardy, Dea Jean, Ed, 2.....Corvallis
Harer, W. Sherman, EE, 3.....La Grande
Harlan, Joseph John, Ed, 1....Schenectady, N. Y.
Harn, Wayne, Ed, 4.....Corvallis
Harnisch, Clarabell, H, 2.....Albany
Harper, Jessie Audrey, H, 3....Junction City
Harper, Robert Selvester, A, 4....Adin, Calif.
Harrington, Everett Jay, EE, 4....Marshfield
Harris, Carl Sidney, IA, 2.....Ketchikan, Alaska
Harris, Clara Barbara, LD, 1.....Alhambra, Calif.
Harris, Edward C., Ed, 2.....Condon
Harrison, Georgia Driver, H, 2.....Oswego
Harrison, Maurice, BAd, 1.....Portland
Harrison, Verne, CE, Sp.....Oswego
Hart, Frank Phipps, P, 2.....Lakeview
Hart, Gifford Thompson, ME, 4.....Kerby
Hartsock, Lois Virginia, SS, 1.....Albany
Harvey, Guy Marvin, Ed, 4.....Portland
Harvey, Roy, Ed, 2.....Portland
Harwood, Henry Martyn, LD, 2....Lakeview
Harwood, Lucille Jane, SS, 1.....Corvallis
Hastorf, Ellen Ann, H, 2.....Milwaukie
Hathorn, Jesse, F, 2.....Hood River
Hauge, Dick Francis, BAd, 1.....Corvallis
Hawkins, Carl Alfred, E, 1.....Portland
Hayden, Leone Anna, SS, 1.....Estacada
Hayes, H. S., E, Sp.....Corvallis
Hayes, Lucille Helen, SS, 2.....Powers
Haygood, Myrl Arland, F, 2.....Corvallis
Haynes, Helen Dorothy, H, 4.....Gladstone
Heacock, Woodrow Arthur, ME, 2..Portland
Head, James Albert, CE, 2.....Salem
Heartwell, James Charles, Ed, 4.....Long Beach, Calif.
Hedgpeth, Joel, A, 4.....Fresno, Calif.
Heikenen, Arnold, SS, 2.....Portland
Heinrich, Margaret Celia, H, 1.....Halsey
Heintz, Oscar, F, 1.....Portland
Heise, Lynn Brannan, SS, 1.....Salem
Heldfond, Bob C., P, 2.....Portland
Helmick, Paul Franklin, ME, 4.....Corvallis
Henderson, Edith, BAd, 2.....Portland
Henderson, Robert, LD, 1.....Hermiston
Henderson, Ruth Addie, Ed, 2.....Portland
Henkle, Clarke Williston, A, 3.....Corvallis
Hennessy, Marian Grace, SS, 1.....Corvallis

Henry, Elmer Ernest, CE, 1....Klamath Falls
Herbert, John Mitchell, AH, 3.....North Powder
Hermann, Shelden E., E, 1.....Grants Pass
Herrick, Donald R., EE, 2.....Portland
Herrington, Doris Florence, Sc, 4....Portland
Hertz, DeMaris, H, 4.....Corvallis
Hertz, Howard Davis, ME, 3.....Corvallis
Hessemer, Helen Virginia, H, 1.....Prospect
Hessler, LeVerne Dorothy, H, 4.....Dayton
Hetland, George Forest, BAd, 2.....Burley, Idaho
Hetland, Marjorie Marie, SS, 1.....Burley, Idaho
Hewitt, Marianne Musgrove, LD, 2....Corvallis
Hiatt, Herbert Fahy, E, 1.....Portland
Hibbard, George Harry, Ed, 3.....Molalla
Higgins, Paul Raymond, E, 1.....Baker
Higgs, Harold DeWitt, SS, 1.....Crane
Hill, Fred Wayland, Ed, 2.....Pendleton
Hill, Keith Leon, E, 1.....Sheridan
Hill, Mary Estella, SS, 1.....Portland
Hill, Robert Vernon, LD, 2.....Days Creek
Hill, Valdemar C., A, 2.....Corvallis
Hillstrom, Alphonse M., Ed, 4....Marshfield
Hinkley, Shirley Mae, H, 1.....West Allis, Wis.
Hoag, Leo Elmer, A, 1.....Trail
Hoagland, Lucille E., LD, 1.....Astoria
Hocken, John A., LD, 1.....Corvallis
Hofer, Robert John, A, 1.....Portland
Hoff, William Sherrett, Ed, 2.....Portland
Hoffman, John George, Jr., CE, 3....Portland
Hogl, John, Sc, 3.....Portland
Hohlfeld, Esther, LD, 1.....Tillamook
Hohman, Elta Bessie, Ed, 3....Cottage Grove
Hohman, Ruth Christobel, LD, 2....Cottage Grove
Holland, Alta Louise, Ed, 3.....Portland
Hollenbeck, Charles Robert, P, 2....Corvallis
Hollenbeck, Ervilla May, Ed, 2.....Corvallis
Holley, Robert Aubrey, Jr., A, 2....Portland
Holley, William Chipman, E, 1.....Portland
Hollingsworth, Bevan Dee, P, 1.....Corvallis
Holly, Dorothy Marie, H, 2.....Adrian
Holm, Lillian Marie, SS, 2.....Portland
Holmes, Eldon Fredrick, F, 2.....Albany
Holmes, Joseph Arnold, EE, 3.....Portland
Holmquist, Howard William, F, 2....Corvallis
Holst, Matilda Katherine, FA, 1.....Juneau, Alaska
Holthouse, Mary Margaret, H, 2....Mill City
Holverstott, Fay William, A, 1.....Coquille
Hood, John Gordon, A, 2....Vancouver, Wash.
Hood, William Sutherland, CE, 1....Portland
Hoover, Lawrence, E, 1.....Hood River
Hope, Billy Hewitt, FA, 1.....Vale
Hopkins, Gilbert W., SS, 2.....Portland
Horn, Thelma Elizabeth, H, 2....Pilot Rock
Hornbeck, Maxine, Ed, 2.....Seattle, Wash.
Horrocks, Richard E., A, 2.....Portland
Horton, Sarah Eleanor, H, 1.....Portland
Hoskins, Charles, LD, 2.....Portland
Houghton, Edward Whitney, EE, 2....Irrigon
Houk, Viola Vivian, SS, 2.....Perrydale
Hourihan, Lawrence Maurice, F, 1....Santa Ynez, Calif.
Hout, Lois Kathryn, H, 2.....Klamath Falls
Howard, Elmon West, F, 2.....McMinnville
Howard, Wilma Lorene, H, 4.....Corvallis
Howe, Flora Marguerite, H, 1.....Portland
Howells, Mansfield Allen, SS, 2.....Corvallis
Hoy, Myra Alyce, H, 2.....Corvallis
Hoyt, Shirley Eleanor, H, 1....Milton, Wash.
Huddleston, Francis M., CE, 3.....Corvallis
Hudson, Robert L., F, 1.....Pendleton
Hughes, Gerald Howard, A, 2.....Corvallis
Hughson, Birney Emmett, BAd, 2....Portland
Huhtala, Betty Anne, H, 1.....Portland
Hulery, Jessie Genevieve, LD, 2.....Corvallis
Hull, Ruby Mabel, H, 1.....Monroe
Hume, Louise, SS, 1.....Milwaukie
Hunter, Marjorie Patricia, H, 2.....Corvallis
Huntington, Collis Philip, Jr., P, 1....Marshfield
Hurlburt, Arthur, A, 2.....Corvallis
Hursh, William Joseph, ME, 3.....Corvallis
Hurst, Margaret Geraldine, Ed, 1.....Albany
Hurt, J. Lyle, Sc, 4.....Portland
Huston, Doran A., CE, 2.....Prineville
Hutchinson, Ardath Ethel, SS, 3.....North Powder
Hutchinson, Davis, CE, 2.....Portland
Hutchinson, Robert J., ME, 4.....Multnomah
Hutchison, Orpha Mary, H, Sp.....Burns
Huyer, Winifred Katrine, SS, 2.....Portland
Hynes, Alberta Reagh, H, 3.....Portland
Hyslop, Judy, H, 3.....Corvallis
Hyslop, Mary Ann, Ed, 2.....Corvallis
Hystad, Model Matilda, SS, 1.....Portland
Ingalls, Robert Caldwell, LD, 1.....Corvallis
Ireland, Frederick Peter, IA, 3.....Brownsville
Irvine, John W., CE, 2.....Corvallis
Irvine, Lloyd M., P, 4.....Myrtle Creek
Isted, Ruth Phyllis, H, 2.....Bend
Iverson, Herbert Kuno, IA, 3.....Corvallis
Iverson, Rolf Hans, E, Sp.....Portland
Jackson, Ramona Edith, H, 2.....Corvallis
Jackson, Stonewall Andrew, A, 1.....Canby
Jackson, Virginia A., Ed, 2.....Albany
Jackson, William C., P, 1.....Corvallis
Jacobson, Bert, E, 1.....Eugene
Jacquot, Howard Elliott, EE, 2.....Sisters
Jakel, Gale Rodney, F, 1.....Shedd
Jansen, Albert, BAd, 2.....Tillamook
Jantzen, Frank Willard, E, 2.....Corvallis
Janz, Raymond Wesley, CE, 3.....Portland
Jarmon, Oscar Forrest, E, 1.....Echo
Jarvis, Joseph Willard, Ed, 2.....Corvallis
Javete, Louis Francis, F, 2....Pittsburg, Calif.
Jenkins, Clifford Charles, A, 4.....Coquille
Jenkins, Dorothy Louise, H, 2....San Diego, Calif.
Jenkins, Lawrence C., A, 2.....Coquille
Jenks, Lois Augusta, H, 1.....Portland
Jenkyn, Syvil Kathleen, H, 2.....San Diego, Calif.
Jensen, Raymond Harold, Ed, 1.....Portland
Jensen, Robert W., BAd, 1.....Portland
Jepson, Francis, F, 4.....Elmira
Jessup, William A., Ed, 2.....Lindsay, Calif.
Jobes, Henrietta Elizabeth, H, 2....Falls City
Johnson, Alfred Charles, Ed, 3....Beaverton
Johnson, Archie Laurence, A, 1.....Oxnard, Calif.
Johnson, Cletus W., E, 1.....Dayton
Johnson, Don Elton, LD, 2.....Corvallis
Johnson, Donald Francis, F, 1.....Mapleton
Johnson, Ellen Margaret, H, 2.....Corvallis
Johnson, Emil, F, 2.....Goble
Johnson, Hamilton Kendel, F, 2....Jennings Lodge
Johnson, Harold Marx, EE, 4.....Gresham
Johnson, Hilbert Stanley, E, 2.....Portland
Johnson, Howard Earl, A, 4.....Seaside
Johnson, Janet Elliott, SS, 3.....Portland
Johnson, Joseph Hartwell, E, 1.....Portland
Johnson, Mary Katherine, Ed, 2....Corvallis
Johnson, Robert Allen, BAd, 2.....Salem
Johnson, Shirley E., P, 2.....Malin
Johnson, Vernon Chris, P, 2.....Eugene
Johnson, Wallace West, A, 4.....Seaside
Johnson, Walter Leonard, EE, 4....Portland

Johnston, Ethel Leona, H, 2.....Birkenfeld
Johnston, Frederick Walter, ME, 2.....Milwaukie
Johnston, Leila Marjorie, H, 2.....Jewell
Johnston, Myrtle Lois, H, 2.....Tigard
Jones, Barbara Helene, H, 1.....Corvallis
Jones, Charles Wallis, F, 1.....Ontario
Jones, Creighton Benton, A, 4.....Gervais
Jones, Dixie, LD, 1.....Portland
Jones, Emerson Elton, E, 1.....Woodburn
Jones, Hugh Randolph, SS 1.....Baker
Jones, Keith Vernon, ME, 2.....Corvallis
Jones, Lepha Bernyece, H, 2.....Portland
Jones, Millard Thomas, E, 1.....Portland
Jones, Peggy, H, 2.....Portland
Jones, William Shirley, E, 1.....Corvallis
Jordan, Vera Blanche, H, 1.....Corvallis
Joseph, Emile Caspar, ChE, 1.....Corvallis
Joslin, Charles Woodrow, Ed, 2.....Corvallis
Joslin, Dick, P, 1.....Corvallis
Joslin, Harold W., Ed, 2.....Corvallis
Joy, B. Elizabeth, H, 2.....Ashland
Joy, Clifford, SS, 4.....Corvallis
Joyce, Maurene, SS, 1.....Portland
Judd, Dorothy Alice, H, 2.....Salem
Kadau, George Ernest, LD, 1.....Aumsville
Kalibak, William Martin, F, 1.....Portland
Kammerer, Helen Pauline, H, 4.....Corvallis
Kappel, Rudy Phillip, SS, 1.....Portland
Kaufman, Walter Hill, IA, 4.....Monroe
Kearney, Ellen, Ed, 2.....Portland
Kebbe, Chester Edwin, LD, 1.....Mohler
Kebbe, Stanley Ernest, CE, 4.....Mohler
Kee, William Nassau, E, 1.....Twin Falls, Idaho
Keen, Sylvia C., H, 4.....Shaw
Keep, Dorothy Rose, Ed, 2.....Corvallis
Keizur, Harry Delbert, ChE, 1.....Pendleton
Kelley, Clinton Monroe, Sc, 4.....Corvallis
Kellogg, Robert Farrar, E, 1.....Portland
Kelly, James Vernon, LD, 2.....Portland
Kelly, Max Lyle, E, 2.....Albany
Kenna, Wilfred Patrick, Ed, 2.....Portland
Kenyon, Letta, Ed, 2.....Klamath Falls
Kerslake, Margaret B., H, 1.....Troutdale
Kerwin, Hugh Andrew, P, 3.....Corvallis
Kessi, Donald Francis, LD, 1.....Harlan
Kessler, J. Raymond, ME, 3.....Boise, Idaho
Keyes, John Robert, BAd, 2.....Bend
Kidd, Josephine Miriam, H, 4.....Corvallis
Kidder, Wilbur Lamont, Ed, 1.....Corvallis
Kimes, Newman Robert, F, 1.....Paisley
King, Anne Elizabeth, LD, 2.....Portland
King, Ercel Luthy, BAd, 1.....Portland
King, Harold J., A, 1.....Pendleton
King, Nathan Andrew, SS, 1.....Portland
Kirkpatrick, Maxine, P, 2.....Astoria
Kissling, Randolph O., A, 3.....Portland
Klein, Kenneth Miller, EE, 4.....Salem
Kletzer, William, A, 4.....Portland
Klink, Joanne, Ed, 2.....Canyon City
Kloepping, Dorothy Lucile, H, 3.....Salem
Knagenhelm, Mildred Irene, H, 3.....Los Angeles, Calif.
Knapp, Earl Barry, A, 1.....Corvallis
Knapp, Loraine, Ed, 1.....Corvallis
Kodani, Arthur Takeyoshi, SS, 3.....So. Pasadena, Calif.
Koelblen, René August, SS, 3.....Portland
Koerner, George Henry, A, 2.....Gold Beach
Kohlhagen, Elza Frances, H, 2.....Roseburg
Kolkowsky, Francis B., LD, 2.....Portland
Koonst, Vades Juanita, H, 4.....Portland
Koontz, Clyde Herman, BAd, 2.....Halsey
Korf, Charles Willis, E, 1.....Corvallis
Korf, Juanita, Ed, 2.....Corvallis
Koser, Raymond F., F, 1.....Dallas
Kovtynovich, John, E, 1.....Oswego
Kraus, Elizabeth Louise, H, 4.....Aurora
Krause, Gustav Joseph, F, 2.....Waldport
Krenke, Irwin, A, 2.....Napa, Calif.
Kresse, Malcom Sumner, P, 1.....Hood River
Kriesien, Richard E., LD, 2.....Los Angeles, Calif.
Kroschel, Robert, A, 2.....Medford
Krueger, Amelia Marie, Ed, 2.....Oregon City
Kruse, Eugene, SS, 4.....Portland
Kruse, Howard W., ChE, 1.....Hood River
Kruse, James Wallace, SS, 1.....Portland
Kuhl, Donovan, IA, 4.....Corvallis
Kuhn, Jack Kemp, P, 4.....Salem
Kuhn, Violet A., H, 2.....Dayville
Kupfer, Mary E., SS, 2.....Corvallis
Kutch, Paul (deceased), Ed, 2.....Albany
Kyle, Donald Cecil, F, 1.....Forest Grove
Kyle, Frances Grace, H, 2.....Portland
Lachmund, Dorothy Elsie, Ed, 4.....Portland
Lage, Charles Xenophon, E, 2.....Hood River
Lage, George H., P, 3.....Hood River
Lamar, Jean Jessie, BAd, 2.....Corvallis
Lamb, C. Richard, E, 1.....Portland
Lambert, Harry Euclid, SS, 2.....Corvallis
Lambourne, Robert McArthur, BAd, 2.....Portland
Lammi, Joe Oscar, F, 4.....Portland
Lamphere, Arthur Ray, A, 2.....Corvallis
Lamphere, Doris May, H, 1.....Corvallis
Lane, Lea Anne, Ed, 2.....Portland
Lange, Robert Abbott, A, 4.....Eau Claire, Wis.
Langlois, Walter James, Ed, 2.....Bandon
Larsen, Norman Moe, F, 2.....Noti
Larsen, Rosemary Faire, Ed, 2.....Alsea
Larson, Andrew Warren, Sc, 4.....Corvallis
Larson, Chloe, SS, 2.....Corvallis
Larson, Gustaf Albin, Ed, 2.....Waukegan, Ill.
Larson, Julia Agatha, Ed, 2.....Boring
Larson, Margaret Eleanor, H, 1.....Astoria
Larson, Noal P., Sc, 4.....Corvallis
Larson, Richard John, A, 2.....Marshfield
Larson, Roland Edward, CE, 3.....Astoria
Larson, Thalia Aileen, H, 4.....Marshfield
Lathrop, Catherine, SS, 1.....Portland
Lathrop, Sidney P., CE, 4.....Portland
Laughlin, Lyle Lee, SS, 2.....Astoria
Launtz, Elna Walker, LD, 1.....Portland
Lawrence, Robert Windle, LD, 1.....Corvallis
Lawrence, William James, Ed, 2.....Corvallis
Lawton, Donald Myron, SS, 3.....Portland
Layfield, Aileen Helen, H, 1.....Corvallis
Layfield, Robert A., LD, 2.....Corvallis
Lazarus, Willard Wright, ME, 4.....Corvallis
Lea, Lavina Lorraine, SS, 1.....Portland
Leary, Elizabeth Gray, LD, 2.....Portland
Leavitt, Lester Lewis, LD, 1.....McGlynn
Ledgerwood, Edgar, Ed, 4.....Stayton
Lee, Margaret Norton, H, 1.....Portland
Lee, Robert Ayres, A, 1.....Glendale, Calif.
Leep, Phyllis L., Ed, 1.....Corvallis
Lehmann, Ernest W., P, 3.....Portland
Lehnert, Harold Leland, IA, 1.....Corvallis
Lehrbach, Inez Margaret, Ed, 3.....Roseburg
Leibbrand, Burton, LD, 2.....Milton
Leidig, Martin Robert, CE, 2.....Carmel, Calif.
Leinau, Robert Keim, A, 2.....Corvallis
Leitz, Helen Katherine, H, 2.....Portland
Lemery, Frederick Omer, F, 4.....Brooks
Lemon, James Leonard, P, 1.....Monroe
Lenchitsky, Julius Carl, Ed, 2.....Nehalem
Lenon, Waivo Loudene, H, 4.....Monitas
Leonard, Jesse Edward, LD, 2.....Junction City
Leonard, Virdon Emmet, P, 1.....Junction City
Levinger, Henry Laurence, P, 4.....Baker
Lewis, Adria Ernestine, SS, 2.....Corvallis

Lewis, Edward Collins, Ed, 2.....Portland
Lewis, Jacqueline L., LD, 2.....Corvallis
Lewis, Robert Stanley, F, 4.....Jacksonville
Liddle, Adelaide, SS, 2.....Corvallis
Liles, Fern Pauline, SS, 1.....Corvallis
Lille, Lloyd Osbourne, ME, 4.....Portland
Lind, Harry Emil, F, 1.....Colton
Lindbeck, Kathleen Mae, SS, 2.....Salem
Linder, Freida Jane, SS, 1.....Corvallis
Lindros, Ernest Edward, ME, 2.....Corvallis
Lindsay, Forrest S., Ed, 4....Hayward, Calif.
Lindstrom, Myrtle Kathryn, SS, 1....Portland
Lindwall, Victor, F, 4.....Portland
Lingaas, John Martin, F, 2.....Portland
Linstedt, Kermit Walter, F, 1.....Eugene
Lippert, Roy Herbert, A, 2.....Mt. Vernon, Wash.
List, Anna Marjorie, Ed, 2.....Exeter, Calif.
Litscher, Erma Evelyn, H, 3.....Eugene
Little, Frank Anthony, Ed, 2.....Corvallis
Little, Hollis Rudolph, ME, 4.....Portland
Littrell, Earl Knox, BAd, 1.....Medford
Littrell, Edith Lucille, H, 1.....Medford
Loe, Chester Amos, A, 4.....Corvallis
Loesch, Robert John, ME, 2.....Medford
Long, Florence, P, 4.....Taft
Long, Olney, ME, 3.....Multnomah
Longtin, David Edward, Ed, 3.....Portland
Lonner, Lorraine Louise, Ed, 1.....Portland
Lord, Charles Maurice, F, 2.....Corvallis
Lorenz, Wilfred Grenfell, LD, 2.....Portland
Losse, Bette Louise, H, 4.....Santa Clara, Calif.
Love, Alma Lillian, SS, 1.....Forest Grove
Lowe, Arthur Livingston, SS, 4.....Corvallis
Lowe, Howard Dorse, BAd, 2.....Corvallis
Lowe, James Burns, F, 1.....Rainier
Lowry, Burton George, LD, 1.....Medford
Lubersky, Albert Raymond, IA, 4....Portland
Lucas, Velvo Mayre, H, 2.....Pendleton
Luedtke, Karl Daniel, ChE, 2.....Portland
Luehrs, Constance Lorraine, H, 1....Ontario
Luehrs, Herbert A., P, 2.....Ontario
Lumm, Josephine, FA, 1.....Portland
Lumm, Marjorie Louise, H, 2.....Portland
Lundberg, Harry Gordon, ChE, 2....Portland
Lundgren, Ruth Eleanor, SS, 3....Beaverton
Lunn, Ellen Vivian, LD, 2.....Corvallis
Lunn, John Henry, A, 2.....Corvallis
Lyons, Jack, Ed, 2.....Portland
McBride, Jennie Lucy, H, 1.....Corvallis
McBride, William Vale, F, 2.....Corvallis
McCabe, Francis Robert, F, 4.....Portland
McCallister, Doris Maurine, H, 2.....Salem
McClelland, Ruth, H, 2.....Portland
McClew, Helen Gladys, H, 2.....Eugene
McClung, Tom H., ME, 4.....Portland
McClurg, Stanley Douglas, A, 2....Portland
McComb, Fremont, F, 1.....Portland
McConnell, Melva Myrle, H, 2.....Corvallis
McCormick, Emmett Patrick, E, 1....Albany
McCormick, Paul, IA, 3.....Portland
McCormick, Robert, A, 2.....Portland
McCornack, Andrew A., A, 1.....Eugene
McCoskrie, Lucetta Frances, LD, Sp....Corvallis
McCrae, Margaret Callander, Ed, 2....Monmouth
McCrea, William Gordon, BAd, 2....Hollywood, Calif.
McCready, Ruth Janet, H, 2.....Chiloquin
McCurdy, Winslow Iffland, CE, 4.....Port Townsend, Wash.
McDonald, Flloyd, A, 2.....Pendleton
McEachern, Jack Feas, CE, 2....Oregon City
McElroy, Ned Albert, ChE, 4....The Dalles
McEwen, James William, A, 2.....Nyssa
McFaul, Zoeth Francis, E, 1.....Echo
McGilvra, Ralph Donald, ME, 2.....Portland
McGinnis, Ivan L., ChE, 2.....Corvallis
McGovern, Phillip Clifford, IA, 2....Monroe
McGrew, Finley Oliver, CE, 2.....Portland
McGrew, Raymond P., P, 1.....Portland
McHenry, Martha Gertrude, Ed, 1.....Corvallis
McIntosh, Edwin Herman, P, 2....Portland
McIntyre, Adelyn Isabelle, SS, 1....Pendleton
McIntyre, Mary Katherine, Sc, 4....Portland
McKay, Thomas Plummer, E, 1.....Seaside
McKenna, Cyril, ChE, 1.....Marshfield
McKibben, Ellen Arnest, Ed, 2.....Cottage Grove
McKibben, Glen Milburn, EE, 3.....Cottage Grove
McKnight, Sylvia Estelle, SS, 1....Freewater
McLain, Howard J., P, 1.....Holley
McLaughlin, Edward Joseph, ME, 2..Garden Home
McLaughlin, Robert, BAd, 2.....Corvallis
McLean, Allan Dunbar, ME, 2.....Portland
McLoughlin, Margaret Mary, LD, Sp....Corvallis
McMahan, Herbert William, E, 1....Klamath Falls
McMath, Flora, H, 2.....Medford
McMillan, Gladys Wilson, H, 2.....Portland
McMillin, Jean, H, 2.....Bellingham, Wash.
McMurdo, Charles Edward, LD, 1....Heppner
McNealy, Ruth Arreno, H, 2..Klamath Falls
McPherson, Wilma, SS, 3.....Portland
McRay, Ferris L., E, 2.....Myrtle Point
McSheffery, George W., Ed, 2....Los Angeles, Calif.
McVay, Margaret Alice, H, 2.....Oswego
Maarinen, Helen, Ed, 2.....Corvallis
MacAdam, Thomas Wayne, FA, 3....Pasadena, Calif.
MacCarthy, Eugene Daniel, A, 1....Independence
MacDonald, William Fred, Ed, 2....Medford
Mack, John Connie, P, 2.....Huntington
Mack, Joseph Henry, Ed, 4.....Corvallis
MacKenzie, Wilma M., Ed, 2.....Portland
MacLaurin, James Donald, F, 1.....South Orange, N. J.
Macpherson, Betty Miriam, LD, 1....Albany
Macpherson, David, LD, 2.....Albany
Maddux, Dorothy Louise, LD, 1.....Seattle, Wash.
Maginnis, Timothy Fernando, CE, 3..Marshfield
Magness, Millard Jasper, A, 1.....Dayton
Maguire, David Kimball, LD, 1.....Oswego
Maguire, Elizabeth Harlan, LD, 2....Oswego
Makela, Edward William, LD, 2.....Astoria
Malin, Alice Genevieve, H, 3.....Park Place
Maneely, Ruth J., SS, 1.....Corvallis
Mang, Sallie Virginia, H, 1.....Portland
Mangels, Helen Jean, H, 2....Cordelia, Calif.
Mann, Alice Leona, H, 3.....Portland
Mansfield, Eleanor Faye, LD, 1....Sherwood
Mansfield, Leola Annette, H, 2.....Murphy
Mapes, Clifford A., E, 1.....Cornelius
Mariano, Juan A., A, 4.....Corvallis
Markart, Frank Albert, LD, 1.....Lebanon
Markham, Floyd Alonzo, ME, 2....Freewater
Markley, Merle H., LD, 1.....Hood River
Marquardt, Virgil Ernest, E, 2.....Portland
Marquis, Hugh M., ME, 4.....Portland
Marsh, James Spencer, E, 1.....Portland
Marsh, Thomas Parker, E, 3.....Portland
Marshall, Earl, A, 1.....Nyssa
Marshall, Edward Henry, F, 2.....Portland
Marshall, Madge Macrae, Ed, 1.....Condon

Martin, Beverly Nadine, SS, 1.....Corvallis
Martin, Bruce, Ed, 4.....Corvallis
Martin, Ernest E., A, 2.....Oregon City
Martin, Mary Hope, H, 1.....Corvallis
Mason, Donald Lyman, IE, 3.....Eugene
Mason, Draper Coolidge, CE, 4.....Portland
Mason, Wayne, ME, 4.....Talent
Masterson, Melvin I., SS, 2.....Long Beach Calif.
Mather, Geraldine Maude, H, 1.....Corvallis
Mathiesen, Walter Jesse, Ed, 4.....Banks
Matson, Mildred Anne, SS, 2.....Astoria
Mattoon, Hubert Maxon, Sc, 3.....Portland
Maw, Florence Helen, Ed, 4.....Chitwood
May, Eldon Morris, ME, 3.....Forest Grove
Mayo, Patricia Helen, SS, 1.....Portland
Mayo, Stewart Edward, A, 2.....Portland
Mays, Edwin Leroy, P, 1.....Pendleton
Mealey, Robert Hamilton, F, 2.....Foster
Meany, William M., ME, 2.....Portland
Medley, Charles W., SS, 2.....Oakland
Meek, Albert Denison, SS, 1.....St. Helens
Meek, Beauford, A, 1.....Halfway
Meeker, Cecil Hamilton, IA, 3.....Toledo
Meier, Herbert John, E, 1.....Corvallis
Meiners, Henry Cito, ChE, 1.....Portland
Mellin, Carolyn Frances, Ed, 2.....Corvallis
Mellinger, Alan Robert, LD, 1.....Newberg
Merriss, Virginia, Ed, 3.....Portland
Merritt, Alice Gertrude, H, 2.....Juneau, Alaska
Merryman, Arthur D., Ed, 1.....Corvallis
Merryman, Carl Dittmar, Sc, 4.....Corvallis
Mershon, James Lyle, ME, 3.....Corvallis
Messenger, Richard Maurice, ChE, 1.....Takilma
Metcalf, Laurence R., E, 1.....Hood River
Metcalf, Lois Elaine, H, 1.....Portland
Metzger, Donald E., 1.....Roseburg
Meyer, Ruth Angeline, H, 2.....Corvallis
Meyer, William Fredrick, LD, 1.....Corvallis
Meyers, Averill, A, 3.....Echo
Meyers, Carol, Sc, 4.....Portland
Meyers, John Charles, IA, 2.....Redmond
Michalson, Gwendolyn Beatrice, J, 1....Corvallis
Middlebrook, Paul Louis, LD, 1..West Linn
Mikesell, Oscar Edwin, A, 4.....Hermiston
Miles, Gordon, Ed, 2.....Portland
Millard, Janet, H, 2.....Portland
Miller, Arthur George, Ed, 2.....The Dalles
Miller, Byron Lee, Ed, 3.....Hood River
Miller, Fred Earl, EE, 3.....Portland
Miller, Jack Malcolm, E, 2.....Portland
Miller, Jack Manley, F, 4.....Elgin, Ill.
Miller, James Garfield, Jr., SS, 1....Portland
Miller, Leo E., LD, 1.....Gold Beach
Miller, Lincoln Whitaker, E, 1.....Portland
Miller, Maryanna, LD, 1.....Portland
Miller, Merwin, ChE, 3.....Tillamook
Miller, Ralph Vincent, ChE, 1.....Enterprise
Miller, Richard, Ed, 2.....Portland
Miller, Robert B., CE, 3.....Portland
Miller, Susan Helen, H, 4.....Portland
Miller, Thomas James, EE, 2.....Portland
Miller, Verna Catherine, H, 1.....Tillamook
Miller, Victor Burton, Ed, 2.....Enterprise
Millhollen, Lloyd, Jr., Ed, 4.....Corvallis
Milligan, Genevieve, LD, 2.....Corvallis
Million, Harold Jim, E, 2.....Corvallis
Mills, Jane Annette, H, 2.....Sitka, Alaska
Milne, Alyce Georgena, Ed, 2.....La Grande
Milne, Bessie, H, 3.....Corvallis
Milne, H. Bayard, LD, 1.....Corvallis
Minton, James Lewis, F, 2.....Paisley
Mitchell, Kathryn Mary, Ed, 2.....Echo
Mitchell, William Milton, BAd, 2....Lebanon
Mitola, Dan Joe, Ed, 2.....Portland
Moe, Bickie, Ed, 1.....Corvallis
Moe, Harold William, Ed, 2.....Corvallis
Moe, Jim O., LD, 2.....Corvallis
Moeller, Therald, ChE, 4.....Toledo
Molesworth, Frank, P, 2.....Portland
Montgomery, James Anthony, E, 1.....Bend
Moody, George, F, 2.....Santa Cruz, Calif.
Moore, Charles Balcom, P, 3.....Portland
Moore, Dorothy Evelyn, SS, 3.....Salem
Moore, James Kelly, EE, 2.....Salem
Moore, Louise, LD, 2.....Corvallis
Moore, Orie Stephen, A, 4.....Medford
Moran, Richard Frederick, SS, 1.....Portland
Morency, Eileene Loraine, Ed, 4....Portland
Morgan, Robert Munroe, A, 2.....Linnton
Morgenroth, Francis Byron, A, 2....Portland
Morris, Albert William, LD, 1..Oregon City
Morris, Alice Ellen, SS, 1.....West Side
Morris, Annie-Aria, Ed, 2.....Waldport
Morris, Gordon Edward, BAd, 2....Portland
Morris, Robert Dewar, E, 1.....Portland
Morris, Ruth, H, 2.....West Side
Morris, Willis H., ME, 2.....Portland
Morris, Woodrow Wilson, A, 2.....Lakeview
Morrison, Walter Bruce, ME, 4.....Portland
Morse, Joseph Davidson, F, 1.....Tangent
Morse, William S., ChE, 2.....Prineville
Moss, F. Dudley, ChE, 2.....Portland
Mott, Albert Harvey, E, 1.....Astoria
Mount, Parker, A, 1.....Oregon City
Mountain, Bob, Ed, 1.....Burlingame, Calif.
Mountain, Robert Theodore, ME, 4....Aumsville
Moyer, Virginia Dorothy, H, 1.....Portland
Mueller, Roy Morgan, Ed, 2.....Portland
Mulligan, Peggy Kennedy, SS, 1.....Albany
Mullin, William Alfred, ChE, 2.....Corvallis
Munch, Melvin Francis, ChE, 4.....Portland
Munford, James Kenneth, Ed, 4.....Banks
Murdock, Florence Louise, IA, 2....Corvallis
Murdock, Victor Tate, A, 2.....Corvallis
Murphy, Mrs. Nita E., H, 4....North Vancouver, B. C.
Murray, William F., P, 1.....Baker
Musgrave, Thaye, Ed, 2.....Portland
Musgrove, Rose Ellen, Ed, 2.....Portland
Mushen, Robert Linton, CE, 4.....Lakeview
Myall, Ned Owen, F, 1.....Oakland, Calif.
Myers, Bruce Kendig, SS, 2.....Corvallis
Myers, Fred J., CE, 2.....Corvallis
Myers, Polly, H, 1.....Lakeview
Nance, Marion Nelson, F, 3.....Hood River
Nassett, Lila Otelia, LD, 2.....Corvallis
Naylor, Jack Thomas, EE, 4.....Wolf Creek
Nebergall, Esther Louise, H, 1.....Albany
Neils, Jean Eleanor, SS, 1.....Portland
Nelson, Charles, CE, 4.....Cascade Locks
Nelson, Clara Alvina, H, 1.....Lexington
Nelson, Dudley Woodrow, Ed, 2....Milwaukie
Nelson, Evans Elmer, F, 1..Klamath Agency
Nelson, Helen Elizabeth, H, 1.....Marshfield
Nelson, Virginia, Ed, 4.....Oswego
Ness, Thomas H., Jr., LD, 1.....Roseburg
Neusiis, Carl, P, 1.....Baker
Newberry, James Raymond, ChE, 4....Forest Grove
Newman, Harold, ChE, 1.....Corvallis
Newport, Carl LeRoy, BAd, 1.....Tangent
Newton, Howard Harold, E, 1.....Corvallis
Nicholas, Jack Louis, IA, 2.....Lakeview
Nichols, Harriet Amanda, H, Sp....Cottage Grove
Nichols, John Randolph, Ed, 2.....Portland
Nichols, Robert Ashcraft, A, 4.....Corvallis

Nichols, Waldo Emerson, FA, 2.....Portland
Nichoson, Franklin Hinds, SS, 1....Portland
Nickels, Walter, ME, 4.....Portland
Nielson, Thora Elizabeth, Ed, 4.....Tigard
Nimmo, Mary E., J, 1.....Seaside
Nissen, Shirley, LD, 1.....Glendale, Calif.
Noble, Marvin Boone, LD, 1.....Corvallis
Nordquist, Albin Theodore, A, 2.....Astoria
Nordstrom, Cecilia Marie, H, 1....Birkenfeld
Norelius, Lenore Ann, H, 2.....Corvallis
Norton, Charles Edward, A, 4.....Roseburg
Oakes, John Robert, CE, 1.....Ontario
Oatfield, Inez Anne, H, 4.....Milwaukie
Obenchain, Oliver, F, 2.....Central Point
O'Brien, Donnell Edward, IA, 1.....Toledo
O'Brien, William Michael, EE, 2....Portland
O'Connell, Forrest Lester, Ed, 2....Portland
O'Connor, John Raymond, E, 1.....Portland
Odekirk, Bernadette Louise, H, 1....Portland
O'Donnell, Robert James, BAd, 2....Portland
Officer, Robert Burns, F, 1.....Dayville
Oft, Eggert S., A, 1.....Ontario
Oft, Homer H., A, 2.....Ontario
Ogburn, Irene Frances, Ed, 2.....Portland
Oglesby, Rebecca, SS, 3.....Corvallis
Oldham, Dorothy, Ed, 3.....Glendale
Olds, Clarence Russell, A, 2.....Portland
Oliver, Frank Wesley, Ed, 2.....Eugene
Olson, Earl Bernhard, SS, 3.....Portland
Olsvick, Harold Marvin, CE, 3.....Astoria
O'Neill, Hugh Collins, SS, 4.....Portland
Onishi, Raymond Kazuye, IA, 2.....Corvallis
Oorthuys, Hendrick Jacob, EE, 4....Corvallis
Opdenweyer, Albert E., EE, 3.....Portland
Ott, Mary Elizabeth, H, 4.....Portland
Ott, Walther Henry, A, 4.....Hermiston
Packard, Mildred L., LD, 1.....Corvallis
Padgett, Peter Wilson, Sc, 3.....Hood River
Paetsch, Lorena Elizabeth, FA, 1.....Banks
Painter, Hazel Ruth, SS, 2.....Corvallis
Painter, Roy Phillip, A, 2.....Corvallis
Palm, Milton Harley, E, 2.....Roseburg
Palmberg, Walter Henry, Ed, 2.....Astoria
Palmer, Edith Lorene, LD, 1.....Huntington
Palmer, George Reiser, P, 4.....Hood River
Palmrose, Ellie Margareta, Ed, 1.....Seaside
Pangle, Harold James, Ed, 2.....Portland
Park, Daisie Esther, LD, 1....Klamath Falls
Parke, Alice May, H, 2.....Portland
Parker, Edward Thornburg, CE, 4..Portland
Parker, Ruth Elliott, H, 1.....Portland
Parks, Wendell King, LD, 1..Trinidad, Calif.
Parman, Jean Elizabeth, Ed, 1.....Condon
Parrish, Ruth K., LD, 2.....Dallas
Parrott, Marjorie Lucille, Ed, 4.....Portland
Parrott, Max Horton, LD, 1.....Portland
Paschall, Boots Theobelle, SS, 1.....Portland
Patch, Eileen Gamwell, Ed, 3.....Powers
Patch, Margaret Jane, H, 1....Weiser, Idaho
Patrick, Robert John, Ed, 2.....Portland
Patrick, William Donald, SS, 2.....Portland
Patton, William R., LD, 2.....Portland
Paul, Pauline Constance, H, 2.....Portland
Pauling, Alice Ruth, H, 1.....Astoria
Paulsen, Maxine Mary, Ed, 4.....The Dalles
Payton, Herbert Gordon, BAd, Sp..Redondo Beach, Calif.
Pearce, Jack B., SS, 4.....Portland
Pearl, Delman VanJene, F, 2....Brownsville
Pearson, Mervin Otto, E, 1.....Turner
Pearson, Samuel John, EE, 3.....Portland
Peck, Eliot R., E, 1.....Corvallis
Peery, Edwin Parker, LD, 1.....Portland
Peiffer, Kareen S., Ed, 4.....Portland
Pendleton, Betty Marie, H, 1.....Stayton
Pentzer, Donald J., A, 4.....Grants Pass
Perkins, Dave McCoy, BAd, 2.....Portland
Perkins, Oliver Raymond, E, 2.....Gardiner
Perrine, Peter Charles, LD, 1....Oregon City
Perry, Grant Wellington, P, 2.....Portland
Petersen, Andrew Theodore, A, 2....Buellton, Calif.
Petersen, Helen Margaret, SS, 1....Lewiston
Peterson, Earl Norman, BAd, 2.....Knappa
Peterson, Eugene Kyger, F, 2....Eagle Rock, Calif.
Peterson, M. Maxine, Ed, 4.....Corvallis
Peterson, Marie Anna, H, 2.....Lakeview
Peterson, Sharoo, H, 2.....Corvallis
Peterson, Sigurd Harlan, Jr., LD, 2....Corvallis
Peterson, Wilson A., SS, 1.....Portland
Petterson, Elm N., A, 2.....Colton
Petterson, Waldo I., F, 4.....Colton
Peyree, Bernice Hester, H, 2....Independence
Phelps, Donald Earl, E, 1.....McMinnville
Phelps, Evlyn Charlotte, H, 1.....Philomath
Philbrick, John Rae, F, 4.....Portland
Philips, William Sellers, F, 2.....Marshfield
Phillips, Dorman Darst, SS, 1.....Corvallis
Philpott, David R., A, 2.....Leneve
Philpott, Georgia Carol, H, 1.....Leneve
Phythian, Marjorie Louise, H, 1.....Medford
Piatt, Don Robert, E, 1.....Forest Grove
Pickens, Lola Dale, H, 2.....Salem
Pickering, Marjorie Blanche, H, 1....Warrenton
Pierce, Robert Raymond, CE, 1.....Portland
Pierce, Willis L., A, 1.....Falls City
Pitts, John Prescott, F, 2.....Corvallis
Planansky, Fred George, CE, 1.....Baker
Plant, Gordon, Ed, 2.....Independence
Platt, Eleanor Mabel, FA, 1.....Corvallis
Poland, Edward Willard, F, 3.....Shedd
Pollak, Robert Allen, P, 2.....Albany
Pollock, Wellington Wilkes, P, 4..Tillamook
Pope, Jane Weare, LD, 2....Hollywood, Calif.
Popp, Katherine, LD, 2.....Portland
Port, Lee Chapin, Jr., F, 1.....Jacksonville
Porter, Andrew Robert, E, 1.....Portland
Porter, Lyle, PE, 2.....Corvallis
Post, Anita Helene, Ed, 4.....Portland
Post, Wilma Josephine, Ed, 3.....Portland
Potter, Donald Milton, Ed, 2.....Portland
Potter, Jeanette C., SS, 1.....Baker
Poulin, Jack Arthur, P, 1.....Salem
Pounder, Fred Harold, P, 1.....Silverton
Powell, Lloyd, EE, 2.....Tyee
Powers, (Margaret) Ruth, LD, 1....Corvallis
Pozzobon, Felice, SS, 1.....Jerome, Ariz.
Prahl, Charles George, CE, 3.....Ontario
Pratt, Mildred I., SS, 1.....Portland
Pratt, Perry Walter, ME, 2.....Corvallis
Price, Pauline Eunice, SS, 1.....Philomath
Price, Ruth, Ed, 2.....Portland
Propstra, Helen Annette, H, 2..Forest Grove
Pugh, Mary Josephine, LD, 1.....Shedd
Pugsley, Harold K., P, 3.....Corvallis
Purcell, Bardell, Ed, 1.....Portland
Purvis, Alice Edith, Ed, 4.....Vale
Putman, Marjorie Adele, H, 1....Multnomah
Puustinen, Toivo Usko, IA, 3.....Svensen
Quade, Theodore Martin, CE, 1.....Oregon City
Quigley, Alice Elizabeth, H, 2....San Francisco, Calif.
Quimby, Burnaze Mary, H, 2.....Bend
Raabe, Howard William, Ed, 3.....Portland
Raasina, Mildred Marta, LD, 2.....Astoria
Rada, Eduard Louis, P, 1.....Mill City
Raisig, Theodore John, Ed, 4.....Portland
Ramsay, William John, SS, 1.....Pasadena, Calif.

Ramsby, Frances, Ed, 2.....Portland
Ramsey, Robert Wade, CE, 2.....La Grande
Rasmussen, Boyd L., F, 3.....Ontario
Rawlins, Donald Harrington, F, 1.....Gladstone
Ray, John Thomas, IA, 1.....Portland
Read, Mark W., E, 1.....Corvallis
Reavis, Marciel Jeanne, J, 1.....Dayton
Redfield, Charlotte Ann, H, 2.....Corvallis
Redman, Jacob Arthur, CE, 4.....Portland
Reed, Alice Elizabeth, H, 1.....Corvallis
Reed, Dent B., Ed, 4.....Walnut, Calif.
Reed, Ethyl Pauline, LD, 2.....Corvallis
Reed, Ruth M., H, 2.....Medford
Reed, Theodore Stewart, A, 1....Los Angeles, Calif.
Reed, Waller Hardy, F, 3....Stockton, Calif.
Reedy, Maurine, Ed, 1....Los Angeles, Calif.
Reedy, Taylor, Ed, 4.....Los Angeles, Calif.
Reekman, Evelyn Alice, H, 4.....Harbor
Rees, John Robert, ME, 4.....Shaniko
Reese, Virgil, Ed, 4.....Corvallis
Reeves, Wanda Mae, H, 3.....Lebanon
Reichmuth, Edward Griffith, CE, 2.....Palo Alto, Calif.
Reichmuth, Howard Stevenson, ME, 2..Palo Alto, Calif.
Reichmuth, John McKim, LD, 1....Palo Alto, Calif.
Reid, Warren Alaska, Ed, 4.....Corvallis
Reimer, Laura Margaret, LD, 1....Portland
Reinhart, Aileen Ernestine, Sc, 2....Portland
Reiss, Emma W. Johnson, Ed, 4....Mexico City, Mexico
Reitz, Emory Elbert, ME, 2.....Salem
Renninger, Reta M., H, 4.....Albany
Rettie, Clara Ellen, SS, 4.....Fossil
Reyburn, William Alexander, SS, 1..Portland
Reynolds, Harvey Blair, F, 2.....Vernon
Reynolds, Norman Gradon, BAd, 2....Corvallis
Rible, Gay Henry, A, 1.....Stockton, Calif.
Rice, Emery L., Ed, 4.....Eagle, Idaho
Rice, Neil Byron, F, 3.....Port Orford
Richards, Leslie Charles, Sc, 4.....Portland
Richards, Mildred Arline, H, 3....Evansville, Ind.
Richardson, James Fox, E, 1.....Corvallis
Richardson, William Wesley, F, 1....Portland
Richen, Clarence Wilfred, F, 3.....Portland
Rickard, Joe, A, 4.....Corvallis
Ricketts, Phyllis Ruth, Ed, 1.....Portland
Ridder, Gilbert Henry, A, 4.....Sherwood
Riechers, Lewis, A, 3.....Portland
Rieke, Forrest E., Sc, 2.....Salem
Rinehart, Robert Earl, LD, 1.....Hoevet
Ripley, Dorothy Merle, H, 4.....Portland
Ritner, Cleo, P, 1.....Salem
Roark, Jane Lee, H, 1.....Portland
Robbins, Clarence William, A, 2.....Portland
Roberts, Ruth Ann, SS, 2.....Redmond
Roberts, Vera F., SS, 1.....Corvallis
Roberts, William Ross, ME, 3.....Portland
Robertson, George H., SS, 3.....Portland
Robertson, Joan Margaret, Ed, 2....Portland
Robertson, Lawrence DeWitt, P, 4.....Freewater
Robertson, Lela Ruth, P, 4.....Freewater
Robertson, Miriam Kathleen, H, 2..Corvallis
Robertson, William David, CE, 2....Portland
Robins, Thomas Matthews, ME, 3.....San Francisco, Calif.
Robinson, Chester Elbert, BAd, 2.....La Grande
Robinson, Clyde Thomas, EE, 3.....Portland
Robinson, Donald Franklin, A, 2....Corvallis
Robinson, Eugene L., BAd, 1.....Corvallis
Robinson, Mary Frances, FA, 1.....Corvallis
Robinson, Thomas Harvey, EE, 4.....Corvallis
Rockhold, M. Leone, H, 4....Glendale, Calif.
Roddy, Blanche, SS, 1.....Salem
Rogers, Barbara Dell, H, 1.....Dayton
Rogers, Howard Foskett, F, 1.....Elgin, Ill.
Rohrbough, Max Hawley, Ed, 2.....Albany
Rohrman, Charles Albert, CE, 4....Pendleton
Rohrman, Ewald, Sc, 4.....Pendleton
Rolfsness, Stanley Cornelius, CE, 2..Portland
Romiti, Aldo Sante, Ed, 2.....St. Helens
Ronald, Ray Morris, ME, 3.....Portland
Roner, Adeline Marie, H, 2.....Albany
Roner, Fred Arnold, IA, 4.....Albany
Root, Howard Sidney, E, 1....Weiser, Idaho
Rose, Lois Adeline, LD, 1.....Parkdale
Rose, Robert Leon, P, 1.....Parkdale
Rosenberg, Albert Allison, E, 1.....Portland
Rosenberg, Donald Wayne, SS, 2..Tillamook
Rosenberg, Orin W., SS, 2.....Tillamook
Ross, Jean Clark, H, 2.....Portland
Ross, John A., Sc, 4.....Salem
Rothenberger, Max, P, 1.....Portland
Rowe, Dorothy Helen, H, 4.....Stayton
Rudat, Julia Marguerite, H, 1....Brownsmead
Rudd, Norman N., CE, 4.....Corvallis
Rumbaugh, Candace Alvira, H, 4....Parkdale
Runkle, Aleen, Ed, 4.....Corvallis
Runyon, Robert Vincent, E, 1.....Portland
Ruppe, Donald Eldon, EE, 2.....Portland
Rushing, Lola Ethel, LD, 1....Oakland, Calif.
Rushing, Robert Harbin, F, 2.....Oakland, Calif.
Russell, Elizabeth May, H, 1.....Corvallis
Russell, Keith Palmer, P, 2.....Portland
Russell, Wynne Wakefield, Ed, 1....Portland
Rutherford, Harry Wellington, E, 2..Maupin
Ruzek, Charles V., E, 1.....Corvallis
Ruzek, Jerry F., SS, 1.....Corvallis
Rycraft, Carroll Squire, A, 2.....Corvallis
Saager, John D., P, 4.....Freewater
Saling, Fred William, Ed, 4.....Corvallis
Samsel, Scott P., EE, 3.....Hillsboro
Samson, Georgena Pettengell, Ed, 3....Corvallis
Sandberg, Clifford, ME, 2.....Corvallis
Sanders, Mark Edward, P, 2.....Tillamook
Sanderson, Stanley, H, 1.....Freewater
Sandoz, Mabel Dorothy, H, 3.....Trail
Sandoz, Marcel Frank, A, 3.....Trail
Sandoz, Paul Ernest, Jr., CE, 4.....Trail
Sandwick, Hazen Albert, A, 4.....Corvallis
Sandwick, Raymond G., EE, 4.....Corvallis
Sansom, Sue Catherine, H, 1.....Portland
Santee, Harold Trevor, Ed, 2.....Monmouth
Sasser, Lester, EE, 3.....Fossil
Satchwell, Jeanne Lynette, SS, 1.....Shedd
Saubert, Jack, F, 3.....Florence
Saueressig, Cleo, SS, 2.....Scotts Mills
Sawyer, Arlene Wright, H, 1.....Portland
Sawyer, J. Stewart, E, 1.....Salem
Sayrs, Lamar H., E, 2.....Moro
Schaad, Harold Stanley, A, 1.....Newberg
Schaefer, Charles Allan, SS, 2.....Portland
Schanno, Delaney P., LD, 2.....The Dalles
Scheel, Louise Roberta, H, 2.....Corvallis
Scheel, Margaret Maxine, SS, 2.....Corvallis
Schell, Roger Edmund, EE, 3.....Corvallis
Schlesser, Anne Maude, H, 1.....Portland
Schmidt, Robert Waldo, A, 2.....Albany
Schmidt, Waldemar A., CE, 4.....Portland
Schoeler, Gertrude Rose, Ed, 3.....Corvallis
Schoeler, Margaret, LD, 1.....Corvallis
Schoenborn, E. Maureen, Ed, 1..Oregon City

Schoenfeld, Arthur Raymond, P, 1...Corvallis
Scholl, Dorothy Vivian, H, 2.....Hubbard
Schrader, Helen Brayton, H, 3.....Oakland, Calif.
Schuele, Winifred Josephine, H, 4....Portland
Schulte, Virginia Lee, H, 2.....Monterey, Calif.
Schultz, Maynard Conrad, LD, 2....Portland
Schwammel, Adolph John, Ed, 2....Corvallis
Schwartz, Frank Edward, Ed, 4....Corvallis
Schwarz, Raymond Harold, ME, 4....Myrtle Point
Scott, Bert Rorick, EE, 2.....Avaton, Calif.
Scott, Dorris Mary, H, 4.....Corvallis
Scott, Erma Fae, Mrs., H, Sp.....Klamath Falls
Scott, Evelyn, H, 4.....Corvallis
Scott, Glen Edward, IA, 1.....Klamath Falls
Scott, Henry Webster, A, 2.....Roseburg
Scott, Mary A., Ed, 4.....Bonanza
Scott, Raymond, Ed, 1.....Corvallis
Scudder, Elise Anderson, H, 4....Monterey Park, Calif.
Scudder, John, BAd, 1.....Monterey Park, Calif.
Scudder, Robert Desborough, CE, 1....Corvallis
Seeberger, Helen Louise, H, 2.....Portland
Seeberger, Kathryn, H, 2.....Portland
Setters, Robert Meredith, BAd, 1....Portland
Sewall, Albert Russell, BAd, 1.....Alhambra, Calif.
Sexsmith, Wilfred Hinch, SS, 1....Corvallis
Seydel, Rodney A., P, 1.....Corvallis
Seymour, Irma Louise, H, 1.....Corvallis
Shaffer, J. Wilbur, E, 1.....Monroe
Shank, Clara Luella, Ed, 1.....Portland
Sharp, Beulah Elizabeth, Ed, 3....Philomath
Shattuck, Veva Jane, SS, 2.....Corvallis
Shaver, Doris, H, 2.....Portland
Shaw, Clara E., J, 2.....Portland
Shaw, Kenneth William, SS, 1.....Portland
Sheldon, Florence Louise, Sc, 3.....Portland
Shellabarger, John Nicholas, A, 4....Portland
Shellenberger, Floyd Harold, LD, 2....Aumsville
Shellenberger, Paul Lewis, EE, 2...Beaverton
Sheller, Alvin M., IA, 1.....Portland
Sheller, Lee Roland, IA, 2.....Portland
Shelley, Laurence, LD, 2.....Corvallis
Shepard, David Stanley, LD, 1.....Salem
Shepard, Jimmie, LD, 1.....Salem
Shepherd, Burchard Post, ME, 3....Portland
Shepherd, Dorothe Jeanne, H, 4.....Salem
Sherman, Eleanor, H, 1.....Klamath Falls
Sherman, Leslie, Sc, 4.....Portland
Sherwood, Cecil Hugh, Ed, 2.....La Grande
Sherwood, Henry, LD, 1.....Portland
Sherwood, Hugh Miller, Ed, 4.....Corvallis
Sherwood, Marguerite Florence, H, 4....Corvallis
Shirley, Norman, BAd, 2.....The Dalles
Shirley, Wandah Maxine, H, 1.....Corvallis
Shoesmith, Lloyd, A, 4.....Salem
Short, William George, E, 4.....Freewater
Shreve, G. Elmer, IA, 2.....Albany
Shull, Florence Elizabeth, Ed, 2.....Portland
Shultis, Rodney N., Ed, 2.....Corvallis
Sibbald, Jean Elizabeth, LD, 2...Kelso, Wash.
Sibley, Lucille Marie, SS, 2.....Portland
Sidler, Dorothy Ann, H, 4.....Portland
Siegel, Bennie, F, 1.....Los Angeles, Calif.
Silcher, Bruce Edward, Ed, 4.....Portland
Simbeni, Peter, EE, 2.....Portland
Simkins, Glenn Wood, CE, 3.....Medford
Simkins, Leneve Marie, SS, 1.....Medford
Simmons, Margaret Dorothy, SS, 1....Oregon City
Simmons, Rachel C., LD, 1.....Fossil
Simpson, Arthur Walter, CE, 1.....Grants Pass
Simpson, Margaret Anne, H, 3....Gem, Idaho
Skeans, Harold Raymond, A, 1.....Rainier
Skeen, Priscilla Phillis, Ed, 4.....Salt Lake City, Utah
Slade, Jeannette Percival, SS, 1....Vancouver B. C.
Slade, Margaret Isabel, H, 2.....Vancouver, B. C.
Slayton, Forbes B., P, 2.....Corvallis
Slayton, Hale Todd, F, 3.....Corvallis
Sloat, James Walter, CE, 3.....Portland
Small, Hiram Fillmore, Ed, 2.....Corvallis
Small, Robert, LD, 2.....Corvallis
Smith, Carlisle, Sc, 2.....Hood River
Smith, Clarence Z., Ed, 2.....Corvallis
Smith, Donald, SS, 3.....Portland
Smith, Howard George, A, 4.....Newberg
Smith, Ira V., E, 1.....Sherwood
Smith, James Russell, BAd, 1.....Corvallis
Smith, Jessie May, SS, 4.....Roseburg
Smith, Joe Claire, LD, 1.....Pendleton
Smith, Katherine J., H, 3.....Dallas
Smith, Leo Ray, ME, 3.....Rockaway
Smith, Letha Louise, P, 3.....Corvallis
Smith, Lewis Carlisle, ME, 2.....Newport
Smith, Nelson, Ed, 2.....Silver Lake
Smith, Rodney Errol D., Ed, 2.....Corvallis
Smith, Ruth Genevieve, H, 4.....Portland
Smith, Victor Herbert, Ed, 3.....Portland
Smith, Virginia Louise, H, 1.....Portland
Smith, Viva Gertrude, H, 4.....Albany
Smith, William D., E, 1.....Portland
Smith, William Franklin, E, 1.....Jennings Lodge
Smouse, Kenneth James, E, 1.....Ione
Snapp, Parker Wert, EE, 3.....Corvallis
Snapp, Siegmund Alvin, LD, 1.....Corvallis
Sneed, Ardath Eileen, H, 1.....Eastside
Snider, James Sterling, E, 1.....Lakeview
Snyder, Edith Louise, LD, 2.....Oswego
Snyder, Robert, EE, 4....Los Angeles, Calif.
Somppi, Edith Mae, LD, 2.....Pendleton
Somppi, Helen Areta, LD, 1.....Pendleton
Soring, Margaret Louise, Sc, 4....Woodburn
Soule, Lois, P, 1.....Klamath Falls
Sparr, Lorraine, Ed, 4.....Ashland
Speer, Merwin Homer, BAd, 1.....Corvallis
Spike, Mary Marcella, P, 2.....Echo
Spongberg, Jay Allan, LD, 1.....Portland
Spooner, Harold LeRoy, FA, 3.....Eugene
Sprague, George Alden, LD, 2.....Klamath Falls
Spring, Helen Margaret, Ed, 4.....Corvallis
Spulnik, Joseph Bernard, Sc, 4.....Portland
Squire, Arden Alfred, Ed, 2.....Gresham
Stacey, Richard G., E, 2.....Vale
Stafford, Marjorie Harriet, SS, 2.....Seaside
Staggs, Florence Golden, Ed, 1.....Keating
Stahl, Esther, Ed, 4.....Corvallis
Stain, Bernard E., SS, 2.....Rainier
Staley, David A., Ed, 2.....Portland
Stallard, Mary E., J, 1.....Drewsey
Stanard, Wayne Boyce, LD, 2....Brownsville
Stangel, Alice Frances, H, 4.....Wilsonville
Starr, Mary Caryl, H, 2.....Junction City
Starr, Virgil Evans, Sc, 4.....Powell Butte
Statelar, Betty Jane, H, 3.....Corvallis
Staton, Elizabeth, H, 3.....Stayton
Staton, Maurice Glen, EE, 3.....Portland
Steel, Elizabeth Evelyn, Ed, 3.....Portland
Steel, George Franklin, Sc, 4.....Portland
Steel, Gertrude Florence, LD, 2.....Portland

Steele, Hubert Jenkins, LD, 2.....Lakeview
Steen, Cecil Martin, ME, 2.....Eugene
Stein, Romar Ernest, ME, 4.....Sherwood
Stein, Roy Wilfred, A, 2.....La Grande
Stephens, Clifford Austin, SS, 2.....Dayton
Stephens, Janet, SS, 1.....Moro
Sterling, Robert H., A, 3.....Corvallis
Sterling, Ruth Elizabeth, Ed, 3.....Corvallis
Stevens, Dorothy Jane, H, 2.....Oregon City
Stevens, Samuel Lovejoy, LD, 1.....Oregon City
Stevenson, Glen Osborne, FA, 3.....Dallas
Stevenson, Lloyd Elmer, Sc, 3.....Corvallis
Stevenson, Mary Elizabeth, Ed, 4....Glendale
Stewart, Grace Tipley, Mrs., SS, 2.....Corvallis
Stewart, Mabeth, SS, 1.....Corvallis
Stewart, Opal Eleanor, Ed, 2.....Corvallis
Stewart, Ray Lawrence, F, 2.....Corvallis
Stickler, Raymond Charles, SS, 1.....Enterprise
Stidd, Leland Colvin, SS, 1.....Portland
Stingley, Hazel Isabell, H, 1.....Fort Rock
Stinson, Ben, ME, 2.....Medford
Stone, Florence Mae, Ed, 1.....Corvallis
Stone, Geraldine Mae, H, 3.....Portland
Stone, Theresa Christine, P, 2.....Corvallis
Stoop, James Howard, F, 2.....La Grande
Storli, Lydia-Anne, H, 2.....Portland
Stout, Roy Edgar, A, 2.....Corvallis
Stover, Warren Hamilton, ME, 2....Corvallis
Strack, Edwin Louis, A, 1.....Grants Pass
Strahorn, Dorothy Elizabeth, H, 2..Portland
Strange, Mildred Holmes, FA, Sp....Corvallis
Stransky, Malcolm, CE, 1.....Milwaukie
Stratton, Betty Jane, H, 1.....Portland
Stratton, Joseph DeForest, LD, 1.....Lakeview
Strauss, Ruth Helene, SS, 1.....Portland
Strawn, J. C., IA, 1.....Roseburg
Strawn, Mary Virginia, H, 2.....Corvallis
Street, Donald John, Ed, 4.....Sutherlin
Streichert, Gretchen Cecelia, H, 1....Astoria
Stromberg, John Carl, E, 1.....Portland
Strong, Betty, H, 1.....Oakland
Strubb, Sam Loren, E, 1.....Buxton
Stuart, Shirley Virginia, Ed, 2.....Corvallis
Sturm, Bruce Edwin, Ed, 2.....Portland
Summers, Glynn Eugene, E, 1....Hood River
Summers, Herbert Emmett, Ed, 4....Corvallis
Sundby, Wilfred Charles, EE, 2.....Portland
Swanson, Thomas Albert, Ed, 1.....Dee
Swarner, Gladys May, Ed, 3.....Hermiston
Swenson, Herbert Alfred, LD, 2....Portland
Tatro, Faye Ethel, SS, 2.....Lakeview
Taylor, Joseph William, ME, 3.....Portland
Taylor, Merle F., LD, 2.....Corvallis
Taylor, Robena Vancetta, Ed, 2.....Corvallis
Taylor, Thomas Elwood, ME, 4.....Portland
Taylor, Thomas J., LD, 1....Olympia, Wash.
Taylor, Walter Kearns, P, 1.....Corvallis
Taylor, William Richard, E, 1.....Portland
Tees, Carolyn Clark, H, 1.....Portland
Tees, Marianna, H, 2.....Portland
Tegnell, Russell Miller, CE, 2.....Portland
Telford, Donald H., A, 2.....Corvallis
Telford, Thomas Douglas, EE, 2.....Boring
Templeton, Bill, P, 2.....Albany
Tennis, Ormiston L., Ed, 1.....Corvallis
Tetherow, Franz Menhoff, E, 1.....Portland
Tetlow, Anne Marie, SS, 1.....Warrenton
Thayer, Mary Ellen, Ed, 2.....Toledo
Thielemann, Rudolf Harold, EE, 4..Portland
Thomas, Elwood Edmund, LD, 1....Corvallis
Thomas, Gerald John, A, 2.....Corvallis
Thomas, Harold Albert, EE, 2.....Newport
Thomas, Maurice, E, 1.....Corvallis
Thomas, Nina Elizabeth, H, 1.....Corvallis
Thomas, Robert Boyden, LD, 1....Covrallis
Thomas, Ruth Maryan, H, 1.....Clatskanie
Thomas, Starleigh Douglas, IA, 2....Corvallis
Thomas, Vernon, E, 1.....Portland
Thomas, Wanda Margaret, H, 1.....Corvallis
Thometz, Anthony Lauer, F, 2....Chicago, Ill.
Thompson, Eva Mae, H, 4.....Corvallis
Thompson, Harold, P, 2.....Pendleton
Thompson, James William, F, 2.....Bend
Thompson, Konow Walter, EE, 2..Hillsboro
Thompson, Ralph M., A, 4.....Eugene
Thompson, Richard Rudolph, P, 2....Corvallis
Thompson, Ruth Marie, H, 4.....Corvallis
Thompson, Stanley Arthur, BAd, 2....Bendgett
Thompson, Vaunee Frances, SS, 3..Corvallis
Thouvenel, Louise, Ed, 1.....Condon
Thurston, Jane, SS, 1.....Portland
Tice, Donald Edwin, CE, 2.....Pendleton
Tidball, Robert Lewis, CE, 4.....Portland
Tillotson, John Henry, CE, 1....Alturas, Calif.
Tinsley, William Keith, F, 2.....Portland
Todd, George Ferguson, CE, 3.....Portland
Toedtemeier, Harold William, EE, 2....Monmouth
Toevs, Ernest H., LD, 1.....Portland
Tomlinson, Donald Edward, SS, 3....Albany
Tompkins, Jacob, A, 1.....Dayton
Tomsheck, William H., A, 3.....Portland
Torgerson, Edward F., P, 1.....Corvallis
Tower, Forrest H., EE, 2.....Portland
Towle, George Edward, ME, 3.....Shaw
Townes, Theodore M., CE, 3.....Portland
Townsend, Graham Edward, EE, 4.....Portland
Townsend, Verna Evelyn, H, 3.....Corvallis
Tracy, Edna P., H, 4.....Claremont, Calif.
Traver, Harmon Richard, EE, 3.....Albany
Travis, Wilbur, A, 3.....Roseburg
Treloar, Albert Knowlton, LD, 1.....Hollywood, Calif.
Trenholm, Helen Kathleen, Ed, 1.....Westport
Triplett, Cecil L., CE, 2.....Corvallis
Triplett, Mabel, H, 1.....Corvallis
Troedson, J. Francis, Ed, 2.....Ione
Troeh, Neal Arnold, LD, 2.....Portland
Trommershausen, William Ernest, EE, 3....Newberg
Truax, Merritt Wallace, Ed, 4.....Albany
Tucker, Ethel Margie, Ed, 2.....Prineville
Turner, Harold Delbert, F, 3.....Corvallis
Turner, Martha Margaret, Ed, 2.....Jefferson
Turner, Mina Rosella, SS, 1.....Jefferson
Turner, Pauline Violet, LD, 1.....Corvallis
Turner, Ruth Kathryn, H, 1.....Heppner
Tuttle, Hubbard Alonzo, LD, 1....Hoquiam, Wash.
Tuttle, Loren William, Ed, 4....Grants Pass
Twomey, John Patrick, P, 1.....Bend
Tyler, Berta May, H, 3.....San Bernardino, Calif.
Tyler, Thurlow Walter, BAd, 2.....Portland
Ufford, Marvin Rowland, EE, 3.....Albany
Ulmer, Arthur, LD, 1.....Gearhart
Umphrey, Dorothy Pearl, H, 1.....Cottage Grove
Underwood, Leon Franklin, A, 2....Corvallis
Ungemach, George Raymond, BAd, 1....Portland
Upham, Andrew Claude, F, 2.....Hermiston
Valberg, Kenneth Otto, F, 2.....Boring
Valley, Francis Wayne, SS, 1.....Wheeler
Van Arsdale, Mary Lois, H, 2.....Redmond
Van Blaricom, Lester Oscar, CE, 2....Hood River

Van Blaricom, Lloyd, LD, 2.....Hood River
Van Dyke, Mary, LD, 1.....Medford
Van Gilse, Albert, Ed, 3.....Nyssa
Van Pelt, Franklin Henry, E, 1.....Salem
Van Reet, Nora, P, 1.....Oregon City
Van Waning, Isabel Christine, Ed, 3....Corvallis
Vaughan, Pierre William, P, 1.....Baker
Veale, Robert William, F, 2...Alameda, Calif.
Veatch, Sibyl A., Ed, 4.....Cottage Grove
Vennewitz, Morris John, CE, 4.....Portland
Vernon, Alice Elaine, Ed, 3.....Lakeview
Verry, Dana Hedrick, LD, 2.....Portland
Vice, Miriam Ethel, H, 1.....Powell Butte
Vincent, Helen, H, 4.....Corvallis
Visetti, Dina, H, 2.....Portland
Vogt, Edward H., F, 1.....Eugene
Vold, Winifred Mary, H, 2.....Portland
Volden, Lillian Louise, H, 1.....Hood River
Volkmar, Beneva, SS, 4.....Myrtle Point
Vollans, Bert Howard, E, 1.....Seaside
Voorhees, Edna Elizabeth, H, 4....San Marino, Calif.
Voorhees, Madeleine Louise, SS, 2.....San Marino, Calif.
Vose, Lowell A., Sc, 3.....Oswego
Wagner, Caroline P., H, 1.....Portland
Wagner, Charles Milton, IA, Sp.....Corvallis
Wagner, Dick F., ME, 2.....Portland
Wagner, Don, A, 2.....Corvallis
Wagner, Kermit R., P, 2.....Portland
Wagner, Lila Rose, LD, 2.....Portland
Wagner, Raymond Lee, Ed, 1.....Corvallis
Wagner, Robert R., CE, 2.....Portland
Walker, Denton O., SS, 2.....Milton
Walker, Edythe Mary, H, 4.....Portland
Walker, Fletcher, Sc, 4.....Salem
Walker, Helen Martha, SS, 1.....Bend
Walker, Laurel Evelyn, Ed, 3.....Portland
Wallace, Couch Marton, IA, 1.....Portland
Walling, Lorine Mary, H, 1.....Salem
Walsh, W. James Jennings, EE, 2.....Fort Lewis, Wash.
Walt, Richard William, P, 1....Los Angeles, Calif.
Walter, Dorothy E., Ed, 1.....Corvallis
Walter, Edna Noreen, SS, 1.....Ontario
Walters, Elizabeth Christina, H, 1...Parkdale
Walther, Leonard Adolph, E, 1.....Portland
Ward, Marguerite Byra, H, 3.....Albany
Ward, Thomas Henry, Ed, 2.....The Dalles
Ward, Vincent Dunlap, F, 2.....Ashland
Ware, Margaret Christian, H, 3.....Corvallis
Warg, Elizabeth Louise, Ed, 2.....Corvallis
Warg, Samuel Allen, F, 4.....Prineville
Warner, Margaret Nye, LD, 1.....Medford
Warren, Betty, H, 2.....Corvallis
Warren, Vernon J., CE, 2.....Corvallis
Warren, William G., CE, 1.....Pendleton
Warrington, William Rich, LD, 2....Corvallis
Watts, John, Ed, 1.....Burlingame, Calif.
Weaver, Kenneth Earl, SS, 3.....Corvallis
Webb, Delmar Orville, Sc, 3.....The Dalles
Weber, Clarence R., Ed, 2.....Corvallis
Weber, John Martin, Ed, 2.....Corvallis
Weber, Naomi Edith, LD, 2.....Portland
Weber, Phil William, Ed, 2.....Corvallis
Weber, Ray Francis, Ed, 1.....Corvallis
Weber, Vera, H, 4.....Portland
Weber, Vincent Paul, SS, 1.....Corvallis
Wedin, Vernon Elsworth, Ed, 2.....Gresham
Weikel, Ivan W., A, 4.....Roseburg
Weiks, Arthur J., A, 2.....Olympia, Wash.
Weiks, William Lester, A, 2...Olympia, Wash.
Weir, Robert Lee, A, 1.....Lakeview
Weisgerber, John Edwin, F, 4.....Portland
Welbes, Alice Virginia, H, 1.....Portland
Welbes, John Howard, A, 2.....Portland
Welch, Frances Helen, LD, 1.....Corvallis
Welch, Gordon Vose, A, 1.....Portland
Welch, Marguerite Eunice, H, 4....Corvallis
Welcome, Wallace, P, 2.....Burns
Welder, William Alden, F, 2.....Westward, Calif.
Wellington, Richard Osmotherly, Ed, 1.....Portland
Welsh, Charles Edward, CE, 2.....Portland
Welton, Charles Albert, SS, 2.....Hoevet
Wenderoth, Henry John, CE, 3...North Bend
West, Helen Lamira, Ed, 2.....Seaside
West, Jane, Ed, 2.....Seaside
West, William Arthur, A, 3....Camas, Wash.
Wheeler, Frank Carol, LD, 2.....Corvallis
Wheeler, Mary June, H, 1....Cottage Grove
Wheeler, Shirley Elaine, LD, 1.....Portland
Whipple, Margaret Ruth, A, 2....Vancouver, Wash.
Whitcomb, Morrow William, CE, 2...Portland
Whitcomb, Richard Langdon, ME, 2....Portland
White, Clarence H., SS, 1.....Portland
White, Dorothy Katheryn, H, 1....Mt. Angel
White, Elizabeth Margaret, H, 1.....Portland
White, Helen Kay, J, 1.....Salem
White, Hudson Dodd, A, 2.....Corvallis
White, Maxine, H, 1.....Portland
White, Velna Ocea, LD, 1.....McMinnville
White, Willard Steen, SS, 2.....Portland
Whitehouse, Earl A., P, 4.....Lakeview
Whitehouse, Hayden Bryant, F, 2....Astoria
Whitelaw, Mary Neill, Ed, 3.....Corvallis
Whiteside, Harold S., BAd, 2.....Corvallis
Whiteside, Jack Clarence, A, 1.....Corvallis
Whiteside, Louise Nona, H, 1.....Corvallis
Whitfield, Norman Charles, F, 4....Corvallis
Whitlock, Velma Louise, Ed, 4.....Corvallis
Whitman, George Edward, P, 2.....Klamath Falls
Whitmore, Charles Clyde, SS, 1.....Ashland
Wickett, Merle George, Ed, 1.....Aberdeen, Wash.
Widmark, Alfred E., P, 2.....Corvallis
Wiebe, Eleanor Frances, H, 2.....Aberdeen, Wash.
Wiese, Doris Mae, Ed, 3.....Corvallis
Wiese, Frederick Cyrus, Ed, 2.....Corvallis
Wiese, Ralph Armin, CE, 2.....Portland
Wiggett, H. Frederick, BAd, 2....Red Bluff, Calif.
Wight, James Beattie, A, 2.....Kamuela, Hawaii
Wilbur, Marvin Cummings, SS, 2.....Salem
Wilder, Anita LeMae, H, 1....Blaine, Wash.
Wilkes, Evelyn Ruth, J, 1.....Klamath Falls
Wilkins, John, CE, 2.....Portland
Willett, Maxine Evelyn, Ed, 2.....Shedd
Williams, Richard, SS, 1.....Portland
Williamson, Russell Willard, IA, 3....Albany
Willock, Eva Elizabeth, LD, 2.....Portland
Wilson, Anne Katharine, SS, 3.....Linnton
Wilson, George Theodore, LD, Sp...Corvallis
Wilson, Glen W., P, 2.....Woodburn
Wilson, Mary Frances, H, 2.....Albany
Wilson, Roscoe Clarence, LD, 1.....Portland
Winkler, Frank, E, 2.....Portland
Wirch, Arthur W., F, 3.....Portland
Wise, Harold Bell, P, 1.....El Centro, Calif.
Witcraft, Harold Orlin, FA, 1.....Blachley
Witherell, Fred W., BAd, 2.....Pendleton
Withers, Harry Allen, Jr., BAd, 2.....Burns
Withers, Louis Alton, A, 2.....Paisley

Witzig, Frances, LD, 1 ..... Corvallis
Woerner, Jack Daniel, Ed, 3 ..... Elk Grove, Calif.
Wold, Phyllis Ana, SS, 2 ..... North Bend
Wolfe, Alfred S., Sc, 4 ..... Portland
Wolff, Helene, LD, 1 ..... Portland
Wood, Harold William, Sc, 4 ..... Nyssa
Wood, John Milton, LD, 2 ..... Corvallis
Wood, Kenneth Scott, Ed, 3 ..... Corvallis
Woodard, John Charles, Ed, 2 ..... Portland
Woodard, Walter Alex, Ed, 4 ..... Portland
Woodcock, Mary Leone, SS, 2 ..... Corvallis
Woodford, William Harrison, Ed, 2 ..... Medford
Woodman, Ray Algernon, SS, 1 ..... Portland
Woodruff, Virginia, Ed, 4 ..... Corvallis
Woods, Charlotte Anne, LD, 2 ..... Seattle, Wash.
Woods, Ethan, A, 4 ..... Moro
Woods, Olive Patricia, LD, 2 ..... Corvallis
Woodward, Walter Oliver, E, 1 ..... Corvallis
Wooster, Harry Alan, LD, 2 ..... Estacada
Workman, Grace I., H, 2 ..... Corvallis
Wright, Dorothy Marie, FA, 3 ..... Pomona, Calif.
Wyman, Eloise, Ed, 2 ..... Portland
Wymore, Herbert, LD, 2 ..... Oregon City
Yates, Claribel, LD, 2 ..... Shedd
Yocum, Carol Lee, H, 1 ..... Corvallis
Yocum, Thurston Lloyd, CE, 4 ..... Corvallis
York, Albert L., EE, 2 ..... Nehalem
Young, Blanche Ellen, SS, 2 ..... Silverton
Young, Margaret Mae, Ed, 2 ..... Sherwood
Younger, Marion Campbell, H, 1 ..... Portland
Zachman, Anthony Joseph, P, 2 ..... Tillamook
Zanello, Jack Corbett, BAd, 1 ..... Portland
Zimmerman, Margaret Frances, H, 4 ..... Portland
Zinck, Henrietta Elizabeth, LD, 1 ..... Milwaukie
Zivney, Emil, A, 2 ..... Oswego
Zwick, John Wilfred, ME, 2 ..... Portland

Summer Session Students

1933

GRADUATE AND UNDERGRADUATE

Abbey, Laurence E. ..... Delano, Calif.
Abe, Paul Yozo ..... Corvallis
Alde, Walter Eugene ..... Lincoln, Ill.
Allen, Alfred T. ..... Monmouth
Allen, Eleanor B. ..... Corvallis
Andrews, Alden W. ..... Salem
Anrold, Bessie T. ..... Tillamook
Atchison, Christel L. ..... Waverly, Kans.
Atkinson, Rasser P. ..... Portland
Atwood, Dorothy M. ..... Corvallis
Bailey, Crystal E. ..... Wendel, Calif.
Baley, Anita Louise ..... Salem
Bashaw, Kathryn Lois ..... Midvale, Idaho
Battaglia, Frank E. ..... Portland
Beals, Ernest L. ..... Corvallis
Beals, Maple C. ..... Corvallis
Beck, Mary ..... Corvallis
Beck, Pauline ..... Corvallis
Beckendorf, Howard P. ..... Portland
Begg, Mary M. ..... John Day
Begg, Roderick E. ..... John Day
Bell, C. Kenaston ..... Pasadena, Calif.
Blackden, Ralph S. ..... Sacramento, Calif.
Bleeg, Hedwig ..... Portland
Blevins, Bruce B. ..... Port Townsend, Wash.
Blow, Grace H. ..... Los Angeles, Calif.
Boggess, Jack C. ..... Mabel
Bolton, Betty Jane ..... Corvallis
Bonney, Zaidee E. ..... Tacoma, Wash.
Bradley, Lora R. ..... Silver Lake
Britton, James D. ..... Marysville, Calif.
Brownson, Shirlie ..... Hermiston
Brubaker, Douglas ..... Duncan, Ariz.
Brubaker, Margaret ..... Duncan, Ariz.
Bryant, Claude H. ..... Corvallis
Buchanan, Helen I. ..... Portland
Buck, Doris A. ..... Portland
Buck, Margie K. ..... Eugene
Burnham, Clarence ..... Corvallis
Byers, Lena E. ..... Cape Horn, Wash.
Byrd, Dorothy M. ..... Corvallis
Cantine, Sigrid R. ..... Corvallis
Carr, James A. ..... Portland
Chandler, E. Phyllis ..... Portland
Chandler, Marjorie A. ..... Salem
Chapman, Fred M. ..... Roseburg
Chapman, Marjorie B. ..... Corvallis
Clinton, Harry F. ..... Corvallis
Conley, Ruth ..... Chico, Calif.
Conner, Ava G. ..... Corvallis
Cook, Louise W. ..... Salem
Cooke, Faith ..... Corvallis
Cooney, Wilbur T. ..... Corvallis
Corthell, Eleanor ..... Marshfield
Crump, Viola R. ..... Lakeview
Cuddy, Katherine L. ..... Boise, Idaho
Dalton, Bertha ..... Corvallis
Dalton, Charles D. ..... Corvallis
Danforth, Eleanor W. ..... Corvallis
Davis, Edwin B. ..... Corvallis
Davis, Evelyn ..... Independence
Davis, Marvin Raymond ..... Anaconda, Mont.
Dawson, Harold ..... Corvallis
Dawson, Muriel H. ..... Corvallis
de Lancey, Raymond ..... Corvallis
Doll, Charles ..... Klamath Falls
Dotson, Ruth ..... Flagstaff, Ariz.
Doughton, Preston F. ..... Dallas
Dumbeck, Helen E. ..... Albany
Duncan, Lewis E. ..... Mossyrock, Wash.
Dunning, Marilla C. ..... Stanfield
Dunow, Ruth E. ..... Bowman, Calif.
Edwards, Louis ..... Chico, Calif.
Egelston, Clay H. ..... Salem
Elliott, Irving C. ..... Alturas, Calif.
Fait, Edwin P. ..... Everett, Wash.
Farwell, Hazel ..... Shedd
Flegel, Dorothy ..... Portland
Flood, Anna H. ..... Westport
Forristel, Irene D. ..... Salem
Fortmiller, Julia ..... Albany
Fouch, Glenn O. ..... San Bernardino, Calif.
Frame, Dana S. ..... Talent
Fulton, Cora F. ..... Patterson, Calif.
Garner, Denver S. ..... Marshfield, Wis.
George, Emily M. ..... Corvallis
Goodwin, Charles A. ..... Corvallis
Goodwin, Fred M. ..... Phoenix, Ariz.
Gordon, Eva V. ..... Philomath
Gordon, James ..... Philomath

Gowan, Enid L. ..... Corvallis
Graham, Tom R., Jr., ... Corvallis
Gregory, Eunice J. ..... Albany
Guderian, Clarence A. ..... Salem
Haberly, Anne H. ..... Decorah, Iowa
Hairgrove, Helen Jane ..... Glendale, Calif.
Hall, Mabel Dean ..... Watsonville, Calif.
Hamann, Jacob ..... Atascadero, Calif.
Hampton, Claud ..... Corvallis
Hansen, Ruth W. ..... Corvallis
Harn, Wayne ..... Corvallis
Hart, Lucy E. ..... Kerby
Hertz, DeMaris ..... Corvallis
Hoffmann, Hans ..... Switzerland
Holley, Betty M. ..... Corvallis
Hopkins, Albert B. ..... Nyssa
Hopkins, Phyllis M. ..... Nyssa
Horn, Thelma E. ..... Pilot Rock
Horner, Phil A. ..... Covina, Calif.
Horner, Vera D. ..... Corvallis
Hutchason, Dorothy P. ..... Salem
Ingalls, Alice L. ..... Corvallis
Jackson, Esther P. ..... Corvallis
Jackson, Virgil D. ..... Corvallis
Jarmon, Opal F. ..... Echo
Jensen, Clarence D. ..... Arbuckle, Calif.
Johnson, Ellen M. ..... Corvallis
Johnson, Wynona ..... Portland
Jones, Blanche E. ..... Bisby, Mont.
Jones, Olive M. ..... Bremerton, Wash.
Jones, Peggy ..... Portland
Jones, Ralph H. ..... Bisby, Mont.
Jones, Rebecca ..... Corvallis
Judd, Dorothy A. ..... Salem
Kachelhoffer, Helen M. ..... Ackley, Iowa
Kaljian, Zita T. ..... Los Banos, Calif.
Kampfer, Arnold F. ..... Albany
Kauffman, Clara V. ..... Corvallis
Kaufman, Walter H. ..... Monroe
Kauppi, Henry W. ..... Vernonia
Keeler, Marie E. ..... Corvallis
Keep, Dorothy Rose ..... Corvallis
Keller, Robert J. ..... Oakland, Calif.
Kerwin, Hugh ..... Corvallis
Kirkpatrick, Herbert L. ..... Corvallis
Kleffman, Ervin H. ..... Corvallis
Kletsch, Albert G. ..... Portland
Kraus, Elizabeth L. ..... Aurora
Kruse, Vernon J. ..... Eugene
Kurtz, Alga ..... Portland
Kurtz, William H. ..... Portland
Lanius, Elizabeth M. ..... Prineville
Larson, Andrew W. ..... Corvallis
Larson, Clifford S. ..... Merton, Wis.
Larson, Earl L. ..... Corvallis
Lauder, Lorne R. ..... Stevensville, Mont.
Levinger, Henry L. ..... Baker
Lewis, Maxwell D. ..... Tigard
Light, James F. ..... Tangent
Loggan, Helene S. ..... Burns
Long, Esther T. ..... Fullerton, Calif.
Long, Florence ..... Cloverdale
Losse, Bette Louise ..... Santa Clara, Calif.
Love, Viola F. ..... Loomis, Calif.
McAnley, Julia V. ..... Portland
McClain, Mary O. ..... Grants Pass
McClew, Ann Elizabeth ..... Eugene
McCornack, Evelyn W. ..... Florence
McDuffee, Nellie W. ..... Bend
McGauhey, Dorothy ..... Corvallis
McGowan, Vern B. ..... Independence
McLaughlin, Margaret ..... Carrigallen, Ireland
McMillan, Alfred ..... Corvallis
McReynolds, Lou Vera ..... Fairfield, Neb.
Mackey, Ulrich ..... Phoenix, Ariz.
Marr, Uel Barton ..... Dundee
Marsh, Alice Butler ..... Corvallis
Marsh, Ida B. ..... Boise, Idaho
Martin, Ethel Ann ..... Salem
Martin, Evelyn ..... Portland
Masson, Donald L. ..... Monroe
Matthews, Hortense M. ..... Stanford, Mont.
Mayback, Leland F. ..... Portland
Mellin, Carolyn F. ..... Corvallis
Merryman, Florence M. ..... Silverton
Miller, Bessie May ..... Los Angeles, Calif.
Moe, Jim O. ..... Corvallis
Moore, P. H. ..... Wasco, Calif.
Moser, Alice ..... Corvallis
Moulton, Edith A. ..... Kirkland, Wash.
Mountjoy, Opal M. ..... Chemawa
Muller, Hazel ..... Albany
Musgrove, Rose E. ..... Portland
Nelson, Albert W. ..... Monmouth
Newberg, Annie M. ..... Tillamook
Newton, Eva Marie ..... Corvallis
Ney, Helen Elaine ..... Salem
Nichols, John R. ..... Portland
OBrien, Frank S. ..... Oregon City
Owens, Lillian W. ..... Medford
Owings, Walter L. ..... Durham, Calif.
Palmer, Arthur E. ..... Portland
Patch, Dennis W. ..... Weiser, Idaho
Pearson, Anna A. ..... Albany
Perkins, Lloyd K. ..... Boise, Idaho
Peterson, M. Maxine ..... Corvallis
Peterson, Sharoo ..... Corvallis
Peterson, Sigurd H. ..... Corvallis
Pimm, Frank D. ..... Shedd
Pitcher, Alice C. ..... Orange, Calif.
Pitcher, Laurence ..... Orange, Calif.
Pittman, Merry E. ..... Corvallis
Porter, Ruth E. ..... Albany
Powell, Lee A. ..... Philomath
Price, Cora N. ..... Corvallis
Purvine, Maud C. ..... Corvallis
Purvis, Alice E. ..... Vale
Ramsey, Robert W. ..... La Grande
Randolph, Nellie D. ..... Corvallis
Redfield, Charlotte A. ..... Corvallis
Reed, Eloise ..... Oregon City
Reekman, Evelyn ..... Harbor
Reese, Virgil ..... Corvallis
Reichart, Robert R. ..... Corvallis
Reichmuth, Edward G. ..... Palo Alto, Calif.
Reid, Warren A. ..... Corvallis
Renninger, Rita M. ..... Albany
Ricks, Estora Velma ..... Portland
Riggs, Lyle N. ..... Portland
Robertson, Joan M. ..... Portland
Robertson, Lawrence D. ..... Freewater
Robertson, Lela R. ..... Freewater
Robinson, Rex E. ..... Corvallis
Romiti, Aldo S. ..... St. Helens
Rosenberg, Orin ..... Tillamook
Rosenberg, Vera A. ..... Tillamook
Rounds, Mamie A. ..... Corvallis
Rushing, Robert H. ..... Oakland, Calif.
Russell, Victor Ernest ..... Corvallis
Schafer, Villa Florence ..... Salt Lake City, Utah
Schmitt, Roland A. ..... San Quentin, Calif.
Schoeni, Rose-Marie R. ..... Portland
Schrepel, Marie F. ..... Corvallis
Schuele, Winifred J. ..... Portland
Seely, Irene E. ..... Corvallis
Seely, Lloyd G. ..... Corvallis
Shaver, Doris ..... Portland
Sherwood, Marguerite ..... Corvallis
Shilling, Harold L. ..... Chemawa
Singleton, Lotus ..... Willows, Calif.
Skeen, Priscilla P. ..... Salt Lake City, Utah
Skene, Emerson M. ..... Roy

Smartt, Monroe T. ..... Hollywood, Calif.
Smith, Seaton, H. ..... Crete, Neb.
Smith, Thurlo W. ..... Albany
Spencer, Marian I. ..... Seattle, Wash.
Spike, Frances M. ..... Echo
Stafford, James L. ..... Portland
Stallard, Agnes ..... Drewsey
Stallard, Mary E. ..... Burns
Stangel, Alice F. ..... Wilsonville
Stearman, Anita Willardie.. Vancouver, B. C.
Stephens, Emmajean ..... Moro
Stephenson, Lee ..... Anacovtes, Wash.
Stevenson, Mary E. ..... Glendale
Stewart, Emma J. ..... Portland
Stovall, Estel L. ..... Maupin
Stuart, Shirley V. ..... Corvallis
Taylor, Alfred ..... Corvallis
Taylor, Joseph W. ..... Portland
Thacker, Richard T. ..... Corvallis
Thompson, Eva M. ..... Corvallis
Thompson, Harold M. ..... Pendleton
Thompson, Ruth M. ..... Corvallis
Thrift, William B. ..... Albany
Tillotson, Marjorie ..... Toledo
Tinkham, Catherine A. ..... Fillmore, Calif.
Toll, Harriet A. ..... Portland
Torson, James M. ..... Corvallis
Trevoy, Hubert V. ..... Calgary, Alberta
Trevvett, Nina B. ..... Chemawa
Turner, Eleanor J. ..... Ogden, Utah
Turner, Martha M. ..... Salem
Vannice, Roberta ..... Halsey
Veatch, Sibyl A. ..... Cottage Grove
Veitch, Hannah I. ..... Williston, N. Dak.
Vogel, Ann F. ..... Eugene
Volkmar, Beneva ..... Myrtle Point
Wagner, Charles M. ..... Corvallis
Wagner, Kermit R. ..... Portland
Wagner, Raymond ..... Corvallis
Walton, Lulu R. ..... Salem
Warren, Edward N. ..... Newton, Kans.
Wentzel, Stella E. ..... Newton, Kans.
Whepley, Ruth H. ..... Lemon Cove, Calif.
Whitaker, William C. ..... Marysville, Calif.
Whitehouse, Earl A. ..... Lakeview
Whitlock, Velma L. ..... Corvallis
Whitworth, Sidney E. ..... Dallas
Whalley, Edward ..... Grants Pass
Williams, Zoe ..... West Line, Mo.
Wilson, Curtis M. ..... Crete, Neb.
Winters, George ..... Corvallis
Wood, Harold W. ..... Nyssa
Wood, Kenneth Scott ..... Eagle Creek
Wood, R. Vincent ..... Portland
Young, Etha O. ..... Lakeview
Zimmerman, Margaret F. ..... Portland
Zobel, Ray L. ..... Prospect

Summary of Enrollment and Degrees Granted 1933-34

ENROLLMENT BY CURRICULUM AND CLASS, REGULAR SESSION 1933-34

Curriculum	Freshman year	Sophomore year	Junior year	Senior year	Graduate	Special	Subtotal	Total
Liberal Arts and Sciences								
Lower Division								
Arts and Letters	14	10	.....	.....	.....	4		
Science	75	59	.....	.....	.....	.....		
Social Science	38	27	.....	.....	.....	2		
Total, Lower Division	127	96	.....	.....	.....	6	229	
School of Science								
General Science	.....	.....	4	1	.....	.....		
Bacteriology	.....	.....	3	1	1	.....		
Botany	.....	.....	.....	1	2	.....		
Chemistry	.....	.....	5	5	22	.....		
Entomology	.....	.....	1	2	5	.....		
Geology	.....	.....	.....	5	4	.....		
Mathematics	.....	.....	1	5	6	.....		
Physics	.....	.....	2	1	7	.....		
Zoology	.....	.....	4	4	2	.....		
Total, School of Science	75	59	20	25	49	.....	228	
Total, Liberal Arts and Sciences, excluding duplicates	127	96	20	25	49	6	.....	323
Professional Curricula								
School of Agriculture	55	80	18	29	20	1	.....	203
School of Education	47	145	42	77	33	.....	.....	344
School of Engineering	133	152	85	79	12	4	.....	465
School of Forestry	43	51	10	21	2	1	.....	128
School of Home Economics	109	131	36	56	17	3	.....	352
School of Pharmacy	38	47	9	10	2	.....	.....	106
Secretarial Science	107	69	20	15	.....	.....	.....	211
Lower Division Business Administration	34	32	.....	.....	.....	.....	.....	66
Lower Division Fine Arts	9	4	3	.....	.....	1	.....	17
Lower Division Journalism	6	5	.....	.....	.....	.....	.....	11
Lower Division Physical Education	.....	1	.....	.....	.....	.....	.....	1
Totals (excluding duplicates)	708	813	243	312	135	16	.....	2,227
Auditors	.....	.....	.....	.....	.....	.....	.....	22
Total Students, Regular Session								2,249

DISTRIBUTION OF ENROLLMENT AS TO SEX AND RANK 1933-34

	Men	Women	Total
Total Graduate Students	92	43	135
Total Undergraduate Students	1,334	758	2,092
Total Auditors	8	14	22
Totals	1,434	815	2,249

ENROLLMENT IN SUMMER SESSION, 1933

	Men	Women	Total
Regular Students	131	168	299
Auditors	3	4	7
4-H Club Short Course	254	305	559
Total	388	477	865

ENROLLMENT IN GENERAL EXTENSION DIVISION*

Oregon State System of Higher Education
(See pages 387-389.)
July 1, 1933, to June 30, 1934

	Undergraduate			Graduate			Total		
	Men	Women	Total	Men	Women	Total	Men	Women	Total
Extension Classes									
Portland	593	858	1,451	35	59	94	628	917	1,545
Eugene	11	27	38	.....	.....	.....	11	27	38
Enterprise	12	16	28	.....	.....	.....	12	16	28
Hood River	1	3	4	.....	.....	.....	1	3	4
Medford	11	20	31	.....	.....	.....	11	20	31
Salem	48	95	143	.....	.....	.....	48	95	143
Total	676	1,019	1,695	35	59	94	711	1,078	1,789
Correspondence Study									
New Registrants	243	363	606	.....	.....	.....	243	363	606
Students registered before July 1, 1933, who are still enrolled	177	321	498	.....	.....	.....	177	321	498
Total	420	684	1,104	.....	.....	.....	420	684	1,104
Total General Extension Division	1,096	1,703	2,799	35	59	94	1,131	1,762	2,893

SUMMARY OF DEGREES GRANTED 1933-34

Advanced Degrees		
Doctor of Engineering (Honorary)	1	.....
Doctor of Laws (Honorary)	2	.....
Doctor of Literature (Honorary)	1	.....
Master of Arts	4	.....
Masters of Science	46	.....
Total advanced degrees	.....	54
Bachelors' Degrees		
Bachelors of Arts—		
Home Economics	2	.....
Science	7	.....
Bachelors of Science—		
Agriculture	40	.....
Commerce	7	.....
Education	80	.....
Chemical Engineering	11	.....
Civil Engineering	18	.....
Electrical Engineering	24	.....
Industrial Arts	5	.....
Mechanical Engineering	28	.....
Forestry	24	.....
Home Economics	54	.....
Pharmacy	16	.....
Science	20	.....
Secretarial Science	10	.....
Total bachelors' degrees	.....	346
Total degrees granted 1933-34	.....	400

*The enrollments given in the table do not include adult extension in agriculture and home economics or junior extension through the 4-H clubs through the Federal Cooperative Extension service (see pages 390–393) nor do they include enrollments in radio classes and other non-credit work of the General Extension Division.

Index of Names

(General Index, page 437.)

Index

(Index of Names, page 433.)