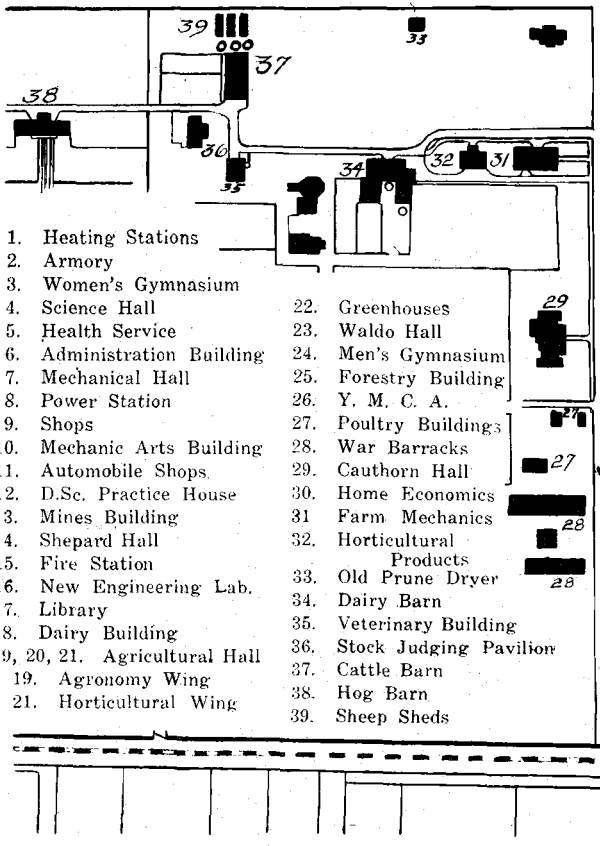
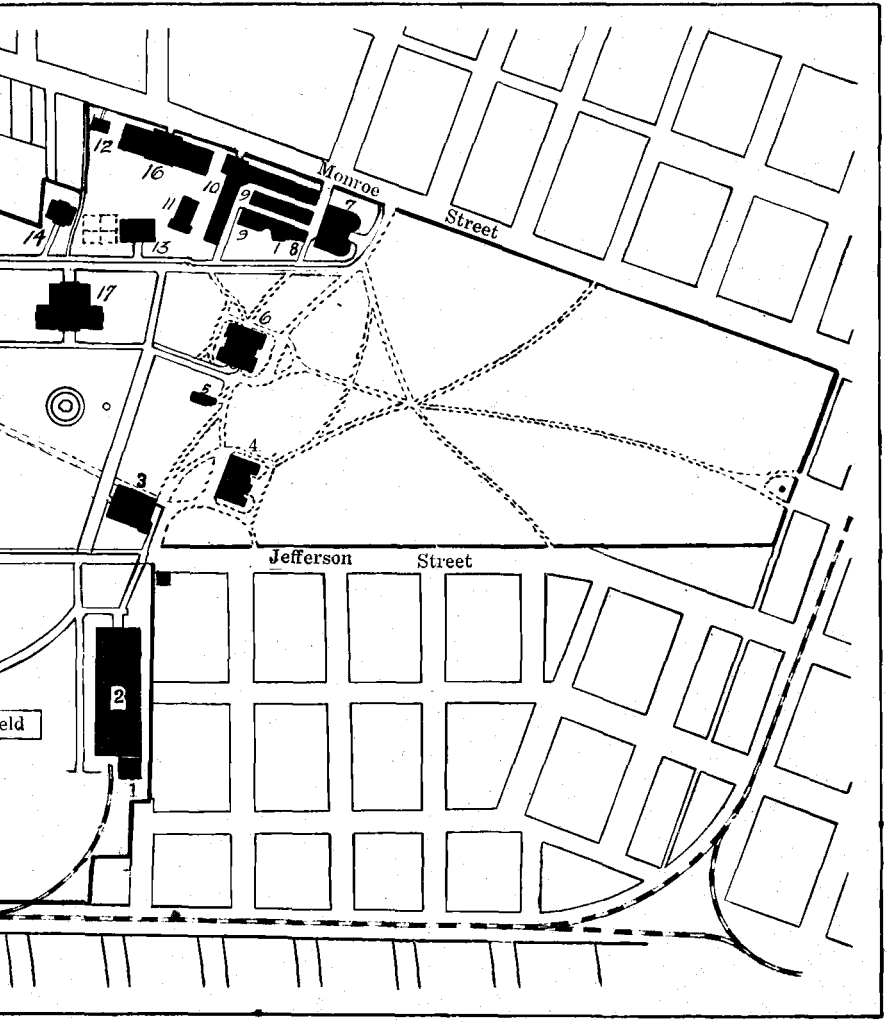
Oregon Agricultural College Campus, 1919



1. Heating Stations
2. Armory
3. Women's Gymnasium
4. Science Hall
5. Health Service
6. Administration Building
7. Mechanical Hall
8. Power Station
9. Shops
10. Mechanic Arts Building
11. Automobile Shops
12. D.Sc. Practice House
13. Mines Building
14. Shepard Hall
15. Fire Station
16. New Engineering Lab.
17. Library
18. Dairy Building
19, 20, 21. Agricultural Hall
    19. Agronomy Wing
    21. Horticultural Wing
22. Greenhouses
23. Waldo Hall
24. Men's Gymnasium
25. Forestry Building
26. Y. M. C. A.
27. Poultry Buildings
28. War Barracks
29. Cauthorn Hall
30. Home Economics
31 Farm Mechanics
32. Horticultural Products
33. Old Prune Dryer
34. Dairy Barn
35. Veterinary Building
36. Stock Judging Pavilion
37. Cattle Barn
38. Hog Barn
39. Sheep Sheds


Monroe
Street
Jefferson
Street
eld
1
2
3
4
5
6
7
8
9
10
11
12
13
14
16
17

CATALOGUE

OF THE

Oregon Agricultural College

FOR

1919-20

With List of Students for 1918-19

CORVALLIS, OREGON
August 15, 1919

O. A. C. PRESS
1919

CALENDAR 1919-1920

1919

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	21	..
..	..	..	..	..	..	..

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	..	..	..
..	..	..	..	..	..	..

1920

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
29	..	..	..	..	..	..
..	..	..	..	..	..	..

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
..	..	..	..	..	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	..	..	..
..	..	..	..	..	..	..

COLLEGE CALENDAR 1919-1920

1919

September 22, 23, Monday, Tuesday—Registration.

September 24, Wednesday—Recitations begin.

October 10, Friday—Meeting of Board of Regents.

November 27, 28, 29, Thursday, Friday, Saturday—Thanksgiving recess.

December 20, Saturday—First term ends; Christmas recess begins.

December 29 to January 3, Monday to Saturday—Farmers' and Home Makers' Week and Rural Life conferences.

1920

January 5, Monday—Second term begins; Winter Short Courses begin.

January 7, Wednesday—Meeting of Board of Regents.

January 31, Saturday—Winter Short Courses end.

February 22, Sunday—Washington's birthday; holiday.

March 20, Saturday—Second term ends; spring vacation begins.

March 29, Monday—Third term begins.

April 7, Wednesday—Meeting of Board of Regents.

May ———————— Inspection Day.

May 30, Sunday—Decoration Day; a legal holiday.

June 5, Saturday—Last day of recitations for third term.

June 6, Sunday—Baccalaureate sermon.

June 7, Monday—Senior Class Day; Alumni Reunion.

June 8, Tuesday—Commencement exercises.

June 8, 9, 10, 11, Tuesday afternoon, Wednesday, Thursday, Friday—Final examinations for third term.

June 21, Monday—Summer session begins.

July 31, Saturday—Summer session ends.

CONTENTS

COLLEGE CALENDAR 3

BOARD OF REGENTS 6

OFFICERS OF ADMINISTRATION AND INSTRUCTION..... 6-25

OUTLINE OF COURSES OF STUDY..... 26

GENERAL INFORMATION 27-73
- Foundation and Endowment, History 27-28
- Organization, Government 28-31
- Purpose and Scope 31-32
- Location 32-33
- Grounds and Buildings 33-44
- Income of the College 44-46
- Official Publications 47
- Student Organizations 47-54
- Student Publications 55-56
- Student Expenses, Self-Support 56-59
- Health Service, Loan Funds, Prize Funds, Fawcett Cup.....59-63
- Admission to the College, Accredited Schools 67-68
- Degrees and Certificates 69-71
- Registration, Resident Requirements 71-73

SCHOOLS AND DEPARTMENTS 74-390
- School of Agriculture 74-135
- School of Commerce 136-174
- School of Engineering and Mechanic Arts 175-232
- School of Forestry 233-245
- School of Home Economics 246-265
- School of Mines 266-283
- School of Pharmacy 284-296
- School of Vocational Education 297-308
- Service Departments 309-367
- Chemical Engineering 368-371
- Industrial Journalism 372-373
- Library 374-375
- Military Science and Tactics 376-381
- Physical Education for Men 382-386
- Physical Education for Women 387-390

SCHOOL OF MUSIC 391-400

SUMMER SESSION 401-403

EXPERIMENT STATION 404-409

EXTENSION SERVICE 410-420

CATALOGUE OF DEGREES, HONORS, FACULTY, STUDENTS, AND ATTENDANCE 421-510
- Degrees Conferred, 1918-19 421-424
- Honors and Prizes 425-426
- Roster of Officers, Military Department 427-428
- Alphabetical Catalogue of Faculty 429-435
- Catalogue of Students, 1918-19 436-508
- Summaries of Enrollment 509-510

INDEX 511-517

BOARD OF REGENTS

OFFICERS

HON. J. K. WEATHERFORD, President.....Albany
HON. JEFFERSON MYERS, Secretary.....Portland
HON. C. L. HAWLEY, Treasurer.....McCoy

EX-OFFICIO MEMBERS

HON. BEN W. OLCOTT, Governor and Secretary of State....Salem
HON. J. A. CHURCHILL, Supt. of Public Instruction.....Salem
HON. CHARLES E. SPENCE, Master of State Grange..Oregon City

APPOINTED BY THE GOVERNOR

	Term Expires
HON. WALTER M. PIERCE	La Grange, 1921
HON. H. VON DER HELLEN	Wellen, 1921
HON. GEO. M. CORNWALL	Portland, 1921
HON. B. F. IRVINE	Portland, 1924
HON. N. R. MOORE	Corvallis, 1924
HON. JEFFERSON MYERS	Portland, 1924
HON. J. K. WEATHERFORD	Albany, 1927
HON. C. L. HAWLEY	McCoy, 1927
HON. M. S. WOODCOCK	Corvallis, 1927

STANDING COMMITTEES

EXECUTIVE COMMITTEE

J. K. Weatherford, Chairman; C. E. Spence, W. M. Pierce, J. Myers, C. L. Hawley.

FINANCE COMMITTEE

M. S. Woodcock, W. M. Pierce, H. von der Hellen.

COLLEGE COMMITTEE

J. A. Churchill, Chairman; W. M. Pierce, N. R. Moore.

STATION COMMITTEE

W. M. Pierce, Chairman; H. von der Hellen, C. E. Spence.

FORESTRY

Geo. M. Cornwall, Chairman; Ben W. Olcott, M. S. Woodcock.

EXTENSION COMMITTEE

J. Myers, Chairman; C. L. Hawley, C. E. Spence, H. von der Hellen.

OFFICERS OF ADMINISTRATION AND INSTRUCTION

(Arranged in groups in the order of seniority of appointment)

ADMINISTRATIVE COUNCIL

WILLIAM JASPER KERR, D.Sc.,
President.

ARTHUR BURTON CORDLEY, D.Sc.,
Dean of the School of Agriculture; Director of the Agricultural Experiment Station.

GRANT ADELBERT COVELL, M.E.,
Dean of the School of Engineering and Mechanic Arts; Professor of Mechanical Engineering.

JOHN ANDREW BEXELL, A.M.,
Dean of the School of Commerce; Professor of Accounting and Business Management.

EDWIN DEVORE RESSLER, A.M.,
Dean of the School of Vocational Education; Professor of Education.

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

MARY ELIZA FAWCETT, A.M.,
Dean of Women.

ADOLPH ZIEFLE, Ph.C., M.S.,
Dean of the School of Pharmacy.

ORLO DORR CENTER, M.S.,
Director of the Extension Service.

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

CHARLES EDWARD NEWTON, E.M.,
Dean of the School of Mines.

M. ELLWOOD SMITH, Ph.D.,
Dean of the Service Departments.

COLLEGE COUNCIL*

FREDERICK BERCHTOLD, A.M.,
Professor of English Language and Literature.

JOHN B. HORNER, A.M., Litt.D.,
Professor of History.

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

JOHN FULTON, M.S.,
Professor of General Chemistry; Director of Chemical Laboratories.

CLAUDE ISAAC LEWIS, M.S.A.,
Professor of Horticulture; Vice-Director and Chief in Horticulture, Experiment Station.

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

JAMES DRYDEN,
Professor of Poultry Husbandry; Chief in Poultry Husbandry, Experiment Station.

HENRY DESBOROUGH SCUDDER, B.S.,
Professor of Farm Management; Chief in Farm Management, Experiment Station.

WILLIAM FREDERIC GASKINS, M.B.,
Professor of Music.

WILLIAM ARTHUR JENSEN,
Executive Secretary.

FARLEY DOTY McLOUTH, B.S.,
Professor of Art.

LOUIS BACH, M.A.,
Professor of Modern Languages.

IDA ANGELINE KIDDER, A.B., B.L.S.,
Librarian.

ERMINE LAWRENCE POTTER, B.S.,
Professor of Animal Husbandry; Chief in Animal Husbandry, Experiment Station.

*The College Council is composed of members of the Administrative Council and other members of the staff with the rank of professor, associate professor, or assistant professor.

THEODORE DAY BECKWITH, M.S.,*
Professor of Bacteriology; Chief in Bacteriology, Experiment Station.

HECTOR MACPHERSON, Ph.D.,
Professor of Economics and Sociology; Director of the Bureau of Organization and Markets.

ULYSSES GRANT DUBACH, Ph.D.,
Professor of Government and Business Law.

HENRY CLAY BRANDON, A.M.,
Professor of Industrial Arts; Director of Shops.

RICHARD HAROLD DEARBORN, A.B., M.E.,
Professor of Electrical Engineering.

GEORGE FRANCIS SYKES, A.M.,
Professor of Zoology and Physiology.

BENNETT THOMAS SIMMS, D.V.M.,
Professor of Veterinary Medicine; Chief in Veterinary Medicine, Experiment Station.

THOMAS ANDERSON HENDRICKS TEETER, B.S.,
Professor of Irrigation Engineering.

SAMUEL HERMAN GRAF, M.S.,
Professor of Experimental Engineering.

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

EDWARD MICHAEL DUFFY,
Manager of Business Office.

HAROLD MANLEY TENNANT,
Registrar.

HOWARD PHILLIPS BARSS, A.B., M.S.,
Professor of Botany and Plant Pathology; Chief in Botany and Plant Pathology, Experiment Station.

---

* On leave of absence.

PAUL VESTAL MARIS, B.S.,
State Leader County Agriculturists, Extension Service.

GEORGE ROBERT HYSLOP, B.S.,
Professor of Farm Crops; Chief in Farm Crops, Experiment Station.

WILBUR LOUIS POWERS, M.S.,
Professor of Soils; Chief in Soils, Experiment Station.

ELMER POLIC JACKSON, B.S.,
Superintendent of Buildings.

LESTER LOVETT, B.S.,
Professor of Entomology; Chief in Entomology, Experiment Station.

ARTHUR LEE PECK, B.S.,
Professor of Landscape Gardening and Floriculture; Superintendent of Campus and Greenhouses.

ARTHUR GEORGE BOUQUET, B.S.,
Professor of Vegetable Gardening; Vegetable Gardening Specialist, Experiment Station.

WILLIAM JAMES GILMORE, B.S.A.E.,
Professor of Farm Mechanics.

RALPH KEMPTON STRONG, Ph.D.,
Professor of Industrial Chemistry.

PHILIP MARTIN BRANDT, B.S., A.M.,
Professor of Dairy Husbandry; Chief in Dairy Husbandry, Experiment Station.

HARRY PERCY BARROWS, Ph.D.,
Professor of Agricultural Education.

EDWIN THOMAS REED, B.S., A.B.,
College Editor.

FRANK HENRY SHEPHERD, A.M.,
Professor of Industrial Education.

JESSE FRANKLIN BRUMBAUGH, A.M., LL.B.,
Professor of Psychology.

HELEN LEE DAVIS, A.B., B.S.,
Professor of Household Art.

ALMA GRACE JOHNSON, B.S.,
Professor of Household Administration.

FRANCIS LAWRENCE SNOW,
Professor of Industrial Journalism.

EDWARD MARIS HARVEY, Ph.D.,
Research Professor of Horticulture.

WALTER SHELDON BROWN, A.B., M.S.,
Professor of Pomology.

HOMER WOODSON HARGISS,
Professor of Physical Education; Athletic Coach.

JOHN SHIRLEY JONES, M.S.,
Professor of Agricultural Chemistry; Experiment Station Chemist.

JOSEPH KEPNER PARTELLO,
Colonel of Infantry, U. S. Army, Professor of Military Science and Tactics; Commandant of Cadets.

HERBERT TOWNSEND VANCE,
Professor of Office Training.

CHARLES VLADIS RUZEK, B.S.A.,
Professor of Soil Fertility; Associate Professor of Soils, Experiment Station.

GEORGE EDWARD GOODSPEED, Jr., B.S.,
Professor of Geology.

SARAH LOUISE LEWIS, M.S.,
Professor of Household Science.

OTTO BERGER GOLDMAN, B.S.,
Professor of Heat Engineering.

EDNA AGNES COCKS, A.M.,
Professor of Physical Education for Women.

STUART HOBBS SIMS, B.S. in C.E.,
Professor of Civil Engineering.

MARK CLYDE PHILLIPS, B.M.E.,
Associate Professor of Mechanical Engineering; Superintendent of Heating.

HAROLD STEPHENSON NEWINS, Ph.B., M.F.,
Associate Professor of Forestry.

WINFRED McKENZIE ATWOOD, Ph.D.,
Associate Professor of Plant Physiology.

EDWARD BENJAMIN BEATY, B.S., M.A.,
Associate Professor of Mathematics.

IDA BURNETT CALLAHAN, B.S.,
Associate Professor of English Language and Literature.

GODFREY VERNON COPSON, M.S.,
Associate Professor of Bacteriology.

EDWARD BLODGETT FITTS,
Associate Professor of Dairy and Animal Husbandry, Extension Service.

ORAN MILTON NELSON, B.S.,
Associate Professor of Animal Husbandry; Associate in Animal Husbandry, Experiment Station.

NEWELL HOWLAND COMISH, M.S.,
Associate Professor of Economics and Sociology.

FRANK ABBOTT MAGRUDER, Ph.D.,
Associate Professor of Government and Business Law.

BERTHA DAVIS, M.S.,
Associate Professor of Home Economics Education.

REGINALD HEBER ROBINSON, M.S.,
Associate Professor of Agricultural Chemistry Research, Experiment Station.

HARRY CASE SEYMOUR,
State Leader Industrial Clubs, Extension Service.

JESSIE DUNLAVEY McCOMB, M.S.,
State Leader Home Demonstration Agents, Extension Service.

WILLIAM FLETCHER SHARP,
Colonel, Field Artillery, U. S. Army, In Charge Field Artillery Unit.

EDWARD CORNELIUS HANFORD,
Major, Field Artillery, U. S. Army, Assistant Field Artillery Unit.

NICHOLAS TARTAR, B.S.,
Assistant Professor of Mathematics.

SIGURD HARLAN PETERSON, B.A.,
Assistant Professor of English.

LAWRENCE FISHER WOOSTER, B.S.A.,
Assistant Professor of Electrical Engineering; Superintendent of Light and Power.

WILLIAM ALFRED BEVAN, B.S.,
Assistant Professor of Physics.

WILLIAM EVANS LAWRENCE, B.S.,
Assistant Professor of Botany.

HELEN JULIA COWGILL, B.S.,
Assistant State Leader of Industrial Clubs, Extension Service.

LAWRENCE EUGENE ROBINSON, B.S.,
Assistant Professor of Rural Architecture.

SAMUEL MICHAEL PATRICK DOLAN, C.E.,
Assistant Professor of Civil Engineering.

CHARLES ELMER OWENS, A.M.,
Assistant Professor of Plant Pathology.

MARION BERTICE McKAY, M.S.,
Assistant Plant Pathologist, Experiment Station.

LOREN BURTON BALDWIN, A.M.,
Assistant Professor of English.

LUCY MAY LEWIS, A.B., B.L.S.,
Assistant Librarian, Reference Librarian.

EDGAR LeROY WESTOVER, B.S.,
Field Dairyman, Extension Service.

VINCENT DICK CHAPPELL, M.S.,
Assistant Professor of Dairy Husbandry.

EZRA JAMES FJELDSTED, B.S.,
Assistant Professor of Animal Husbandry, Extension Service.

CHARLES EDWIN THOMAS, M.E.,
Assistant Professor of Experimental Engineering.

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

JOHN FREDERICK GROSS HICKS, Ph.D.,
Assistant Professor of General Chemistry.

WILLIAM HODGE, M.A.,
Assistant Professor of Organic Chemistry.

SIBYLLA HADWEN,
Housekeeper Women's Dormitories; Preceptress, Waldo Hall.

EDWIN MONROE SMITH,
Chief Clerk, Business Office.

HELEN LUCILE HOLGATE, B.S.,
In charge of College Exchange.

HARRY LYNDEN BEARD, B.S.,
Assistant Professor of Mathematics; Director of Cadet Band.

ERWIN BERTRAN LEMON, B.S.,
Assistant Professor of Accounting.

ASA CHANDLER, Ph.D.,
Assistant Professor of Zoology and Physiology.

CHARLES STOCKTON BREWSTER, M.S.,
Assistant Professor of Poultry Husbandry.

ERNEST CHARLES HOBBS,
Superintendent of Print Shop.

EDWARD FRITCHOFF TORGERSON, B.S.,
Assistant Professor of Soils.

WILLIAM HENRY DREESEN, Ph.D.,
Assistant Professor of Economics and Sociology.

EDWARD MARTIN BUOL, C.E.,
Assistant Professor of Forestry.

DALE EVERETT RICHARDS, B.S.,
Assistant Professor of Animal Husbandry.

ERNEST HERMAN WIEGAND, B.S.,
Assistant Professor of Horticultural Research.

ETHA MABEL MAGINNIS,
Assistant Professor of Office Training.

FRANKLIN SCOTT WILKINS, M.S.,
Assistant Professor of Farm Crops.

FREDERICK CHARLES KENT, A.B.,
Assistant Professor of Mathematics.

JOHN CORCORAN, B.S.,
Assistant Professor of Commercial Education.

HARRY GEORGE MILLER, M.S.,
Assistant Professor of Agricultural Chemistry Research, Experiment Station.

CHARLES JARVIS McINTOSH, B.S.,
Assistant Professor of Industrial Journalism; Agricultural Press Editor.

ERNEST ROSCOE WILCOX, B.S., Met.E.,
Assistant Professor of Mining.

CARL EPHRIAM SCHUSTER, B.S.,
Assistant Professor of Horticulture, Extension Service.

LILA MORRIS O'NEALE, A.B., B.S.,
Assistant Professor of Household Art.

LEON WALTON WING, B. S., M. A.,
Assistant Professor of Dairy Husbandry.

HATTY DAHLBERG, M.S.,
Assistant Professor of Home Economics Education.

REUBEN VEERIN GUNN, B.S.,
Farm Management Demonstrator, Extension Service.

WALLACE LaDUE KADDERLY, B.S.,
Assistant State Leader County Agents, Extension Service.

LEONARD JOHN ALLEN, M.S.,
State Leader Pig Clubs, Extension Service.

FRANK LLEWELLYN BALLARD, B.S.,
Assistant State Leader County Agents, Extension Service.

GOTTFRIED WELLS SPOERRY,
Captain, Infantry, U. S. Army, Supply Officer and Acting Quartermaster.

ERNEST FLAGG AYRES,
Captain, Corps of Engineers, U. S. Army, Instructor in Military Engineering.

EZRA JAMES GULLY,
Captain, Field Artillery, U. S. Army, Instructor in Field Artillery.

EVERETT BROCKWAY WETTENGEL,
Captain, Field Artillery, U. S. Army, Instructor in Field Artillery.

INSTRUCTORS AND ASSISTANTS

WILLIAM McCAULLY PORTER,
Instructor in Forging.

GENEVIEVE BAUM-GASKINS,
Instructor in Pipe-organ and Piano.

GERTRUDE EWING McELFRESH, A.B.,
Instructor in English.

AMBROSE ELLIOTT RIDENOUR, B.S.,
Instructor in Foundry Practice.

CHARLES GEORGE WILTSHIRE,
Instructor in Plumbing and Steam Fitting.

JOHN HARRISON BELKNAP, B.S.,
Instructor in Electrical Engineering.

LILLIAN MABEL GEORGE, B.L.S.,
In charge of Continuations Department, Library.

KATHERINE BARBARA HAIGHT,
Instructor in Home Nursing; Preceptress, Cauthorn Hall.

EDNA MAY FLARIDA,
Instructor in Art.

DEXTER RALPH SMITH, B.S.,
Instructor in Civil Engineering.

MELISSA MARGARET MARTIN, A.B., B.S.,*
Instructor in Modern Languages.

LAURA JEAN CHENEY, B.S.,
Instructor in Household Science.

MARGARET MOREHOUSE, B.S.,
Instructor in Household Art.

WILLARD JOSEPH CHAMBERLIN, B.S.,
Instructor in Entomology; Assistant in Entomology, Experiment Station.

---

* On leave of absence.

CLYTIE MAY WORKINGER,
Secretary to the Dean of Vocational Education.

GUSTAV DUNKELBERGER, M.B.,
Instructor in Piano.

MARTIN LOUIS GRANNING,
Instructor in Auto Mechanics.

DENIS HAYES,
Regimental Sergeant Major, U. S. Army, Retired; Assistant Commandant; Post Quartermaster.

HOWARD MARSHALL WIGHT, M.S.,
Instructor in Zoology.

LOUISE ALBERTA SCHNEIDER,
Instructor in Household Art.

FRANK HEIDTMAN LATHROP, B.S., A.B.,
Instructor in Entomology; Assistant Entomologist, Experiment Station.

SARA WATT PRENTISS, B.S.,
Instructor in Household Science.

EARL GILBERT, M.S.,
Instructor in Chemistry.

CARL GRISSEN,
Instructor in String Instruments; Director of College Orchestra.

JESSIE BILES, A. B.,
Instructor in Household Art.

AMBROSE REUBEN NICHOLS, B.S.,
Instructor in Industrial Education.

LURA AMELIA KEISER, B.S.,
Instructor in Home Economics Education.

LILLIAN BURNS, B.S.,
Instructor in Stenography.

MARY VAN KIRK,
Instructor in Household Art.

HAROLD KELLY, B. S.,
Instructor in Agricultural Chemistry.

MARGARET FARQUHAR COOK,
Secretary of the Extension Service.

BERTHA HERSE, B.S.,
In charge Circulation Department, Library.

VALDA EVELINE SMITH, A.B.,
Instructor in Chemistry.

SOLOMAN FINE, M.S., M.A.,
Instructor in Dairy Husbandry.

ALMA CATHERINE FRITCHOFF, A. B.,
Instructor in Household Art.

EMMA SKINNER WELD, Ph.B.,
Instructor in Household Art.

WINNONA CRUISE, M.A.,
Instructor in Household Science.

MARY KIEFFER, B.S.,
Instructor in Household Science.

BERTHA ALICE WHILLOCK, B.S.,
Instructor in Office Training.

HELEN McFAUL, B.A.,
Instructor in Household Art.

JOHN MYERS CLIFFORD,
Secretary to the Dean of Agriculture and the Director of the Experiment Station.

FREDERICK JOHN ALLEN, B.S., H.E.,
Instructor in Chemistry.

BLANCHE MacCLATCHIE,
Instructor in Physical Education for Women.

ANTON EVERETT JENSEN,
Instructor in Farm Mechanics.

FRANCIS PARKER MYERS, B.S.,
Instructor in Experimental Engineering.

GLENN HARTMAN HILL,
Instructor in Machine Shops.

PAUL MEHL, M.S.,
Agent in Marketing; Extension Service.

KATHERINE McFARLAND,
Instructor in Household Science; Assistant Housekeeper, Dormitories.

DONALD KENNETH MEREEN, B.S.,
Instructor in Industrial Arts.

ARDIS THOMAS MONK, B.S.,
Instructor in Physics.

CLAIR WILKES, B.S.,
Instructor in Farm Management.

ALFRED WEAVER OLIVER, B.S.,
Instructor in Animal Husbandry.

FREDERICK WILHELM MILLER, D.V.M.,
Instructor in Veterinary Medicine.

HERSCHEL BRIAN McWILLIAMS, Ph.C., B.S.,
Instructor in Pharmacy.

EARL DeWITT DOXSEE, B.S.,
Instructor in Agricultural Education.

MINNIE KOOPMAN,
Instructor in Office Training.

MARY ISABELLE BOVEE,
Instructor in Physical Education for Women.

RUTH WININGER,
Instructor in Physical Education for Women.

LULA MAY, B.S.,
Instructor in Household Art.

E. E. WILLIAMS, A.B.,
Instructor in Modern Languages.

ETHEL TAYLOR, A.B.,
Instructor in Modern Languages.

MORRIS WENK, A.M., E.E.,
Instructor in Mechanical Engineering.

RALPH COLEMAN, B.S.,
Instructor in Physical Education for Men.

BREWER BILLIE, B.S.,
Assistant Athletic Coach.

W. V. HALVERSON,
Instructor in Bacteriology.

JOHN ALBERT VAN GROOS, M.S.,
Instructor in Mathematics.

LILA GRACE DOBELL, B.S.,
Assistant in Library.

DELOSS EVERETT BULLIS, B.S.,
Assistant in Agricultural Chemistry.

HARRY AUGUST SCHOTH, M.S.,
Scientific Assistant U. S. Department of Agriculture Forage Investigations.

ETHEL ALLEN, B.S.,
Assistant in Library.

ANDREW EDWARD MURNEEK, M.S.,
Research Assistant in Horticulture.

DELMER MORRISON GOODE, B.A.,
Assistant to College Editor.

WILLIAM ANDERSON SMART, B.S.,
Research Assistant in Horticulture and Entomology.

LYLE PORTER WILCOX, B.S.A.,
Research Assistant in Horticulture.

WILLIAM WATERS JOHNSTON, B.S.,
Field Agent in Soils.

RAY B. BOALS, B.S.,
Instructor in Mechanical Engineering.

MERRILL OLIVER RAWSON, Ph.C., B.S.,
Instructor in Pharmacy.

JOHN RICHARD NEVIUS, B.S.,
Instructor in Farm Crops.

JAMES SIMMONS, M.S.,
Instructor in Bacteriology.

HENRY HARTMAN, M.S.,
Instructor in Horticulture.

ETHEL ANN JONES,
Instructor in General and Analytical Chemistry.

F. K. SWOBODA, M.S.,
Instructor in Organic and Food Chemistry.

BURR BLACK, B.S.,
Assistant Entomologist.

MABEL ROBINSON,
Secretary to the Dean of Commerce.

MYRTLE BURNAP, B.S.C.,
Secretary to the Dean of Mines.

ZELTA FERN FEIKE, B.S.,
Secretary to the Dean of Home Economics.

CHARLOTTE HARRIS JACKMAN,
Secretary to the Dean of Engineering.

MAYLON EDWARD SCOTT,
First Lieutenant, Field Artillery, U. S. Army, Instructor in Field Artillery.

FRANK GEORGE HUNTER,
Regimental Supply Sergeant, Infantry, U. S. Army, Assistant Instructor in Military Science and Tactics.

JOSEPH ETIENNE ROBERGE,
First Sergeant Infantry, U. S. Army, Assistant Instructor in Military Science and Tactics.

FRANK JOHN HILTON,
First Sergeant, Field Artillery, U. S. Army, Assistant Instructor in Field Artillery.

LEWIS ELLSWORTH,
Sergeant, Infantry, U. S. Army, Assistant Instructor in Infantry.

DORY LOUIS SOWERS,
Sergeant, Field Artillery, U. S. Army, Assistant Instructor in Field Artillery.

RICHARD GORGENSON,
Corporal, Field Artillery, U. S. Army, Assistant Instructor in Field Artillery.

LESLIE C. WHITAKER, B.S.,
Assistant in Bacteriology.

WILLIAM WHITAKER, B.S.,
Assistant in Bacteriology.

WALTER KOCKEN, B.S.A.,
Orchard Foreman.

WILLIAM SAMUEL AVERILL, B.S.,
Foreman in Farm Crops.

AGNES RYDER,
U. S. D. A. Seed Analyst.

JOHN SAMUEL WIEMAN, B.S.,
Research Fellow in Horticulture.

PALMER PATTON, B.S.,
Research Fellow in Farm Management.

KATHERINE DOUGLAS WAITE, B.S.,
Fellow in Chemistry.

FRANK FITCH,
Fellow in Chemistry.

SUPERINTENDENTS OF BRANCH EXPERIMENT STATIONS

EASTERN OREGON BRANCH EXPERIMENT STATION

ROBERT WITHYCOMBE, B.S.,
Union.

UMATILLA BRANCH EXPERIMENT STATION

HAROLD KARL DEAN, B.S.,
Hermiston.

SHERMAN COUNTY DRY-FARM BRANCH EXPERIMENT STATION.

DAVID EDMUND STEPHENS, B.S.,
Moro.

SOUTHERN OREGON BRANCH EXPERIMENT STATION

FRANK CHARLES REIMER, M.S.,
Talent.

HARNEY VALLEY BRANCH EXPERIMENT STATION

OBIL SHATTUCK, M.S.,
Burns.

JOHN JACOB ASTOR BRANCH EXPERIMENT STATION

ALBERT EDWARD ENGBRETSON, B.S.,
Astoria.

HOOD RIVER BRANCH EXPERIMENT STATION

LEROY CHILDS, B.S.,
Entomologist, Experiment Station.

GORDON GEORGE BROWN, B.S.,
Horticulturist, Experiment Station,
Hood River.

COUNTY AGRICULTURAL AGENTS *

FRED BENNION, A.B.,
Umatilla County.

CLAUDE CLIFTON CATE, B.S.,
Jackson County.

CLAUDE CLARK CALKINS, B.S.,
Sherman County.

JOHN EDWARD COOTER, B.S.,
Lincoln County.

ARTHUR LAWRENCE FLUHARTY, B.S.,
Wasco County.

SYLVESTER BENJAMIN HALL, B.S.,
Multnomah County.

MAC HOKE, B.S.,
Wallowa County.

D. C. HOWARD, B.S.,
Columbia County.

* Names arranged in alphabetical order.

LAWRENCE ALVA HUNT,
Morrow County.

CALVIN JEHU HURD,
Douglas County.

NEAL CLEMENT JAMISON, B.S.,
Washington County

ROY CARROLL JONES, B.S.,
Tillamook County.

GEORGE WALLACE KABLE, B.S.,
Benton County.

HUBERT EDSON KOONS, B.S.,
Deschutes County.

HERWEGH JOSEPH LECHNER, B.S.,
Clatsop County.

NEWELL STARR ROBB, B.S.,
Lane County.

RICHARD GORDON SCOTT, A.B.,
Clackamas County.

STANLEY VAN SMITH, B.S.,
Linn County.

JAY LATTIMER SMITH, B.S.,
Coos County.

PAUL HERMAN SPILLMAN, B.S.,
Union County.

EDGAR H. THOMAS, B.S.,
Klamath County.

CHARLES DAWSON THOMPSON, M.S.,
Josephine County.

HENRY ELGIN TWEED, B.S.,
Baker County.

COUNTY HOME DEMONSTRATION AGENTS

MARIE ANTHONY, B.S.,
Clackamas County.

RUTH LILLYN CORBETT, B.S.,
Josephine County.

ELLA MAY HARMON, B.S.,
Umatilla County.

MINNIE KALBUS, B.S.,
Coos County.

ANNE ELIZABETH McCORMICK, B.S.,
Jackson County.

LORENE AUGUSTA PARKER, B.S.,
Umatilla County.

FLORENCE ELDORA POOL, B.S.,
Jackson County.

COUNTY CLUB LEADERS *

ETHEL IRENE CALKINS,
Multnomah County.

THOMAS DE FOREST KIRKPATRICK, L.B.,
City of Portland.

XANTHUS EARL EXIE MORGAN,
Wasco County.

EMIL RALPH PETERSON, B.S.,
Coos County.

FRANK WILLIAM SEXTON,
Klamath County.

ANDREW ERVIN STREET,
Douglas County.

ROMNEY PEARLE SNEDEKER,
Clackamas County.

* Names arranged in alphabetical order.

OUTLINE OF COURSES OF STUDY

I. FOUR-YEAR CURRICULA (B.S. DEGREE):

In the School of Agriculture, major courses in—

(a) Agriculture (general)
(b) Agricultural Chemistry
(c) Animal Husbandry
(d) Bacteriology
(e) Botany and Plant Pathology
(f) Dairy Husbandry
(g) Entomology
(i) Farm Mechanics
(i) Farm Management
(h) Farm Crops
(k) Horticulture
(l) Poultry Husbandry
(m) Soils
(n) Zoology and Physiology

In the School of Commerce, major courses in—

(a) Business Administration
(b) Economics and Sociology
(c) Political Science
(d) Stenography and Office Tr.

In the School of Engineering, major courses in—

(a) Civil Engineering
Highway Engineering
Irrigation Engineering
Structural Engineering
(b) Electrical Engineering
(c) Industrial Arts
(d) Mechanical Engineering

In the School of Forestry, major courses in—

(a) General Forestry
(b) Logging Engineering

In the School of Home Economics, major courses in—

(a) Household Art
(b) Household Science
(c) Household Administration
(d) Institutional Management

In the School of Mines, major courses in—

(a) Ceramic Engineering
(b) Geology
(c) Mining Engineering

In the School of Pharmacy, major courses in—

(a) Pharmacy

In the School of Vocational Education, major courses in—

(a) Agricultural Education
(b) Commercial Education
(c) Home Economics Education
(d) Industrial Education

In the department of Chemical Engineering, major courses in—

(a) Chemical Engineering

II. GRADUATE CURRICULA (M.S., M.E., E.E., and Ch.E. DEGREES).

III. TWO-YEAR AND THREE-YEAR CURRICULA IN PHARMACY (Ph.C. and Ph.G. DEGREES).

IV. VOCATIONAL CURRICULA, as follows:

A. General Agriculture (three-month, six-month, and one-year courses).
B. Horticulture (three-month, six-month, and one year courses).
C. Dairy Manufactures (three-month courses beginning January 2).
D. Tractor Operation (three-month courses repeated each term).
E. Business Short Course (two-year Vocational Curriculum in Commerce).
F. Dietitians' Course (two-year curriculum).
G. Homemakers' Course. (one-year curriculum).
H. Homemakers' Short Courses (one month).
I. Forestry Short Course (November 3 to April 16).
J. Mechanic Arts (one-year Vocational Curriculum).
K. Auto Mechanics (three-month and one-year courses).

V. SCHOOL OF MUSIC (Voice, piano, pipe-organ, violin, orchestra, and band instruments).

GENERAL INFORMATION

FOUNDATION AND ENDOWMENT

By an Act of Congress, approved by President Lincoln, July 2, 1862, a grant of land to the amount of thirty thousand acres, or its equivalent, was made to each state in the Union for each senator and representative in Congress to which the state was entitled by the apportionment of the census of 1860. The proceeds under this Act were to constitute a perpetual fund. The principal of this fund was to remain forever undiminished; but the interest arising from the fund was to be inviolably applied by each state that should avail itself of the benefits of the Act to 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 such manner as the legislatures of the states may respectively prescribe, 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 apportioned to Oregon; and by an Act approved October 9, 1862, the Legislative Assembly of Oregon accepted the provisions of the Congressional law.

HISTORY

As there were no State colleges in Oregon in 1868, the legislature of that year, which provided for the location of the land received under the Act of 1862, gave the interest on the funds derived from the sale of the land to the Corvallis College, a private institution in Benton County, which was then under the control of the Methodist Episcopal Church, South. For a number of years, none of the land granted was sold, and the legislature made small annual appropriations for the support of the institution.

In 1885, the church voluntarily relinquished its claim on the funds of the College, and the State assumed entire control of the institution. The legislature of that year provided for the "permanent location of the State Agricultural College at Corvallis, in Benton County," on condition that the citizens of said county

should, within four years, erect on the "farm containing thirty-five acres in the immediate vicinity of said city, known as the Agricultural College Farm, brick buildings for the accommodation of said State Agricultural College at a cost of not less than $20,000." During the summer of 1887, the corner stone of the building erected by the citizens of Benton County was laid by the Governor of Oregon amid impressive ceremonies.

This structure, now known as the Administration Building, was the nucleus around which other buildings soon began to cluster, as necessity and growing interest demanded. For a year or two there was ample room; but, as the institution grew, more land was needed and provided, and the institution now owns, as compared with the thirty-five acres originally comprising the campus and grounds, three hundred and forty-nine acres; and as compared with one structure, thirty eight. There has also been a marked increase in the attendance, from ninety-seven to over four thousand students. Twenty years ago, most of the students came from Benton and neighboring counties. Today, every county in Oregon, 32 other states, and 8 territories and foreign countries are represented. The increase in the number of students called for an increase in the number of the faculty. This body, from the number of five in 1884, has grown until it now closely approaches two hundred. Other features usually found in connection with progressive educational institutions have grown in equal ratio. The courses have been strengthened, the standards, both for entrance and graduation, have been advanced, and other improvements have been made from time to time, which have added to the thoroughness and efficiency of the work.

ORGANIZATION

The Oregon Agricultural College is organized into the three grand divisions that characterize the work of the land-grant colleges throughout the country; namely, Resident Instruction, Experiment Station, and Extension Service. Resident Instruction, which includes all work of teaching students at the institution, is the most distinctive feature of the College life. It has always been regarded as of first importance, and will doubtless continue to be so regarded, in spite of the increasing usefulness of extension work. The Experiment Station, through systematic experiments, investigation, and research, is engaged in a search for fundamental

truth. Its work is of great importance; for without it, the work of the other two grand divisions would soon become sterile and ineffective. The Extension Service, which is the newest of the three grand divisions of the College, includes all means of imparting the message of the College to the people in their own communities. It is virtually an effort to make practical and more or less immediate application throughout the State of the available truths worked out by the Experiment Station or used for resident instruction.

GOVERNMENT

The general government of the College is vested primarily in the Board of Regents, and, under their control, in four other administrative bodies—the Administrative Council, the College Council, the Faculty, and the staffs of the Experiment Station and Extension Service. These bodies, in the exercise of their respective duties, determine the questions of policy and regulate all matters relating to the interests of the institution.

The Board of Regents consists of thirteen members, of whom the Governor, the Secretary of State, the Superintendent of Public Instruction, and the Master of the State Grange, are ex-officio members. The nine other members are appointed by the Governor with the approval of the State senate, and hold office for a term of nine years. Under a law of the State legislature, passed in 1885, the Board of Regents constitutes a body corporate, under the name of "The Board of Regents of the State Agricultural College, * * with power to sue and be sued, and to make contracts," and to enact such regulations as may be necessary for the maintenance and development of the College.

The Administrative Council consists of the President of the College, the Director of the Experiment Station, the Director of Extension Service, the deans of the different schools, and the Director of the Summer School. The function of this Council is to consider and determine the larger questions of policy and administration.

The College Council is composed of the President of the College and all officers of administration and instruction with the rank of professor, associate professor, or assistant professor. This body considers all general questions relating to the educational work and policy of the College; arranges and correlates the courses of

study, and determines the requirements for admission and graduation. The different committees of the College Council, representing the several schools of instruction, have charge of the enrollment and progress of students in the respective schools, and investigate the records of all candidates for graduation.

The College Faculty comprises members of the Administrative Council and the College Council and all other instructors, including members of the Experiment Station and Extension Service staffs. It considers routine questions of method and discipline, a function for which it is particularly well adapted, being in close contact with all that pertains to student interests and student life.

The Experiment Station Staff includes the President of the College, the Director of the Experiment Station, the heads of the various departments of the School of Agriculture, and all assistants engaged in research and experimental work. The members of this staff are engaged in the investigation of problems encountered in the development of the agricultural interests of the State. They also distribute, by means of correspondence, circulars, and station bulletins, information regarding their investigations.

The Extension Service Staff includes the President of the College, the Director of Extension Service, the Secretary of Extension Service, the State Leader of County Agents, the County Agents, the officers in charge of Boys' and Girls' Club Work, Extension Field Specialists in Horticulture, Dairy and Animal Husbandry, Agronomy, Poultry Husbandry, Organization and Markets, Highway Engineering, Home Economics, Farm Management Demonstrations, and members of the Resident Instruction Staff and Experiment Station Staff who assist in extension work.

Dean of Women. The position of the Dean of Women is administrative, supervisory, and advisory. It is the duty and privilege of the Dean of Women to know each girl so well that she may be of the greatest possible help and inspiration to her as adviser, counselor, and friend. The position covers the problems of living and social conditions, student employment, vocational guidance, and all problems which touch the young women's lives while they are in College.

The Student Affairs Committee, composed of members of the faculty, is designed to look after those interests of the students which are not strictly academic in character. It assists students in

working out their social problems. It helps to maintain a wholesome relationship between clubs and fraternities and the College. It is prepared to assist student organizations in all their financial dealings. In short, the committee strives to bring about these conditions which will make the student's college life of the greatest profit to him.

Adviser for Freshman Class. In order that freshman students may become acquainted early in their college life with student-body regulations and traditions and with college ideals, and that they may be more quickly welded into an effective class organization, a member of the faculty has been appointed Adviser for the Freshman Class. He advises them in the selection of special studies and in such other ways as may be of assistance to them.

The Students. The College does not undertake to prescribe in detail either its requirements or prohibitions. Students are met on a plane of mutual regard and helpfulness. Since the advantages of the institution are provided at public expense, the students are under special obligation to perform faithfully all their duties, not only to the College, but also to the community and to the State. Whenever the deportment of any student is such that his influence is inimical to the interests of the institution, he will be relieved from further attendance.

PURPOSE AND SCOPE

The purpose of the College is to provide, in accordance with the acts of Congress under which it is maintained, a liberal, thorough, and practical education—an education that will afford the training required for efficient service in different branches of industry. The distinctive technical work covers the three great fields of production, manufacture, and commerce. Special attention is given to the application of science. All the practical work in the laboratories, in the shops, in the orchards, and on the farm, is based on scientific principles. While the industrial or technical work is emphasized, the importance of a thorough general training, of mind development, and of culture, is recognized in all the work of the institution. The object is to meet the demand for a broad and general education, supplemented by special technical training.

The work, therefore, covers a broad field, including technical courses along the different lines of agriculture, forestry, home

economics, engineering, mining, commerce, pharmacy, industrial education, and industrial arts; with the necessary training in the basic subjects of mathematics and the natural and physical sciences; and also the general training in language, literature, history, economics, political science, civics, military tactics, and physical education, which constitutes an essential part of a liberal education.

LOCATION

The seat of the Oregon Agricultural College is Corvallis, a city of 6,500 inhabitants, situated at the head of navigation on the Willamette River. As the name implies, it is in the heart of the Willamette Valley, famous for its varied and abundant resources.

It is readily accessible by steam and electric railway from all parts of the State, the main-line Southern Pacific steam trains all connecting with Corvallis, and both the "West-side" Electric and the Oregon Electric trains running into the city. In addition to these north-and-south railways, an east-and-west railway running through the city connects the College with the Cascade mountains on the east and the Ocean, at Newport, on the west. Corvallis has free mail delivery, excellent paved streets, good schools, many churches, attractive residences, a modern sewer system, and a first-class gravity water system supplied from springs on the slopes of Mary's Peak, the tallest mountain in the Coast Range, sixteen miles to the west.

Situated on high, well-drained land, open to the invigorating sea-breeze, Corvallis is one of the most healthful cities in Oregon. The climate is remarkably equable; and severe storms are almost unknown, summer or winter. The average annual temperature for 28 years (1890-1918) is 55.01 degrees Fahrenheit, and the average annual rainfall for the same period is 42.76 inches. The lowest temperatures for the five years 1914 to 1918 were respectively 13, 21, 8, 14, and 19 degrees Fahrenheit in December and January; and the highest temperatures for the same years, in July and August, were respectively 100, 97, 99, 103, and 99 degrees Fahrenheit.

The glens and gorges of the Coast Range, beginning only a few miles west of Corvallis, the distant splendor of the Cascades, 60 miles to the eastward, with their wealth of trees and the perennially snow-capped peaks,—Hood, Jefferson, and the Three

Sisters—present a constant panorama of picturesque mountain scenery. With such an environment, Corvallis is an ideal location for a college and a home.

GROUNDS AND BUILDINGS

The College Grounds comprise three hundred forty-nine acres. That part of the grounds, ninety-one acres in extent, lying immediately about the several buildings, east of Cauthorn Avenue, and usually designated as the lawns and campus, is tastefully planted with both native, exotic, and ornamental trees, shrubs, and herbs. The one hundred forty-three acres used for the farm, garden, and orchard operations are so plotted and planted as to meet the demands of the various lines of work and still conform to a general scheme of landscape embellishment. This portion occupies a slightly elevated and gently undulating site wholly within the western limits of the city of Corvallis. Broad drives and walks traverse the campus in all directions, thus rendering every objective point easily accessible. In addition to the above plot, one hundred and fifteen acres, comprising the College south farm, including the horticultural and poultry tracts, lie just south of the city limits.

The following brief descriptions will convey a general idea of the principal buildings and the purposes for which they are used:

The Administration Building is a three-story brick structure, 90 x 120 feet, containing recitation rooms of the English department, the offices of the President, the Registrar, the Business Manager, the department of Industrial Journalism, the Barometer, and the Director of the School of Music. Centrally located and on a slight eminence, it commands an unsurpassed view of the campus, the city of Corvallis, and the picturesque Cascades.

Science Hall, situated southeast of the Administration Building, and constructed of gray granite and sandstone, covers a ground space of 85 x 125 feet, has three stories and basement, and contains fifty-five rooms. It is one of the most serviceable buildings on the grounds, and within it are housed the departments of Chemistry and Pharmacy, with their various laboratories, recitation rooms, and lecture halls, together with the offices and laboratories of the Experiment Station chemists.

Agricultural Hall, standing southwest of the Administration Building, is the largest structure on the campus. It is an imposing

edifice of brick and sandstone, consisting of the central or administrative section, the north or Agronomy wing, and the south or Horticultural wing.

The central section is 66 x140 feet, four stories and basement, and contains conveniently arranged and well-lighted class rooms, laboratories, and offices. On the first floor are the offices of the Director of the Experiment Station and Dean of the School of Agriculture, the Director of Extension Service, the State Leader of County Agriculturists, the State Leader of Industrial Clubs, with their several branches, the Editor of Publications, and the College Exchange. The second floor is occupied by the department of Animal Husbandry and the School of Commerce; the third floor, by the departments of Zoology and Entomology with their respective museums; and the fourth floor, by the departments of Bacteriology and Art.

The north or Agronomy wing is 72 x 130 feet, three stories high. It is thoroughly modern in all its equipment, and while intended solely for the work in Agronomy, at present accommodates also, temporarily, the School of Commerce. The first and second floors, occupied by the departments of Soils and Farm Management, Agricultural Engineering, Farm Crops, and Drainage and Irrigation, contain, in addition to the offices of these departments, rooms variously devoted to laboratory and class purposes. All of the third floor and office rooms on the first and second floors are used by the School of Commerce.

The south or Horticultural wing is 72 x 130 feet, three stories high. In the basement are located laboratories for plant propagation, spraying, vegetable preparation, and fruit packing. The basement also contains the general storage rooms for the department, and rooms which are especially adapted for the storage of fruits. The first floor contains the offices of the department of Horticulture. the research laboratory, systematic pomology laboratory, and three large lecture rooms. The second floor contains the offices and museums of the department of Botany and Plant Pathology, recitation rooms, and student laboratories. The third floor contains the horticultural museum and horticultural herbarium, photograph room, large student lecture room, drafting rooms, lecture rooms, and office of the Landscape Gardening section. These rooms are all especially well lighted and contain every convenience for conducting the work with efficiency.

The Library Building. The much-needed new Library Building is located south of the Mines Building. It consists of two stories and basement in front and three stories and basement at the back. It is built of red brick and gray terra cotta, presenting a quiet and dignified appearance, in keeping with the use, fundamental to education, to which it is put. The most modern and effective system of lighting, heating, and ventilating is installed.

The first floor consists of an entrance hall, two large lecture rooms for the use of one-credit and other classes too large to be accommodated by the class room of ordinary size; on this floor are the cloak rooms for the use of students. The second and third floors at the front are occupied by the main reading room ample to seat over three hundred for reference work. Back of this room on the second floor are the offices, cataloguing, and other work rooms. The third floor consists of comparatively small rooms designed ultimately for seminar rooms for the use of such departments as will make the library their chief laboratory; however, in the present condition on the campus, with its lack of recitation rooms and laboratories, this story is largely given over for the present to meet this pressing need.

The northwest part of the library contains the fire-proof steel stack room which houses the formerly scattered collection of valuable books in safety, and permits their much easier and more effective use.

The building is ample to accommodate the growth of the library for many years and its architecture permits stack expansion as time and growth demand it.

Greenhouses. A range of greenhouses aids the student in his studies in commercial greenhouse work. The range is made up of five even-span houses, three ninety feet long by twenty feet wide, and two thirty-three feet long by twenty feet wide, making the total area under glass 6,720 square feet. Each of the large houses has been divided into sections thirty feet long, so that the entire space in each may be given up to a single crop. Of the two smaller houses, one is given up to research work, and one to general plant propagation. Such crops as carnations, chrysanthemums, violets, palms, ferns, general pot plants, and forced vegetables, like tomatoes, lettuce, and cucumbers, are grown in these houses.

Dairy Building. About sixty feet to the northward of Agricultural Hall is located the Dairy Building. The general scheme of both outside and inside finish is similar to that of Agricultural Hall. The structure is 54 x 141 feet, three stories high. On the first floor are located the offices of the Dairy department and laboratories for butter-making, cheese-making, and market milk instruction, including a boiler and engine room and student lockers. On the second floor are the testing laboratory, advanced laboratory, veterinary laboratories, etc. The third floor is temporarily occupied by the department of Mathematics, with the exception of a general lecture room, extending across the south end of this floor, and having a seating capacity of two hundred.

The Forestry Building. A three-story Forestry Building, 80 feet wide and 136 feet long, constructed of brick, houses the work in forestry and logging engineering. This building contains roomy laboratories for work in silviculture, dendrology, mensuration, forest protection, technology, drafting, and logging engineering. As rapidly as material can be assembled these laboratories will be supplied with the various instruments and equipment which the peculiar work of each requires. In addition to the laboratories, space is to be 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 will be assembled large specimens of all commercial woods of the United States. All available publications dealing with forestry and logging subjects are provided for the use of students. Portions of the building are used temporarily by the department of English and the department of Poultry Husbandry.

Home Economics. The first wing, 68 x 120 feet, of the new Home Economics Building is occupied by the departments of Household Science and Household Art. The building is located directly west from the Dairy Building. It consists of three stories above a high basement, and is built of brick and stone. Heating and ventilating systems of the most modern type are installed, and all provisions are made for the comfort and convenience of the young women carrying the work in Home Economics. Offices for the professors and the assistants in both Household Science and Household Art are on the first, second, and third floors.

The food laboratories are on the first and second floors, while the Household Art department has all of the third floor of the

building and part of the second floor. Locker and dressing rooms are provided for the convenience of the students, and hot and cold water is supplied in all parts of the building.

The Mines Building, which is 65 x 81 feet in dimensions, is located about 100 yards northwest of the Administration Building, and is one of the newer buildings on the campus. This building forms the northern boundary of the quadrangle which is planned in the new building scheme on the College campus. It is a fine four-story structure, constructed of brick, trimmed with stone, and similar in type to Agricultural Hall. The first floor of the building contains the main offices, assaying, metallurgical and ore-dressing laboratories. The basement contains the crushing and sampling rooms, the ceramic laboratory, and the stock rooms. On the second floor are the Bureau of Mines laboratory and lecture and class rooms. On the third floor are the geological museum, the mineralogical and petrological laboratories, and drafting room. All the laboratories are provided with water, gas, electric lights, and steam heat.

Mechanical Hall, situated about one hundred and fifty yards northeast of the Administration Building, is 90 x 120 feet, two stories high, and constructed of Oregon gray granite and sandstone. It is an attractive, substantial building, well arranged and admirably adapted to the purposes for which it is used. Besides recitation and lecture rooms for the classes in Industrial Arts, Mechanical, Electrical, Civil, Highway, Irrigation, and Experimental Engineering, it contains the physical and engineering laboratories.

Mechanic Arts Building is a modern, well-lighted structure of brick, with cement foundations, 52 x 52 feet, two stories high, flanked by a one-story wing on the east, 40 x 220 feet, and a similar wing on the south, 40 x 200 feet. The central portion contains the office of the Dean, a display room for student work, a tool-room for the machine shop, and a finishing room for the wood shop. On the second floor is a general drafting room, 30 x 50 feet, with a blue-print room and a dark room adjoining. The south wing contains the main woodworking shop, 40 x 97 feet, a stock room, 30 x 40 feet, a carpenter shop, 20 x 40 feet, and the College printing plant, 40 x 50 feet. The east wing contains the machine shop, 40 x 80 feet, the blacksmith shop, 40 x 100 feet, store room for coal and iron, lockers, and toilet rooms.

The Foundry, which is located immediately south of the blacksmith shop, is built of brick. It contains one 22-inch Colliau cupola for melting iron, one brass furnace, one portable core oven, one stationary core oven for larger work, one twelve-hundred-pound crane ladle, one eight-hundred-pound crane ladle, and several smaller ladles. It contains also one crucible brass furnace, one two-ton jib crane, one post crane, one No. 2 Delano pulley molding machine, one tumbling barrel for cleaning castings, and a liberal supply of smaller tools, flasks, etc.

New Engineering Laboratory. A new Engineering Laboratory, appropriation for which was made by the 1919 legislature, is now under construction. The building will be of brick and concrete, 220 x 63 feet, and two stories high. The building is located on Monroe Street, directly north of the Mines Building, and adjacent to Mechanic Arts Building.

The first floor of the main laboratory will have three distinct groups of equipment. A materials laboratory, hydraulic equipment, and steam and gas engine laboratory will be provided. In the basement will be located a boiler which will furnish heat for the building and also steam for use of the engines to be installed in the laboratory. Underground tanks with pumps for furnishing water to the hydraulic laboratory immediately above on the first floor will be installed in the center of the basement. In addition there will be small laboratories for special work. A mezzanine floor will extend entirely around the main floor above which will be a five-ton traveling crane for moving heavy machinery. The remainder of the floor will be used for class and lecture rooms. An automotive laboratory will be located at one end of the building.

The Women's Gymnasium is situated about two hundred yards south of the Administration Building, and is erected against a gently sloping bank on Jefferson street. The structure, 70 x 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 first floor of the building is devoted to locker rooms, dressing rooms, bathrooms, and offices, together with a rest room and a special room for corrective gymnastics. The second floor consists chiefly of one large gymnasium room, which is also frequently used as a lecture hall, assembly room, and social center for moderate-sized gatherings. This room is surmounted by a balcony running track, suspended from the trusses.

It affords facilities, in a court of 79 x 54 feet dimensions, for basketball, indoor baseball, tennis, and various winter and indoor games. The building affords accommodations for the physical training of the women of the institution.

The Men's Gymnasium is situated immediately west of Waldo Hall on Jefferson street, adjoining the main athletic field. The structure is to consist of four units, the central part being 90 x 150 feet, with each wing 52 x 96 feet in dimensions. The fourth unit will provide a swimming pool 50 x 100 feet, of modern design and finish. Only two units were completed during 1914, the main hall and the east wing. The main hall is used as a lecture and assembly room, or a place for entertainments when large audiences are to be accommodated. The showers and the baths are of modern design, providing hot and cold water throughout the year. The floor of the main hall with its 13,500 square feet of surface, provides space for three basketball courts, indoor baseball diamond, and space for various winter and indoor games. The east wing provides boxing and wrestling rooms, and an auxiliary gymnasium with special apparatus for use of the individual and for corrective gymnastics. When completed, the building will have accommodations for upwards of 2,000 men.

The Armory is situated about three hundred yards south of the Administration Building. It is one of the largest of its kind in the United States and is built of concrete and steel, 126 x 355 feet. The drill hall portion has an unobstructed area of 36,000 square feet. The arms room, offices, and drill hall afford facilities for the accommodation of 1,000 men.

The New Heating Plant, located at the south end of the Armory, is a one-story, reinforced concrete building, with a concrete tunnel and conduits leading to the various buildings on the south side of the campus. It contains three boilers, one two-hundred-ninety, one two-hundred-fifty, and one one-hundred-fifty-five horsepower, with the necessary equipment for heating the buildings connected with it.

The Power Plant, a one-story brick building in the rear of Mechanical Hall, contains the requisite equipment for supplying the various buildings with heat, light, and power. The apparatus installed in this building serves the purpose also of demonstration equipment in these special lines.

Waldo Hall, one of the two halls of residence for women, occupies a commanding site one hundred fifty yards west of the Armory. It is a large building of striking appearance, with a cement foundation and basement wall, and a cream-colored, pressed-brick superstructure, three stories high. The dimensions are 96 x 240 feet; and it contains one hundred twenty-five rooms for students, besides a kitchen, dining-room, and parlors. It is modern in all its appointments and finished throughout in natural grain Douglas fir, stained to conform to the color scheme.

Cauthorn Hall, the second of the women's halls of residence, is a well-proportioned frame building, situated on a commanding spot in the western part of the campus. It is 160 x 50 feet, has three stories and basement, and contains sixty-two rooms, besides a large kitchen, dining-room, and reception rooms. Its furnishings and appointments are adequate, modern, and in harmony with its use. Each floor is supplied with hot and cold water, baths, electric light, and steam heat.

The "Y" Hut. The "Y" Hut is 60 x 110 feet in size, consisting of one main floor with balconies. The auditorium is equipped with a stage, large fireplace, and writing and game tables. Smaller rooms adjoining are used for many purposes such as committee meetings, billiards, the Secretary's office, and library.

Shepard Hall, the student building now under the auspices of the Y. W. C. A., was completed at a cost of something over $22,000. This building contains in the basement a swimming pool, shower baths, lockers, banquet room, kitchen, wood room, and accessories. The first floor contains a large lobby which is used for a reading room, game room for social events, and general assembly. It also contains offices for the General Secretary, a public office, and a combined cabinet and check room. The second floor contains six rooms for the use of the literary and dramatic societies and the Cosmopolitan Club. The building is a tribute to the memory of Clay Shepard, who gave his life to the cause of cleaner, higher, and truer citizenship as exemplified in student life.

Horticultural Products Building. The building is of brick, 72 x 46 feet in dimensions, with full basement and two additional floors. It is provided with steam, hot and cold water, and electricity for both lighting and power. On the first floor is a large evaporation room in which will be found a prune tunnel drier

consisting of three tunnels twenty-two feet long. Here also, will be found a kiln drier to be used especially for such fruits as apples. Adjoining the evaporation room is a receiving room, which can be utilized for processing, or for jam and jelly making. This floor also contains an evaporation room for the manufacture of juice, vinegar, and similar products.

On the second floor is a canning room 72 feet long, which will be equipped for the canning of fruits and vegetables; a room for experimenting with special fruit products, such as glace' fruits, maraschinos, etc. On this floor will also be set aside a room for young women in Household Science where they will work out the food value of the various products which the Horticultural department is able to prepare.

In the basement of this building are excellent storage facilities for canned goods, vinegars, etc. The building is equipped with an elevator. The inside walls are of brick with enamel coating, and the floors are waterproof, so that the entire building can be flushed out.

Farm Buildings. The College Farm is now well equipped with farm buildings and modern facilities for conducting practical and scientific work in animal husbandry.

The Dairy Barn is a frame building with cement foundation and brick pilasters. The main part is 50 x 100 feet, two stories high, with two wings extending to the south, each 46 x 80 feet, one story in height. There is also a milk room, boiler room, and fuel room, as well as bins for the storage of grain and feed. The cow stables are floored with concrete and provided with modern stanchions, milking machines, and feeding facilities. Wide aisles afford convenience to students and visitors. Three silos of different types, erected adjoining the Dairy Barn, are regularly utilized in the feeding of the dairy animals. The second story has storage capacity for 100 tons of loose hay.

The Cattle Barn. The department of Animal Husbandry has a modern beef-cattle and sheep barn. It is located just west of the old barns, and has a floor space of 52 x 120 feet for sheltering stock. The hayloft has a storage capacity for 300 tons of hay and straw. Adjoining the barn are several concrete-floored exercise lots and a new stave silo. Especial conveniences are provided for the feeding, watering, weighing, and handling of live stock. The west half of the barn is at present devoted to beef cattle and the

east half to sheep, although it is planned that the entire barn will eventually be used for beef cattle.

The Stock Judging Pavilion. The Animal Husbandry work of the College is greatly facilitated by a judging pavilion, which provides very comfortable and commodius quarters for all of the demonstration work with live stock. The main room is 40 x 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 ordinary purposes. The live-stock work in the past has been very much handicapped by crowded quarters without heat or good light, but these difficulties are now past and the department is in a position to do much better work than before.

The Veterinary Building, a frame structure 56 x 65½ feet, is used for both instructional and Experiment Station work. The front part of the building consists of two rooms, lighted by sky lights and large windows. One of the rooms is a small amphitheater, with a seating capacity of about 120. This is used very largely for clinic. The arena is sufficiently large for casting animals for surgical work. The opposite room is used for dissection and for holding autopsies. It is equipped with an overhead track for suspending carcasses, and is large enough to accommodate five dissection subjects at one time.

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. There are three box stalls, two of which can be thrown together for use as a maternity stall. There are three tie stalls. The stalls are used for both clinical and experimental animals. The second floor has space for storing feed, and for housing guinea pigs and rabbits.

There are two exercising paddocks just behind the building. The paddock fences have a baseboard which extends about 3 inches below the surface of the ground. The fences are doubled, with the necessary space between them to render the paddocks safe as quarantine pens.

Farm Mechanics Building. A modern building is provided for the Agricultural Engineering work. It is a well-lighted brick building, having a large operating floor, a class room, locker room, shop, and tool-room on the first floor. The operating floor is of cement and is roomy enough for demonstration and for the operation of the

heavier farm machines. Within this place is reserved space for the very heavy farm tractors. A gallery surrounding the operating floor provides space for the lighter farm implements, such as tillage, haying, and harvesting machines.

The building is equipped with shafting, belting, and power for operating and testing various machines, and a large well is provided for making pump tests. A complete equipment of the most up-to-date farm machinery is loaned 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 best classes of farm machinery of all types.

The Poultry Houses. On a five-acre tract of land, lying south and west of Cauthorn Hall have been erected several buildings for the needs of the department of Poultry Husbandry. The main poultry building is a three-story structure and is used principally for class, laboratory, and demonstration purposes. It contains a demonstrating room with desks and other necessary equipment; a shop, with the necessary tools, benches, and equipment for practice work in building poultry-plant equipment; storage rooms, office, and wash rooms are also provided. In the basement, rooms are provided for fattening and killing fowls, an incubator room for student use, and a feed room with the necessary machinery for grinding and mixing poultry feeds. Besides the main poultry building there is an incubator house, with a capacity of twenty-four incubators and complementary apparatus; and a feed-storage building and a brooding house. There are also colony houses for laying and breeding stock and growing chicks. The colony houses are movable and constructed upon a plan that could be adopted by any farmer. The colony brooding coops are also portable, and are used for investigations in both natural and artificial brooding.

Hog Barn and Feeding House. During the fall of 1916 the Animal Husbandry department secured its long-needed hog barn and feeding house. The barn is designed especially for farrowing and contains twenty-nine pens, with a four-foot alley running the length of the building from east to west. Concrete is used for the entire floor, the feeding troughs, and the automatic watering equipment. The feed house is twenty-eight by forty feet in dimensions, three stories high. The ground floor is occupied by a driveway and entrance alley, root bin, two large grain bins, which extend through the second story, and a hopper for dumping grain

into the elevator, which leads to the third floor. It provides also equipment for dividing, weighing, and loading pigs, as well as a small boiler for heating water. The second story provides room for the storage of straw, six smaller grain bins with hopper bottoms, and sleeping quarters for the herdsman. The third floor contains the grinder, motor, chutes to grain bins, and storage room for movable equipment. The total capacity of the building is 15 tons of roots, 6308 bushels of grain, and 40 tons of straw.

THE INCOME OF THE COLLEGE

Funds for the support of the College in its three grand divisions of work, Resident Instruction, Experiment Station, and Extension Service, are derived both from the National Government and the State of Oregon as follows:

FOR RESIDENT INSTRUCTION

From the National Government:

The Land-Grant Fund. The sale of the public land has netted the College approximately $200,000. This at present is invested in securities bearing six percent interest. The Act of Congress of 1862 explicitly demands that no part of the funds so appropriated, or the interest arising therefrom, shall be used for the purchase, erection, or maintenance of any building or buildings. The interest on this fund for 1918-19 is $11,800.

The Morrill Fund. On August 30, 1890, an act was passed by Congress "to apply a portion of the proceeds of the public land to the more complete endowment and support of the colleges for the benefit of agriculture and the mechanic arts established under the provisions of the Act of 1862." This act provides an annual fund of $50,000.

From the State of Oregon:

The Millage Tax. The College is chiefly dependent for maintenance upon the income from the millage tax, as provided by the State legislature of 1913, which became operative April 1, 1915. The income from this source for the year 1918-19 is $383,227.

The State legislature of 1919 made a special appropriation of $60,000 for the erection of an engineering laboratory; $15,000 for emergency military structures; and $157,566 for maintenance.

From miscellaneous entrance fees, etc., for the year 1918-19, Resident Instruction work derived an income of $10,804.

FOR EXPERIMENT STATION

Funds for the experimental work of the College, which is conducted both at the Corvallis Station and at seven branch stations located in different parts of the State, are derived from the National Government and from the State as follows:

From the National Government:

The Hatch Fund. Under an act of Congress, approved March 2, 1887, the College receives $15,000 a year for the maintenance of an Agricultural Experiment Station, "to aid in acquiring and diffusing among the people useful and practical information on subjects connected with agriculture."

The Adams Fund. An act of Congress, approved March 20, 1906, appropriated an initial $5,000 for that year, and $2,000 additional for each year thereafter until the annual amount should reach $15,000. This fund is "to be applied only to paying the necessary expenses of conducting original researches or experiments bearing directly on the agricultural industry" of the State, and therefore supplements the Hatch Fund in the maintenance of the Experiment Station.

For the support of the Branch stations at Moro, Hermiston, and Burns, the National Government appropriates annually $8,700.

From the State of Oregon:

State Funds. The State Legislature of 1919 made the following appropriations for agricultural investigations during the biennium, 1919-1920: For the general work of the Experiment Station, $50,000; for crop pest and horticultural investigations, $30,000; for soil, drainage, and irrigation investigations, $15,000; for dairy investigations, $10,000, making a total of $105,000.

Of this amount approximately $62,000 is available for the College fiscal year July 1, 1919 to June 30, 1920. The State also appropriates $31,000 annually for the support of branch experiment stations at Astoria, Burns, Hermiston, Hood River, Moro, Talent, and Union. The Hood River Station receives an additional appropriation of $2,000 annually from Hood River County. The 1919 legislature also made a special appropriation of $2,000 for the completion of the drainage system on the tide lands of the Astoria Station and the preparation of these lands for cultivation.

FOR EXTENSION SERVICE

From the National Government:

The Smith-Lever Fund. This fund was established by the Smith-Lever Agricultural Extension Act passed by Congress May 8, 1914. By its provisions the Oregon Agricultural College received $10,000 from the Federal Government to apply towards the support of the Extension Service for the fiscal year ending June 30, 1915. This sum is to be increased annually for seven years until the total amount of $30,380 is reached. This amount will continue as a permanent appropriation as long as an equal sum be "appropriated for that year by the legislature" of the State, "or provided by State, county, college, or local authorities, or individual contributions within the State for the maintenance of the cooperative agricultural extension work provided for in this Act."

The fund for the fiscal year July 1, 1918, to June 30, 1919, amounts to $25,562.

Department of Agriculture Funds. The United States Department of Agriculture appropriates this year $13,828 for cooperative work through Industrial Clubs, County Agents, Special Dairy Work, Marketing and Rural Organizations, and Farm Management and Business Demonstrations. The appropriation is conditioned upon the State's granting an equal sum for the same purposes.

War Emergency. To assist in establishing county agents, home demonstration agents, and junior club work throughout the State as an emergency war measure, the Government appropriated in 1918-19 approximately $80,000.

From the State of Oregon:

For General Extension Work. The State appropriates $25,000 for general extension work, including movable schools, lectures, publications, Farmers' and Home-Makers' Week, correspondence, demonstrations in agriculture and home-making. To meet the Smith-Lever increase the State appropriated $38,535.12 for the biennium 1919-1920.

For Cooperative Work. For cooperative work with the United States Department of Agriculture the State appropriates $15,000 a year, to meet the requirements already indicated.

For County Agent Work. To meet the appropriations made by the several counties for maintaining the work of the county agents, the State is now appropriating approximately $40,000 a year.

OFFICIAL PUBLICATIONS

The Oregon Agricultural College Bulletin. This is a periodical publication issued semi-monthly. It includes the Reports of the Board of Regents, the general College Catalogue, special announcements of College courses of study, illustrated booklets depicting College activities of special interest or timeliness, announcements of the Summer School, announcements of the Winter Short Courses, and circulars to prospective students.

Extension Bulletins. These bulletins consist of monographs on the various phases of Agriculture, Household Science and Household Art, Engineering, Mining, and Commerce, together with bulletins and circulars issued in connection with the Industrial Club work for boys and girls in the public schools and the Home Cooperative Demonstration Projects. They are written in such style as to be easily understood, thus meeting the popular demand for scientific knowledge and giving it in such form that the people of the State may profit by its application to the problems of everyday life.

The Station Bulletins. These publications 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, and special subjects of interest to the husbandman, conducted at the home station or the several branch stations.

STUDENT ORGANIZATIONS

One of the most important factors in rounding out the results and benefits of a college course is the society, club, or association work. As a result of the diverse interests of college life and the varied tastes of the students, the following organizations, besides many others, are maintained by students and faculty.

The Student Body Assembly. This is an organization of the entire student body working under a constitution and by-laws approved by the faculty and having general authority over all student body enterprises. Student body officers are elected annually. Nominations and elections are conducted in a manner similar to that of the state electorate. The officers consist of a president and a secretary chosen from the senior class, and three vice-

presidents chosen one each from senior, junior, and sophomore classes. These officers, as a whole, constitute the executive committee of the student body and have general supervision of all affairs of interest to the student body.

The Board of Control. The Board of Control consists of three faculty members appointed by the President of the College, one alumnus chosen by the Alumni Association, and five students who are the executive committee of the student body. The student body constitution vests in this Board of Control authority to supervise all student body interests entailing the expenditure of student body funds. They exercise functions in the main by the approval of budgets and schedules. The immediate supervision is exercised through a general manager appointed by the Board of Control.

Student Self Government. A system of student self government has been established at the College which places the general disciplinary powers of the institution in the hands of the students. The Student Council, an organization made up of ten students, five of whom are seniors, three juniors, and two sophomores, has been created and vested with such powers as are necessary to enforce the rules and regulations adopted by the students. Three members of the Student Council hold that position by virtue of their office as president of each of the classes. The remaining members are elected annually by popular vote of the student body.

The Literary Societies. These organizations have the common purpose of promoting literary work among the students. The weekly literary programs and occasional joint meetings tend to this end. The Shakopean is essentially an honorary society, membership depending upon honors won in debate or oratory at the College. To stimulate interest in debate and oratory, there are held during the year intersociety, intercollegiate, and interstate contests. Gold medals and cash prizes are presented to the winners in the contests, and the successful society in debate receives the "Gatch Cup." This is the silver cup that was presented in 1901 by Dr. Thomas M. Gatch, then president of the College, to the society that had received highest honors in the season's debates. Annually this cup is to go to the successful society in debates, but it is ultimately to become the property of the society winning it three years in succession. Many and determined have been the battles for its possession, but the cup is still without a permanent home.

The Mask and Dagger. This club was organized for the purpose of offering special training in dramatic art. A semi-annual "try-out" is held in which all students of the institution may participate, and any who possess talent in this direction may be elected to membership in the club. No student, however, will be permitted to take part in a public production who has not an average for all of his College work, at the time the play is being prepared, of 75 percent. Platform exhibitions are given and standard plays presented during the College year.

The Oratorical Association. This body has immediate charge of all business pertaining to the competitive work in oratory and debate. Schedules, dates, prizes, conditions of competition, and all similar matters are in its care.

Intercollegiate Debate and Oratory. Each year the Oregon Agricultural College has three intercollegiate debates, putting into the field six teams, three supporting the negative and the others the affirmative of the same question. The College sends one representative each year into the old-line State Oratorical Contest in which eight colleges take part. Gold medals are awarded to the men who represent the College in these events. Each year also the College sends a representative to the State Peace Oratorical Contest, where two prizes of $75.00 and $50.00 respectively are awarded for first and second place.

Local Debate and Oratory. A local peace oratorical contest is held annually, to the winner of which the Cosmopolitan Club of the College presents a cash prize of ten dollars. There are also interclass contests in Declamation, Debate, Oratory, and Extempore Speaking, prizes being awarded by the Oratorical Association to the winners of these events. These latter contests are forensic events in the annual Interclass Forensic-Athletic Championship Contest, wherein the four classes compete for individual prizes and three loving cups—the Shakopean Cup, which becomes the permanent property of the highest individual forensic point-winner of the class winning the championship; the Orange O Cup, which becomes the property of the best athlete in that class; and the Barometer Cup, which is held one year by the class winning the interclass championship.

Musical Organizations. The musical organizations of the College include two College bands; the O. A. C. Orchestra; the Glee

Club, composed of men students; and the Madrigal Club, a choral society composed of women students. Every two years the Glee and Madrigal clubs give a joint opera.

The Y. M. C. A. was organized at the Oregon Agricultural College in 1890. The Association has grown steadily, enlarging the scope and effectiveness of its work. During the war the Association was reorganized on the basis under which the Army associations operated in the training camps, and during the S. A. T. C. at the College the "Y Hut" was the center for varied activities and services which built up a remarkable morale among the men in uniform. The College "Y" during the coming year will aim to perform a similar service among the student body. A new program of activities will be instituted under the same General Secretary who was in charge during the S. A. T. C. The writing rooms, committee rooms, the auditorium, and stage will be at the service of the students for social, religious, and other student activities. The Hut will be used, as it has been during the past year, for College "sings," "movies," and other entertainment vital to the life of the institution. The "Y," in short, is firmly established as a strong inspirational influence in the life of the College.

The Young Women's Christian Association aims to cooperate with all the forces of the College in promoting among the women students a well-developed life. The headquarters of the organization are Shepard Hall, the student community building. On registration days committees are appointed to meet incoming students and to help them in adjusting their work. Those who wish to earn their way through College should apply to the Dean of Women, who has charge of the Employment Bureau for Women. Meetings of the Association are held the first and third Thursdays of every month. All women are welcome to these meetings. Bible and Mission Study classes, social service work, socials and teas, form part of the program for the year's work. Three-fourths of the women in College are members of the Y. W. C. A. and more than that number are enrolled in voluntary Bible Study.

The Athletic Association. This organization, maintained by the students through the student body assembly, encourages wholesome competition in the various outdoor and indoor intercollegiate sports. It has charge of all details pertaining to the conduct of

intercollegiate athletics in which the College may be interested. A committee of the faculty has general supervision over the whole subject of athletics, thus assisting to insure a sound and conservative management.

The Varsity O Association. This association, which succeeds the Orange O Club, includes all men of the College who have been officially awarded the Orange O in recognition of service on the intercollegiate athletic teams of the College. Its function is to promote the athletic ideals of the College and to serve in an advisory capacity to the Athletic Board of Control.

The Sphinx. This is the senior honor society. Membership is acquired by election based on prominence in student activities and excellence in scholarship.

The Forum. This society was organized by the junior and senior classes in the spring of 1914, its primary purpose being to recognize efficiency in scholarship among junior and senior students. Election is made to the society by its own members. The fact that high standards of general excellence have been set by charter members makes it a decided honor to any student to be elected to membership.

The Cosmopolitan Club. This is an organization of foreign and American students. It is the local chapter of the Association of Cosmopolitan Clubs of the World. Its purpose is to provide social and educational advantages for its members and to promote international friendship. At present, nine nations are represented in the local chapter.

The Agricultural Club. This club was established for the purpose of advancing interest in the various phases of agriculture, and promoting the investigation and discussion of both general and special agricultural subjects. Suitable programs are prepared for each meeting, and whenever practicable, leading authorities on practical agriculture are engaged to address the members.

The Lewelling Club. This is the Horticultural Club conducted under the auspices of the Horticultural department. There is no regular organization, except an executive committee, which has power to transact such business as requires action on the part of the club. It is open to all students interested in horticulture.

The Withycombe Club. Membership in this club is open to all students taking Animal Husbandry work. The meetings of the

club are devoted to discussion of Animal Husbandry topics not ordinarily covered in formal class-room instruction.

Gamma Sigma Delta. There is established at the College a local chapter of this national Honor Society of Agriculture. Election is limited to students of graduating and post-graduate classes in agricultural colleges who have shown exceptional ability during their undergraduate or graduate work, and to those alumni and faculty members who have rendered signal service to the cause of agricultural development.

Alpha Zeta. This is a national Agricultural fraternity requiring as a basis for membership high qualities of scholarship, leadership, and manhood. Election is by vote of the active members of the local chapter, and only those members of the junior and senior classes in Agriculture are eligible who rank in scholarship with the upper two-fifths of these classes.

The Forest Club. This is an association of students and instructors "formed for the purpose of promoting the forestry interests of the State." In order to carry out its purposes, it meets twice each month. The first meeting of each month is purely of a social nature, with each alternate meeting for the discussion of current forestry literature, magazine articles, news items, legislation, and general progress movements pertaining to forests, forest service, forest products, forest industries, lumbering, and the lumber trade.

The Civil Engineering Club. This is an organization within the departments of Civil and Highway Engineering. The active membership is drawn from the junior and senior classes, and the privilege of associate membership is extended to the members of the two lower classes. It meets weekly for the discussion of subjects of interest to the civil and highway engineer.

The Electrical Engineers. This is the College branch of the American Institute of Electrical Engineers. The aim of the organization is to discuss the topics contained in the monthly proceedings of the A. I. E. E., and in this way develop in the students an intimate knowledge of the activities of the national organization, bringing them into closer touch with the practical problems in the engineering world and better fitting them for their life work.

The Miner's Association. This body has for its object the discussion of technical engineering subjects, review of current mining

literature, presentation of original papers by the active members, and occasional lectures on special mining topics by men outside of the College.

Mechanical Engineers. This is the College branch of the American Society of Mechanical Engineers. The purpose of the organization is to meet at regular intervals for presentation of technical papers by members and by practicing engineers. Current topics of interest to engineers are also discussed at these meetings and an effort is made to keep in touch with the practical problems of the engineering world.

Sigma Tau. This is the local chapter of the national honorary Engineering fraternity, chapters of which exist at nearly all of the recognized technical schools of the United States. Membership in the fraternity is restricted to junior and senior students in Engineering and Forestry, election to membership being based principally upon excellence in scholarship.

Omicron Nu. Lambda chapter of Omicron Nu, national Home Economics organization, was installed on the campus May 30, 1919. Elections are based on scholarship, personality, and leadership. The society's main objects are to promote leadership and to further home economics ideals.

The Home Economics Club. This is an organization for the purpose of bringing all the women of the School of Home Economics into closer touch with one another than is possible without a central organization. The aim of the club is to give, by a series of monthly meetings, a general survey of Home Economics questions not covered in regular class-room work. The aim is carried out by means of well-directed discussions and by securing outside lecturers who by virtue of their training and experience are considered authorities on subjects relating to Home Economics.

Alpha Kappa Psi. Theta chapter of Alpha Kappa Psi, national Commerce fraternity, was organized during the year 1913-14. The purpose of the fraternity is to promote investigation along scientific lines in all phases of commercial work. Membership is open only to students in the junior and senior year in the School of Commerce; and in order to be elected to membership a student must have shown himself a leader both in scholarship and in student activities.

The Commercial Club. This is a student organization within the School of Commerce. The purpose of the club is to bring its members into close relation with current methods and events in the commercial world. This is accomplished by discussions of topics pertaining to commerce by members of the club, and by addresses at various times during the year by prominent men in the fields of law and business. Active membership is open to all members of the School of Commerce.

The Pharmaceutical Association. The main purpose of this organization, which consists of the pharmacy students, is to bring its members into closer relation with the current events of the pharmaceutical world. This is brought about by discussions in the meetings of topics pertaining to pharmacy, and by addresses at various times during the year by prominent pharmacists and salesmen of the State.

The Easterners' Club. Membership in the Easterners' Club is open to all students and faculty people who have at any time resided in those states situated east of the Mississippi River, or in those provinces of Canada east of Manitoba. The objects of the club are to promote the interests of the College throughout the East, to encourage prospective students from the East, and to offer social diversion to its members by providing occasions for the mingling of ideas on such current events as the sports and politics which are represented by the various states included within the membership.

The Eastern Oregon Club. This is an organization effected for the purpose of promoting the mutual interests of the College and the people of the eastern part of the State. Its members are afforded many social and intellectual advantages from the regular club meetings. Membership is open to all students from Eastern Oregon.

The California Club and **The Washington Club,** are, as the names imply, composed of students whose homes are in California or Washington. The clubs meet for the purpose of bringing "Californians" and "Washingtonians" together socially.

The Portland Club is composed of all of the students registering at the College from Portland, the primary object of the club being social diversion among those students who have been previously associated in their high-school work.

STUDENT PUBLICATIONS

The Barometer. In March, 1896, the literary societies of the College began the publication of a monthly periodical, the "O. A. C. Barometer." The enterprise met with deserved success, and "the organ of the student body" is now issued as a four-page, six-column semi-weekly. It publishes the news of the College, and is of general public importance as representing the interests, character, and accomplishments of the student body at the College. By action of the Board of Regents, resulting from a unanimous recommendation of the student body, a portion of the regular term student fee of $3.35 is devoted to the "Barometer," and every student regularly receives the paper.

The Beaver. This annual publication of the junior class made its initial appearance as "The Orange" in 1907. It is a high-class publication, substantially bound, and fully illustrated with photo-engravings, pen-and-ink sketches, and line and wash drawings. It is a full-dress carnival of the year's life, representing the dignity, the beauty, the versatility, the gaiety, the traditions, the sentiment, and the solidarity of the Oregon Agricultural College.

The Oregon Countryman. This is an illustrated monthly magazine, published by the Agricultural and Home Economics students under the supervision of the faculties of these schools. It is designed to be of special service to the farm home. Besides dealing with the work of the various College departments in a practical manner, it contains articles of scientific value contributed by the Experiment Station workers. Successful men and women of the State contribute articles for each issue.

The Student Engineer. This is a magazine devoted to engineering and mechanic arts. Its purposes are to record the engineering progress in the Northwest; to furnish news; to discuss methods relating to the mechanic arts; to publish records of scientific work done by students in this institution; and to publish any matter of special technical and scientific interest. Items of interest will be found for civil, mining, mechanical, and electrical engineers, for foresters and others engaged in technical pursuits. The journal is under the supervision of the faculties of the schools

of Engineering, Mining, and Forestry, but the work and responsibilities of the publication are borne by the staff, composed of students in Engineering, Mining, and Forestry.

The Commercial Print. This magazine, published each term by the students of the School of Commerce under the supervision of the faculty of the School, is devoted to the commercial interests of the College and State. Articles of merit are contributed for each issue by students, faculty, and prominent business men of the State. One feature of the magazine is the publication each year of a complete directory of all the members of the institution, students, faculty, and employees.

The O. A. C. Alumnus. This is a quarterly periodical edited and issued for the Alumni Association by the Secretary of the General Alumni Association of the Oregon Agricultural College, whose office is at the College.

STUDENT EXPENSES

GENERAL FEES

Tuition is free to all students, regardless of the place of residence. The regular College fees, excepting for special students in music who take no other College work, are as follows:

Entrance fee, payable annually on registration	$5.00
Incidental (Student) fee, payable each term	3.35
Gymnasium fee, payable each term	1.00
Diploma fee on graduation	5.00
Binding fee for graduation thesis	1.00
Vocational certificate fee	1.00

LABORATORY FEES AND DEPOSITS

Students are charged small fees in the different laboratory courses to cover the cost of material used; and deposits are required to cover cost of breakage in laboratory courses where breakages are likely to occur. These fees are payable at the beginning of each term. At the end of the term deduction is made for actual breakage, and the balance of the deposit is refunded to the student. The fees and deposits charged each term are indicated in connection with the detailed descriptions of the various courses. Any changes in laboratory fees due to changes in market prices of laboratory materials are announced in the schedules of courses issued at the beginning of each term.

BOARD AND ROOM

Women's Dormitories. Waldo Hall and Cauthorn Hall, with their large airy parlors and halls, are pleasant residences for the young women who come from distant homes. The buildings are supplied throughout with pure mountain water, both hot and cold, electric lights, steam heat, and other modern conveniences. The rooms are furnished with an iron bedstead, a mattress, a chiffonier, a table, and chairs. Such other materials as are needed to make the furnishings complete, including pillows, pillow-cases, sheets, blankets, bedspreads, and towels are furnished by the student; and many of the students prefer to make the rooms more home-like by bringing rugs, curtains, pictures, sofa cushions, etc. These latter articles, however, are not at all necessary. The rooms are cheerful and comfortable without additional furniture. 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 windows. Most rooms are furnished with single beds, but a few double ones are available. There are a limited number of single rooms in each hall. Preference for single rooms should be indicated early. The many advantages of having a roommate should not be overlooked by the student in making her plans for college life.

The conditions of living in Waldo Hall and Cauthorn Hall are such that the College considers it a distinct advantage to the women students to live in these halls of residence. A wholesome, busy student atmosphere is maintained. Reasonable freedom is allowed, but week nights are reserved for study. All girls entering the College are expected to live in one of the dormitories, unless their parents reside in the city, or they are given special permission from the Dean of Women to live elsewhere. This permission must be obtained from the Dean of Women previous to registration.

The expenses of living for each student in the dormitories are as follows:

Room deposit	$ 3.00
Room rent for each term—	
Single room	18.00
Double room	9.00
Board per week, payable monthly in advance	4.50
Incidentals, such as laundry fee, electric iron fee, etc., for each term	2.00

The room deposit of $3.00 must be sent to the Registrar at the time of application for a room. When the student withdraws from College, this deposit will be refunded, upon presentation of the receipt, if no damage has been done to the room or furnishings.

Women students are not expected to arrive in Corvallis until the day the Halls are opened. The dormitories will open for students September 21, 1919, the day preceding the first registration day.

Private Board for Men Students. No dormitory accommodations are available for men students. Board and room may be secured in private families in the city of Corvallis for from $4.00 to $5.50 per week. Good accommodations for self-boarding, or for club-boarding, can also be secured in the city. By clubbing, or renting rooms and boarding themselves, students materially reduce the cost of living. Students, however, will not be permitted to live at places not approved by the Faculty.

PERSONAL EXPENSES

Lists of private boarding places can be secured from the Secretary of the Y. M. C. A. after the student arrives at the College.

The personal expenses of students vary. Many students are able to go through the college year on a comparatively small income. Questions of personal thrift, discrimination in values, and established habits are determining factors here. Men in the R. O. T. C. receive their uniforms from the Government, without cost to themselves. Men are expected to supply themselves with a gymnasium suit and regulation gymnasium shoes. The cost of the gymnasium uniform complete, including shoes, need not exceed $3.75. Women are required to provide themselves with a gymnasium suit, consisting of blouse-waist and bloomers of regulation style, and with regulation gymnasium shoes. Good second-hand uniforms of outgoing girls will be on sale for about $5.00, while new uniforms cost $6.00. These suits should be ordered at the gymnasium office at the time of registration.

COST OF A YEAR IN COLLEGE

One of the most perplexing questions that confronts a prospective student is what the course is going to cost him a year. The necessary cost of a year at the College will vary slightly with

the particular course pursued by the student. In general, it may be said that the necessary cost per annum, exclusive of the three personal items of clothing, carfare, and amusements, averages about $300. An estimate of this average cost for the main expense items is given below. The cost for room and board is estimated at a safe average price. The board and room items are sometimes slightly reduced, where two students occupy the same room or where boarding clubs are economically managed.

Registration fee	$ 5.00
Incidental (Student) fee	10.00
Laboratory fees and deposits (average)	24.00
Textbooks and supplies	26.00
Board (for eight months)	*160.00-$250.00
Room rent (nine months)	36.00

The cost of the gymnasium suit and shoes should be added. Uniforms, however, as already indicated, should serve for more than one year. Personal expenses such as clothing, railroad fare, laundry, etc., vary greatly with the individual.

It is not recommended that any student come to the College without sufficient funds available to purchase his books and college stationery for one entire term, pay his first month's board and room rent in advance, and pay his first term entrance fees. For the average student, this initial outlay will be approximately $70.00, the balance of the annual expenses being distributed about evenly throughout the remaining months of the college year.

Persons desiring more detailed information on the question of expenses for students in various departments should write to the Registrar, Corvallis, Oregon, for a bulletin on "Student Expenses."

SELF-SUPPORT

A considerable number of students manage, in one way or another, to earn the whole or a part of their expenses while attending the College. Such opportunities occur in the line of office and laboratory assistance, personal services of numerous kinds, the management of various student enterprises, agencies for laundries, etc.

---

* On account of Christmas and other vacations which most students spend at home, the cost of board is estimated for eight months only.

The Student Employment Bureau in charge of the Young Men's Christian Association, registers without charge men who apply for employment. It is the purpose of the Bureau to try to supply work, regular or occasional, to all who need it. In general, the demand for work on the part of students exceeds the supply that the Bureau has available; therefore 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. The applications received during summer will be given first attention; but no student should expect to be able to secure employment by correspondence.

2. There is a constant over-supply of those wishing to do teaching and clerical work. None but those having superior qualifications and experience are likely to secure employment the first term.

3. There is a considerable demand for efficient stenographers; also for men and especially women students who can do domestic labor of any kind; board and room rent may be earned by table service, dish washing, general housework, house cleaning, gardening, etc.

4. Students who can do any kind of domestic or manual labor well, and who have thoroughly good health, can earn their board by three hours' work a day, or board and room by four hours' work a day. But no student should come to the College without resources sufficient for the expenses of one term. (See "Personal Expenses.") Work of any kind is much more readily secured after the student has had opportunity of becoming familiar with local conditions.

5. No student should come expecting to earn money if he can do nothing well; skill is essential, as competition is quite as severe in the College community as elsewhere.

6. Opportunities for earning money during the summer vacations can usually be counted on, the demand for forest rangers, for field workers in engineering and mining, for skilled workmen in engineering shops, factories, canneries, and hop-yards, and for horticultural, farm, and forestry laborers, being most constant.

Upon arrival at the College, men students should report for information to the Information Bureau of the Young Men's Christian Association. Women students should report to the Dean of Women.

Women students desiring work in the Dormitories should apply early to the Housekeeper of the Women's Dormitories. The Dean of Women will be very glad to give any information to parents and prospective students concerning any matter of interest to women who are planning to enter the College.

HEALTH SERVICE

The College Health Service, inaugurated in 1916, is a department maintained with the aim of promoting the health of all the students. This aim is sought through medical examination, through consultation during office hours, through attendance of the Medical Adviser upon those in hospital and those ill at their residences, through sanitary inspection, and through supervision in case of epidemics. The services of the department, except in so far as the welfare of the College community may require, are not imposed upon any student or group of students. They are available, however, to all students who seek them voluntarily.

The department staff comprises a regular full-time physician, the Medical Adviser, who has his headquarters at the Health Service building; and a resident graduate nurse, who is in attendance at the same building.

The Health Service is maintained by funds derived from regular student fees, twenty-five percent of such fees being devoted to this purpose. The Medical Adviser may be consulted during office hours by any student. He gives medical examinations by appointment, and medical advice and attention to those who are ill. He is in attendance at all important athletic events on the campus to render aid in case of emergencies. He authenticates excuses for absence from College work because of illness.

Patients who require hospital service will be attended, on request, by the Medical Adviser, as in other cases of illness; but will be responsible for all hospital fees. Patients requiring X-ray examinations of the Health Service will be responsible also for the cost of the X-ray pictures.

LOAN FUNDS

Student Loan Fund. Through the liberality of friends of the Oregon Agricultural College and through the accumulation of interest on loans, an irreducible student loan fund aggregating

$8,512.28 (May 1, 1919), has been established. 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."

The fund consists of the following contributions:

1. One thousand dollars ($1,000) from Hon. R. A. Booth of Eugene, restricted to students studying:

(a) Agriculture in its various phases, with a view to becoming producers from the soil.

(b) Such branches of mechanics as properly relate to agriculture.

(c) Home Economics.

2. Five hundred dollars ($500) known as the Ashby Pierce Student Loan Fund.

3. One thousand dollars ($1,000) from the Domestic Science Dining Room at the Panama-Pacific International Exposition, restricted to the use of women students.

4. Four thousand six hundred dollars ($4,600), without restriction, from accumulated interest and from various College organizations, such as Folk Club, Philadelphian and Feronian Literary societies, the Barometer, the Oregon Countryman, the Cosmopolitan Club, the Faculty, the Alumni, the Christian Associations, the Winter Short Course students of 1914, the Graduating Class of 1915, Chapter AL of P. E. O., Portland, and by various individuals including Mrs. Clara H. Waldo, Portland; Hon. Thomas Kay, Salem; Hon. James Withycombe; and W. D. Wheelwright.

L. J. Simpson Scholarship Loan Fund. The College has received a gift of $2,000 from Mr. L. J. Simpson of North Bend, Oregon, whereby five annual scholarship loans of $100 each, continuing throughout the four years of the student's college course, will be awarded to worthy students whose needs justify the awards. The administration of the L. J. Simpson Scholarship Loan Fund is in the hands of the regular Student Loan Fund Committee, to whom applications should be made.

The J. T. Apperson Agricultural College Educational Fund. By the will of the late Hon. J. T. Apperson, Regent of the College since its foundation, a fund amounting to between twenty-five and forty thousand dollars, 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 Agricultural College." The income from this estate is to be loaned 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.

PRIZE FUNDS

The Clara H. Waldo Prize of one hundred dollars is an award annually made in the proportions of forty, thirty, twenty, and ten dollars respectively, to the woman of highest standing registered as a regular student in one of the degree curricula in the senior, junior, sophomore, and freshman year.

The A. J. Johnson Prize of one hundred forty dollars is an award to be made annually beginning with the year 1919-20 in the proportions of fifty, forty, thirty, and twenty dollars respectively, to the man of highest standing registered as a regular student in one of the degree curricula in the senior, junior, sophomore, and freshman year.

In the distribution of these prizes, the committees having charge of the awards are guided by the following points:

(a) Proficiency in scholarship.
(b) Success in student activities.
(c) Qualities of manhood or womanhood.
(d) Qualities of leadership.

THE FAWCETT CUP

A loving cup, the gift of Mrs. Mary E. Fawcett, Dean of Women, is awarded each year to some one of the women's organizations of the College as a prize for the particular number of the Girls' Stunt Show which, in the estimation of three judges, possesses in the highest degree the qualities of simplicity, promptness, brevity, originality, attractiveness, and finish. The entertainment is made up of individual stunts contributed by the women's organizations of the College, whose presidents elect a manager of the show. The proceeds are awarded chiefly to the Y. W. C. A., though any funds in excess of two hundred dollars annually may be diverted, by vote of the executive committee, either wholly or in part, to some other worthy enterprise that affects the interests of all the College women.

ADMISSION TO THE COLLEGE

A. ADMISSION AS REGULAR STUDENTS

In order to be admitted to the Oregon Agricultural College a student must be of good moral character and must present evidence of preparation sufficient to pursue profitably the curriculum for which he desires to register. Such evidence of preparation must be a certificate on a blank secured from the Registrar of the College and signed by an official of the school which the student has attended, stating the nature and amount of the work completed. When a student cannot present such certificate he must take the regular entrance examinations of the College, held at the beginning of each term. These examinations are based in general upon the outlines in "Courses of Study for the High Schools of Oregon" issued by the State Department of Education, Salem, Oregon.

The specific requirements for entrance to the different courses at the College are as follows:

Vocational Curricula. For admission to the vocational curricula certified evidence is required of the completion of the eighth-grade course of study in the public schools, or its equivalent. For admission to the vocational curricula in Agriculture, Dairying, Tractors, Forestry, Home Economics, and Commerce, applicants must be at least 18 years of age. For admission to the vocational curricula in Mechanic Arts and Auto Mechanics applicants must be at least 16 years of age. Applicants who have not completed the eighth-grade course of study, but who are 21 years of age or over, may be admitted to any of these vocational curricula at the discretion of the dean of the school in which the work is to be carried on. For admission to the vocational curriculum in Pharmacy, applicants must be at least 18 years of age and have completed two years of high school work, or its equivalent. For statements of the length and character of the vocational curricula, see the sections of this catalogue devoted to the respective schools.

Degree Curricula. Students 16 years of age or over, who have completed 15 units of high-school work in a high school recognized as standard, will be admitted to the degree curricula on presentation of a signed statement of the principal, showing work completed. It is requested that this statement be made on the "Cer-

tificate of Record" blank of the Oregon Agricultural College. Copies of this blank will be sent by the Registrar upon application of either student or principal. The certificate, properly signed, should be filed with the Registrar of the College on or before September 17, 1919. Certificates will not be rejected at a later date, but acknowledgment of the receipt of such certificate will be made by the Registrar up to and including September 17 only. Students sending certificates at a later date are likely to be delayed in completing registration.

The 15 units of work presented for entrance must include the following:

English	3 units
Elementary Algebra	1 unit*
Plane Geometry	1 unit**

* Higher Algebra (½ unit) is required in addition for admission to the schools of Engineering and Forestry.

** Solid Geometry (½ unit) is required in addition for admission to the School of Engineering.

Enough additional units, selected from the subjects listed in "Courses of Study for the High Schools of Oregon," must be presented to make a total of fifteen units. If the matriculate lacks any of the required units he must carry in College enough additional work to cover the courses lacking in his secondary credits. A student who lacks not more than two of the required entrance units may be admitted as a conditioned freshman. A unit is defined as one high-school subject carried for five 45-minute periods a week throughout the school year.

While Physics is not prescribed as an entrance requirement in Agriculture and Engineering, students who are preparing to enter the schools of Agriculture or Engineering are urged to take a year's work in high-school Physics where the work is available. While History and Foreign Languages are not prescribed by the College as entrance requirements, prospective students are urged to pursue these subjects in the high school.

Graduate Curricula. Graduates of four-year curricula in the Oregon Agricultural College or in other colleges of equal rank are eligible for registration as graduate students. Prospective graduate students are required to present credentials to the Registrar as specified under "Admission from Other Colleges."

B. ADMISSION AS SPECIAL AND OPTIONAL STUDENTS

Special Students. Students who present satisfactory evidence of suitable preparation for the studies they desire, who are 18 years of age or over, may be admitted as special students, provided they have never applied for admission and been rejected. Special students may later be graduated in any of the curricula, provided they complete the required work. Special students are expected to select their studies from courses open to freshmen. Registration of special students for courses to which only advanced students are regularly admitted is permissible only in cases where special preparation or special necessity for such courses exists.

Optional Students. Students who present satisfactory evidence of meeting all the entrance requirements for the freshman class, who are of mature years, may be admitted as optional students, provided they furnish satisfactory evidence that they are unable, because of poor health or outside business or professional duties, to carry a normal amount of work.

C. ADMISSION TO ADVANCED STANDING

Advanced Standing. Students matriculating in the degree curricula with more than the number of credits required for entrance to the freshman class will be given advanced standing for such credits as represent work beyond the full four years of high-school—that is, work taken in the graduate year—and are equivalent to the requirements of the curriculum in which the student matriculates. No credit is allowed for any Science or Foreign Language carried for less than one full year.

Admission From Other Colleges. Full credit is given for regular college work completed in other colleges or universities recognized as standard, in so far as such work is equivalent to the requirements of the curriculum in which the student wishes to matriculate. A student who has attended another college or university and desires to enter the Oregon Agricultural College should file with the Registrar, on or before September 17, 1919, an official certificate from the institution from which he wishes to transfer, giving evidence of: (1) his honorable dismissal; (2) a detailed

statement of the entrance credits presented at the time of his matriculation at the other college; (3) a detailed statement of the work pursued while in attendance at the other college; and (4) a marked copy of the catalogue of the institution showing by conspicuous markings the courses which he completed.

ACCREDITED SCHOOLS

Graduates of the following Oregon high schools will be admitted to the Oregon Agricultural College without condition or examination, provided their credentials include the minimum entrance requirements of 3 units of English and 2 (2½ or 3 in Engineering and Forestry) units of Mathematics.

Airlie
Albany
Alpine
Alsea
Amity
Arlington
Ashland
Astoria
Athena
Aumsville
Aurora
Baker
Ballston
Bandon
Bay City
Beaverton
Bellfountain
(Monroe P. O.)
Bend
Bethel
Bonanza
Brookings
Brownsville
Burns
Butte Falls
Canby
Canyon City
Carlton
Central Point
Clatskanie
Cloverdale
Coburg
Colton
Condon
Coos River
Coquille
Corbett
Corvallis
Cottage Grove
Cove
Crabtree
Creswell
Crow
Culver
Dallas
Dayton
Dayville
Dorena
Drain
Dufur
Dundee
Echo
Elgin
Elmira
Enterprise
Estacada
Eugene
Falls City
Ferndale
Florence
Forest Grove
Fort Klamath
Fossil
Gaston
Glendale
Glide
Gold Beach
Gold Hill
Grants Pass
Grass Valley
Gresham
Haines
Halfway
Halsey
Harrisburg
Helix
Heppner
Hermiston
Hillsboro
Hood River
Hubbard
Hugo
Huntington
Imbler

Independence
Ione
Irving
Jefferson
John Day
Joseph
Junction City
Kent
Kerby
Kings Valley
Klamath Falls
Knappa
La Grande
Lakeview
Lebanon
Lexington
Long Creek
Lorane
Lostine
Madras
Mapleton
Marcola
Marshfield
McMinnville
Medford
Merlin
Merrill
Mill City
Milton-Freewater
Milwaukie
Molalla
Monmouth
Monroe
Monument
Moro
Mt. Vernon
Muddy Creek
Myrtle Creek
Myrtle Point
Nehalem
Newberg
Newport
North Bend
North Powder
Nyssa
Oakland
Odell
(Hood River
P. O. R. 3.)
Ontario
Oregon City
Orenco
Parkrose
Pendleton
Perrydale
Phoenix
Philomath
Pleasant Hill
Portland
Powers
Prairie City
Prineville
Rainier
Redmond
Richland
Riddle
Rogue River
Roseburg
Salem
Sandy
Santa Clara
(Eugene P. O.)
Scappoose
Scio
Scotts Mills
Seaside
Shedd
Sheridan
Silver Lake
Silverton
Springfield
South Brownsville
Stanfield
Stayton
St. Helens
Sumpter
Sutherlin
Sweet Home
Tangent
The Dalles
Thurston
(Springfield
P. O. R. 2.)
Tillamook
Toledo
Tualatin
Turner
Umapine
Union
Vale
Vernonia
Waldport
Walker
Wallowa
Walterville
Warrenton
Wasco
Weston
Wilbur
Willamette
Willamina
Woodburn
Yamhill
Yoncalla

DEGREES AND CERTIFICATES

The Oregon Agricultural College confers the following degrees: B. S., M. S., M. E., C. E., E. E., Ch. E., Ph. G.

Certificates are granted those students who complete the Vocational Curricula in Agriculture, Dairying, Home Economics, Mechanic Arts, Commerce, or Pharmacy.

The degree of Graduate in Pharmacy is granted to those students in Pharmacy who complete specified work meeting the requirements of the American Conference of Pharmaceutical Faculties.

REQUIREMENTS FOR THE BACHELOR'S DEGREE

The degree of Bachelor of Science in Agriculture, in Forestry, in Logging Engineering, in Home Economics, in Electrical Engineering, in Civil Engineering, in Mechanical Engineering, in Mining Engineering, in Chemical Engineering, in Commerce, in Pharmacy, and in Industrial Arts, is conferred upon those who have satisfactorily completed the respective four-year curricula, each of which in the aggregate comprises 192 credits of College work. Men must have 9 credits additional in Military Science and Tactics. A graduate in any of the curricula receives the bachelor's degree in any other curriculum by completing the studies required in that curriculum.

REQUIREMENTS FOR THE HIGHER DEGREES

Graduate work is done in the several departments of the College under the general supervision of a standing committee of the Faculty known as the Committee on Graduate Students and Advanced Degrees. A complete outline of the work to be pursued by the student, meeting the College requirements for the particular degrees sought, must be approved in advance by his major professor and the Committee on Graduate Students and Advanced Degrees. Candidates for any one of the higher degrees are required to complete a certain minimum of resident work, to prepare a suitable thesis, and to pass an oral examination.

The resident work may be completed in a single year by a student who devotes full time to his studies; it consists of a minimum of 48 credits, including the preparation of the thesis. Graduate credit from other institutions will not be accepted as reducing this minimum. From 24 to 36 of these credits must be devoted to the thesis and to allied subjects in the same department, and will constitute the candidate's major. From 12 to 24 credits must be selected from other departments of the College and will constitute the minor. Undergraduate work may, at the discretion of the committee, be taken as part of the minor, but when so taken, the number of credits allowed for any course will be reduced to two-thirds of the number listed in the catalogue, the assumption being that the candidate can, in work of that grade, accomplish as much in two hours as the average undergraduate in three. No course which is contained in the curriculum of any high school of the State of Oregon, nor any course regularly covered in the freshman and sophomore years of this College shall be allowed as credit toward an advanced degree; and no credit shall be allowed toward the major for any regular undergraduate course. All graduate students taking regularly announced courses must attend the examinations given as part of such courses.

The thesis must embody the results of investigation, though not necessarily original research, and a typewritten copy of the thesis, prepared according to the specifications of the committee, must be deposited with the chairman of the committee not later than two weeks prior to the date set for Commencement of the year in which the degree is desired.

After the thesis has been deposited, the chairman appoints a special examining committee and sets a date for the oral examination. This special committee consists of: (1) the one or more professors in charge of the major; (2) the one or more professors in charge of the minor; and (3) one or more members of the Committee on Graduate Students and Advanced Degrees. The report of this committee is presented to the College Council by the chairman of the Committee on Graduate Students and Advanced Degrees. The chairman will deposit the thesis of successful students with the Librarian as soon as possible after the oral examination.

Higher degrees are conferred only at the regular commencement exercises, but the committee may under exceptional circumstances allow the candidate to be absent from such exercises.

Graduate students pay the same entrance, incidental, diploma, and binding fees as undergraduates. Laboratory fees are in each case determined by the head of the department concerned, and must be paid at the beginning of the term in which the laboratory work is done.

REGISTRATION

All candidates for admission should file with the Registrar a certificate of their preparatory record on or before September 17, 1919. Certificates of preparatory work will not be rejected at a later date, but applicants cannot expect to receive formal acknowledgment of their receipt by the Registrar. Applicants sending in their certificates late may be delayed at registration time. Blank forms for such records may be secured from the Registrar. Such candidates should present themselves for registration at the College on September 22 or 23, 1919. Registration at a later date will be permitted only on presentation of a satisfactory reason for the delay.

Students who have not before registered at the College are advised to reach Corvallis not later than September 20, 1919, in order that they may secure a boarding and rooming place before the first day of registration.

Late Registration. Every student not registering on the regularly scheduled registration days of any term will be required to pay late registration fees as follows: $1.00 for the first day late; $1.00 for each additional day up to a total of $5.00. Five dollars is the maximum fee. In all cases the fees will be collected as are all other fees, when the student registers.

Changes in Registration. Except in cases where the change has been initiated by the instructor in charge or by the dean, a fee of fifty cents is charged for each change in registration after ten days have elapsed from the original registration .

RESIDENT REQUIREMENTS

Every student is expected to obtain from the Registrar's office a copy of the Students' Handbook of Rules and Regulations, giving the routine of registration, the marking system, academic stand-

ards, regulations governing student activities, organizations, fraternities and sororities, etc. Students are held responsible for familiarity with the regulations in this handbook.

The College year is divided into three terms of approximately 12 weeks each. The terms in 1919-20 begin on September 22, January 2, and March 29, respectively.

A term credit or credit hour is presumed to represent three hours of the student's time each week for one term. This time may be assigned to work in class room, laboratory, or outside preparation.

Normal work is work leading to 16½ credits a term. No regular student is permitted to register for work leading to more than 18½ credits in any term without special permission from his dean, and not more than 20½ credits a term may be recorded for any student.

Military Science and Tactics is required of all men students, three credits each year being granted for the required work of the freshman and sophomore years, and six credits for the required work of the junior year. Seniors who are members of the R. O. T. C. Advanced Corps receive six additional credits for the elective military work of the senior year. Students over 30 years of age, those who are physically disqualified, and those who have served six months or over in the U. S. Army or Navy (except the S. A. T. C.) or who have received commissions in the Army or Navy, may be given credit in the required military work on recommendation of the faculty committee appointed to pass upon advanced credit in Military Science and Tactics.

Physical Education is required of all students during the freshman and sophomore years and of women during the two following years also, unless they are excused on recommendation of the Professor of Physical Education for Women.

A physical examination is required of all students entering the College. 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.

Required Subjects. Every student before graduation from any four-year curriculum must have completed the following: English, nine credits; Economics, three credits; Political Science, three credits; Business Administration, three credits; Natural or Physical Science, nine credits. If a modern language is elected, the student will be expected to continue this through two years, though credit will be given for any work completed.

Maximum Number of Laboratory Hours. During the freshman and sophomore years the total number of laboratory hours for any student shall not exceed twenty-one hours a week for any term, on the basis of regular or normal course credits. These maxima do not include the time spent in military drill or physical education.

Credit Requirements for a Minor. As a rule students major in some particular school, and minor (or lay secondary emphasis) in some department of the same or another school. To fulfill the credit requirements for such a minor the student must complete at least eighteen credits of work in the particular school or department selected.

Numbering of Courses. Courses in degree curricula are designated by numbers of three digits in which the left-hand digit represents usually the year (as first, second, third, or fourth) in which the course is normally pursued; the middle digit represents the group of related courses in the department to which the course belongs; and the right-hand digit represents the sequence of courses in cases where courses normally follow each other in succeeding terms. Courses in vocational curricula are numbered with two digits, the first generally representing the year in which the course is pursued, the second the sequence of the course.

SCHOOLS AND DEPARTMENTS

SCHOOL OF AGRICULTURE

WILLIAM JASPER KERR, D. Sc., President of the College

ARTHUR BURTON CORDLEY, D. Sc., Dean of the School of Agriculture; Director of the Agricultural Experiment Station

CLAUDE ISAAC LEWIS, M. S. A., Professor of Horticulture; Vice-Director and Chief in Horticulture, Experiment Station

JOHN MYERS CLIFFORD, Secretary to the Dean and Director

ARTHUR GEORGE BOUQUET, B. S., Professor of Vegetable Gardening; Vegetable Gardening Specialist, Experiment Station

PHILIP MARTIN BRANDT, B. S., A. M., Professor of Dairy Husbandry; Chief in Dairy Husbandry, Experiment Station

CHARLES STOCKTON BREWSTER, M. S., Assistant Professor of Poultry Husbandry, Extension Specialist

WALTER SHELDON BROWN, A. B., M. S., Professor of Pomology

VINCENT DICK CHAPPELL, M. S., Assistant Professor of Dairy Husbandry

JAMES DRYDEN, Professor of Poultry Husbandry; Chief in Poultry Husbandry, Experiment Station

SOLOMON FINE, M. S., M. A., Instructor in Dairy Husbandry

EDWARD BLODGETT FITTS, Associate Professor of Animal Husbandry; Extension Specialist

EZRA JAMES FJELDSTED, B. S., Assistant Professor of Animal Husbandry, Extension Specialist

WILLIAM JAMES GILMORE, B. S. A. E., Professor of Farm Mechanics

EDWARD MARIS HARVEY, Ph. D., Professor of Research in Horticulture

GEORGE ROBERT HYSLOP, B. S., Professor of Farm Crops; Chief in Farm Crops, Experiment Station

ANTON EVERETT JENSEN, Instructor in Farm Mechanics

WILLIAM WATERS JOHNSTON, B. S., Instructor in Soils; Field Agent in Soils

FRED MILLER, D. V. M., Instructor in Veterinary Medicine

ANDREW EDWARD MURNEEK, B. S., M. A., Assistant Professor of Horticulture

ORAN MILTON NELSON, B. S., Associate Professor of Animal Husbandry; Associate in Animal Husbandry, Experiment Station

ALFRED WEAVER OLIVER, B. S., Instructor in Animal Husbandry

ARTHUR LEE PECK, B. S., Professor of Landscape Gardening and Floriculture; Superintendent of Campus and Greenhouses

ERMINE LAWRENCE POTTER, B. S., Professor of Animal Husbandry; Chief in Animal Hubandry, Experiment Station

WILBUR LOUIS POWERS, M. S., Professor of Soils; Chief in Soils, Experiment Station

DALE EVERETT RICHARDS, B. S., Assistant Professor of Animal Husbandry

CHARLES VLADIS RUZEK, B. S. A., Professor of Soil Fertility; Assistant in Soils, Experiment Station

AGNES RYDER, U. S. Department of Agriculture, Seed Analyst

HARRY AUGUST SCHOTH, M. S., U. S. Department of Agriculture, Forage Specialist

CARL EPHRAIM SCHUSTER, B. S. A., M. S. A., Extension Horticulturist

HENRY DESBOROUGH SCUDDER, B. S., Professor of Farm Management; Chief in Farm Management, Experiment Station

BENNETT THOMAS SIMMS, D. V. M., Professor of Veterinary Medicine; Chief in Veterinary Medicine, Experiment Station

WILLIAM ANDERSON SMART, B. S. A., Crop Pest Assistant

EDWARD FRITCHOFF TORGERSON, B. S., Assistant Professor of Soils

EDGAR LEROY WESTOVER, B. S., Field Dairyman, Extension Service

ERNEST HERMAN WIEGAND, B. S. A., Assistant Professor of Horticultural Products

LYLE PORTER WILCOX, B. S. A., Crop Pest Assistant

CLAIR WILKES, B. S. A., Instructor in Farm Management

FRANKLIN SCOTT WILKINS, M. S., Assistant Professor of Farm Crops

LEON WALTON WING, B. S., M. A., Instructor in Dairy Husbandry

.....Instructor in Dairy Husbandry

.....Instructor in Farm Crops

.....Instructor in Farm Management

.....Instructor in Horticulture

WILLIAM SAMUEL AVERILL, B. S., Foreman in Farm Crops

JOHN SAMUEL WEIMAN, B. S., Fellow in Horticulture

.....Fellow in Animal Husbandry

.....Fellow in Farm Crops

.....Fellow in Farm Management

The School of Agriculture offers a four-year curriculum leading to the degree of Bachelor of Science; graduate curricula leading to the degree of Master of Science; one-year vocational curricula in General Agriculture and Horticulture, leading to certificates, and various short courses of one to twelve weeks duration.

The Baccalaureate Degree. The baccalaureate degree curriculum is offered only for those who have completed the four-year course of study as prescribed for standard Oregon state high schools, or its equivalent. The aim of the work in Agriculture is to train young men to become successful farmers, dairymen, stockmen, poultrymen, and fruit growers; to equip them to become

efficient managers of orchard and ranch properties and of agricultural cooperative organizations; to prepare them to become specialists in the service of the United States Department of Agriculture, or in some branch of technical work in agricultural colleges, experiment stations, or extension services; or to prepare them for service as teachers of agriculture in public schools.

Requirements for Graduation. The completion of 201 term credits by men and 192 by women is required for graduation. Work the first two years is prescribed, except that a three-credit option is allowed each term of the sophomore year. Students who expect to specialize in Landscape Gardening will pursue the curriculum outlined on pages 83-85; all others will pursue the one outlined on pages 78-83. During the junior and senior years opportunity is offered for specialization in Animal Husbandry, Agricultural Chemistry, Agricultural Education, Farm Mechanics, Bacteriology, Botany and Plant Pathology, Dairy Husbandry, Entomology, Farm Crops, Farm Management, Horticulture, Poultry Husbandry, Rural Architecture, Rural Economics, Sociology, Soils, Veterinary Medicine, or Zoology. Of the 102 junior and senior credits necessary for graduation 37 are prescribed, 27 are restricted options, and 38 are free electives. See pages 81-85.

In addition to the prescribed work of the first two years each candidate for graduation must have completed:

(a) A major of eighteen or more credits in one of the above-named departments, as selected at the beginning of the junior year. The courses for the major, together with correlated subjects in other departments, must be selected with the advice and consent of the head of the department and the approval of the Dean.

(b) At least fifty-four additional credits from any of the courses given in the School of Agriculture and at least six credits in Military Science and Tactics.

(c) Not less than twenty-four credits from among such subjects as English (including Public Speaking), Economics, Sociology, Political Science, and Business Administration (of which 12 credits are prescribed, see pages 81, 84, 85), or in Journalism, Psychol-

ogy, Education, Modern Language, Mathematics, or Military Science and Tactics.*

Graduate Work. Opportunities are provided in each of the departments of the School of Agriculture for graduates of this College, or of other institutions of equal rank, to do graduate work leading to the degree of Master of Science. The requirements for this degree are explained in full on pages 69-71.

Vocational Curricula. The vocational curricula are not preparatory to degree curricula. They are provided for those who have been unable to complete a high school course and for farmers or prospective farmers, young or old, who may desire a short intensive course of instruction in agriculture. The only requirements are that the applicant must be at least eighteen years of age, and must have completed the eighth grade of the public schools, or by practical experience have acquired the ability to carry the work successfully. Courses in General Agriculture, Horticulture, Dairy Manufactures, and Farm Mechanics are offered. In all vocational curricula each term's work is complete in itself. The student may, therefore, attend for twelve, twenty-four, or thirty-six weeks. Certificates are awarded to students who complete the one-year courses.

* Twelve credits in Military Science and Tactics are required for graduation. Of these, three credits each year are taken in the freshman and sophomore years and six credits are taken in the junior year. If the student elects to enroll in the Reserve Officers Training Corps, six additional credits in Military Science and Tactics are required in the senior year.

DEGREE CURRICULUM IN AGRICULTURE

Freshman Year

Section I

	Term 1st	2d	3d
English Composition, Eng 101, 102, 103	3	3	3
General Chemistry, Chem 101, 102, 103	3	3	3
General Botany, Bot 101, 102	4	4	
Principles of Zoology, Zool 130			5
Library Practice, Lib 100			1
Crop Production, FC 100	5		
Elements of Horticulture, Hort 100		5	
Stock Judging, AH 111			3
Gymnasium, PhEd 111, 112, 113	½	½	½
* Military Science and Tactics	1	1	1
	16½	16½	16½

Section II

English Composition, Eng 101, 102, 103	3	3	3
General Chemistry, Chem 101, 102, 103	3	3	3
General Botany, Bot 101, 102		4	4
Principles of Zoology, Zool 130	5		
Library Practice, Lib 100	1		
Crop Production, FC 100		5	
Elements of Horticulture, Hort 100			5
Stock Judging, AH 111	3		
Gymnasium, PhEd 111, 112, 113	½	½	½
* Military Science and Tactics	1	1	1
	16½	16½	16½

* Students have the option of entering the infantry unit or the field artillery unit, or the cavalry unit if established.

Section III

	Term		
	1st	2d	3d
English Composition, Eng 101, 102, 103	3	3	3
General Chemistry, Chem 101, 102, 103	3	3	3
General Botany, Bot 101, 102	4		4
Principles of Zoology, Zool 130		5	
Library Practice, Lib 100		1	
Crop Production, FC 100			5
Elements of Horticulture, Hort 100	5		
Stock Judging, AH 111		3	
Gymnasium, PhEd 111, 112, 113	½	½	½
* Military Science and Tactics	1	1	1
	16½	16½	16½

Sophomore Year

Section I

Chemistry, Chem 247, 224, 251	5	5	5
Soils, Drainage and Irrigation, Soils 201, 202, 203	3	3	3
Bacteriology, Bact 201	4		
Live Stock Management, AH 221		4	
Elements of Dairying, DH 200			4
Optional	3	3	3
Gymnasium, PhEd 211, 212, 213	½	½	½
Military Science and Tactics	1	1	1
	16½	16½	16½

Section II

Chemistry, Chem 247, 224, 251	5	5	5
Soils, Drainage and Irrigation, Soils 201, 202, 203	3	3	3
Bacteriology, Bact 201		4	
Live Stock Management, AH 221			4
Elements of Dairying, DH 200	4		
Optional	3	3	3
Gymnasium, PhEd 211, 212, 213	½	½	½
Military Science and Tactics	1	1	1
	16½	16½	16½

* Students have the option of entering the infantry unit or the field artillery unit, or the cavalry unit if established.

Section III

	Term		
	1st	2d	3d
Chemistry, Chem 247, 224, 251	5	5	5
Soils, Drainage and Irrigation, Soils 201, 202, 203	3	3	3
Bacteriology, Bact 201			4
Live Stock Management, AH 221	4		
Elements of Dairying, DH 200		4	
Optional	3	3	3
Gymnasium, PhEd 211, 212, 213	½	½	½
Military Science and Tactics	1	1	1
	16½	16½	16½

* Sophomore Options

Advanced Testing, DH 204			3
Breeds of Live Stock, AH 231, 232	3	3	
Farm Mechanics, FMe 111, 112, 131	3	3	3
Landscape Gardening, Hort 231	3		
Practical Poultry Keeping, PH 201			3
Plant Propagation and Greenhouse Practice Hort 241		3	
Vegetable Growing, Hort 221			3
Forage Crops and Root Crops, FC 231			3
** Physics, Phys 201, 202	3	3	
General Geology, Geol 202		3	
Bacteriology, Botany, Entomology or Zoology	3	3	3

* No sophomore optional course will be given to fewer than five students.

** Required of students who do not present credit for at least one year's work in Physics.

Junior Year

	Term		
	1st	2d	3d
Agricultural Economics, ES 362		3	
Farm Accounting and Business Management, BA 361	3		
Farm Management, FM 302		4	
Genetics, Zool 351			3
Economic Entomology, Ent 301	4		
* or Comparative Anatomy I, VetMed 301 (3 credits)			
Plant Pathology, Bot 311,		4	
* or Comparative Anatomy II, Vet Med 302 (3 credits)			
Plant Physiology, Bot 321,			4
* or Comparative Physiology, VetMed 321 (3 credits)			
Major Options	4	4	4
Elective	4		4
Military Science and Tactics	2	2	2
	17	17	17

* If this course is elected, one credit should be added to major options

Junior Options

	Term 1st	2d	3d
Practical Pomology and Orchard Practice, Hort 311, 314	4		
Feeds and Feeding, AH 351, 352	5	5	
Irrigation Farming, Soils 311	3		
Poultry Breeding, Breeds and Judging, PH 311	4		
Cereal Production, FC 311	5		
Pruning and Orchard Practice, Hort 313, 315		4	
Incubation and Brooding, PH 321		4	
Western Land and Water Law, Soils 314		3	
Crop Improvement, FC 341			5
History and Literature of Horticulture and Orchard Practice, Hort 361, 316			4
Poultry House Design and Construction, PA 331			4
Land Drainage, Soils 318			3
Farm Organization, FM 311	3		
Semi-arid Farm Management, FM 312		2	
Potato Growing, FC 314		2	
Bacteriology, Botany and Plant Pathology, Chemistry, Entomology or Zoology	5	5	5
Enterprise Costs and Profits, FM 333			3
Advanced Testing, DH 204	3		3
Market Milk, DH 301			3
Commercial Buttermaking, DH 302, 303	3	3	
Judging Dairy Cattle, DH 351			3
Dairy Herd Management, DH 352		3	

Senior Year

Practical Public Speaking, Eng 251	3		
National Government, ES 301	3		
Major and Minor Options	5	5	5
Elective	6	12	12
	17	17	17

Senior Options	Term 1st	2d	3d
Advanced Judging, AH 411	4		
Agrostology, FC 431	5		
Systematic Pomology, Hort 412	5		
Poultry Feeding, PH 441	4		
Soil Physics, Soils 421	5		
Factory Organization and Management, DH 403	3		
Dairy Judging Team, DH 451	1		
Animal Breeding, AH 441		3	
Crop Inspection, FC 421		5	
Commercial Pomology, Hort 414		5	
Marketing Poultry Products, PH 451		4	
Soil Fertility, Soils 424		5	
Cheesemaking, DH 401		7	
Ice-cream and Condensed Milk, DH 403		4	
Breeding Dairy Cattle, DH 452		3	
Live Stock Economics, AH 461			3
Crop Efficiency, FC 411			5
Advanced Pomology, Hort 413			3
Commercial Poultry Practice, PH 461			4
Soil Surveying and Management, Soils 427, 428			5
Advanced Farm Management, FM 441, 442, 443	3-5	3-5	3-5
Bacteriology, Botany, Bot 411, and Plant Pathology, Chemistry, Entomology, or Zoology	5	5	5
Advanced Testing, DH 204	3		3

LANDSCAPE GARDENING

Freshman Year

English (Eng 101, 102, 103)	3	3	3
Plane Surveying (CE 121, 122)	5	4	
Modern Language	3	3	3
Botany (Bot 101)		4	4
Horticulture (Hort 100)			5
Trigonometry (Math 111)	4		
Library Practice (Lib 100)		1	
Gymnasium (PhEd 111, 112, 113)	½	½	½
Military Science and Tactics	1	1	1
	16½	16½	16½

	Term 1st	2d	3d
Sophomore Year			
English	3	3	3
Modern Language	3	3	3
Topographic Surveying (CE 221)	4		
Railroads and Canals (CE 225)		5	
* General Geology (Geol 202)			3
Taxonomy (Bot 331)			4
Roads and Pavements (HE 311)	2		
Pen and Pencil Rendering (A 251)			2
Plant Propagation and Greenhouse Practice (Hort 241)		4	
Landscape Gardening (Hort 231)	3		
Gymnasium (PhEd 211, 212, 213)	½	½	½
Military Science and Tactics	1	1	1
	16½	16½	16½
Junior Year			
Economics (ES 391)			3
Public Speaking (Eng 251, 252)	3	3	
Watercolor Rendering (A 351, 352)		3	3
Plant Materials (Hort 331, 332, 333)	3	3	3
Hist. and Lit. of Landscape Architecture (Hort 337)	3		
Journalism (IJ 200)	3		
Forest Mapping (For 224)			3
Architecture (Arch 311, 312)	3	3	3
Electives		4	
Military Science and Tactics	2	2	2
	17	18	17

* By special arrangement with the School of Mines, Landscape Gardening students are permitted to take Geology 202 and receive full credit without having the prerequisite General Chemistry.

Senior Year

	Term		
	1st	2d	3d
National Government (PS 301)	3		
State and Local Government (PS 302)		3	
Theory and Design (Hort 431, 432)	4	4	
Town Planning (Hort 437)			4
Field Practice (Hort 434, 435)	4		4
Business and Rural Law (PS 163)	3		
Business Management (BA 332)	3		
Electives		10	9
	17	17	17

VOCATIONAL CURRICULUM IN GENERAL AGRICULTURE

	Term		
	1st	2d	3d
Farm Soils, Soils 50	5		
Stock Judging, AH 11		5	
Farm Mechanics, FMe 10			5
General Farm Crops, FC 10	5		
Live Stock Feeding and Management, AH 21		5	
Diseases of Domestic Animals, VetMed 41			5
Plant Disease Control, Bot 11	3		
Farm Management, FM 12		3	
Injurious Insects, Ent 14			3
Business Correspondence, Eng 5	3		
Farm Accounts and Business Methods, BA 61		3	
Practical Farm Drainage, Soils 60			3
Gymnasium	½	½	½
Military Science and Tactics	1	1	1
	17½	17½	17½

Practical Poultry Keeping, PH 201, may be substituted for any other three-credit subject upon the request of at least five students.

VOCATIONAL CURRICULUM IN HORTICULTURE

Farm Soils, Soils 50	5		
Farm Mechanics, FMe 10			5
Farm Accounting, BA 361		3	
Farm Dairying, DH 20	3		
Live Stock Feeding and Management, AH 21		5	
General Farm Crops, FC 11			3
Orchard Management, Hort 11, 12, 13	5	5	5
Vegetable Gardening, Hort 21, 22, 23	3	3	3
Gymnasium	½	½	½
Military Science and Tactics	1	1	1
	17½	17½	17½

VOCATIONAL CURRICULUM IN FARM MECHANICS

Repeated each term

Gas Engines and Tractors, FMe 12	15
Gymnasium	½
Military Science and Tactics	1
	16½

VOCATIONAL CURRICULUM IN DAIRY MANUFACTURES

Given during the second term

	Credits
Buttermaking, DH 11	5
Cheesemaking, DH 12	3
Ice-cream Making, DH 13	2
Factory Management, DH 14	1
Dairy Chemistry, Chem 51	1
Dairy Bacteriology, Bact 11	1
Creamery Accounts, BA 62	1
Creamery Mechanics, FMe 71	1
Creamery Tests, DH 15	1
Military Science and Tactics	1
Gymnasium	½
	17½

ANIMAL HUSBANDRY

The course in Animal Husbandry is planned to fit the student for the actual raising of live stock 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 thoroughly treated and a special effort is made to keep the students 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 live stock; but, on the contrary, to familiarize themselves with crop production, soil fertility, and other phases of agriculture as well as general educational subjects.

Students electing to major in Animal Husbandry 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 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 live stock, barns, and the College stock farms. During the past years the live stock available for illustration and demonstration purposes has been very much improved in numbers and in quality. In addition to the live stock regularly kept on the College farm, much good stock is loaned from time to time by the leading breeders of the State. During the winter, carload lots illustrating the market classes are brought in for demonstration purposes. The department possesses abundant equipment for the conduct of laboratory, lecture, and recitation work.

COURSES

AH 111. **Stock Judging I.** The various types of farm animals are studied by score cards and cooperative methods, and the student is made familiar with the desirable and undesirable types of beef and dairy cattle, sheep, swine, and horses.

Required in Agriculture; freshman year; any term; 3 credits; 1 recitation; 3 two-hour laboratory periods. Fee $0.25. Text: Vaughan, Type and Market Classes of Live Stock. Assistant Professor Richards and Mr. Oliver.

AH 115. **Stock Judging II.** Same as AH 111.

Elective for women; first term every other year; 3 credits; 1 recitation; 3 two-hour laboratory periods. Fee $0.25. Text: Vaughan, Type and Market Classes of Live Stock. Mr. Oliver.

AH 311. **Stock Judging III.** Course in judging of all kinds of stock.

Prerequisite: AH 111. Elective in Animal Husbandry; junior year; third term; 3 credits; 4 two-hour laboratory periods. Fee $0.25. Associate Professor Nelson.

AH 411. **Stock Judging IV.** Practical judging of all kinds of live stock, 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.

Prerequisites: At least four credits in stock judging. Required in Animal Husbandry; senior or graduate year; first term; 4 credits; 5 two-hour laboratory periods. Fee $0.25. Associate Professor Nelson.

AH 221. **Live-Stock Management.** Practical details of the care and management of live stock, stabling, grooming, sanitation, practical feeding, and kindred details of live-stock farming, all with special reference to Oregon conditions.

Required in Agriculture; sophomore year; any term; 4 credits; 3 recitations; 1 two-hour laboratory period. Fee $0.50. Text: Potter, Live Stock Management. Mr. Oliver.

AH 421. **Live-Stock Practice.** Laboratory studies devoted to such work as dipping, dehorning, hoof trimming, shearing, horse training, and other common operations of the stock farm.

Required in Animal Husbandry; senior or graduate year; first term; 1 credit; 1 three-hour laboratory period. (Note—The department reserves the right to limit the number of students in this course.) Fee $0.50. Assistant Professor Richards.

AH 422. **Live-Stock Practice.** A continuation of course 421. Required in Animal Husbandry; senior or graduate year; third term; 2 credits; 2 three-hour laboratory periods. Fee $1.00. Assistant Professor Richards.

AH 231. **Breeds of Live Stock I.** A study of the breeds of horses and beef cattle, their development, breeding, and type.

Prerequisite: AH 111. Required in Animal Husbandry; sophomore or junior year; first term; 3 credits; 3 recitations; 1 laboratory period. Fee $0.25. Professor Potter.

AH 232. **Breeds of Live Stock II.** A study of the breeds of sheep and swine, their development, breeding, and type.

Prerequisite: AH 111. Required in Animal Husbandry; sophomore year; second term; 3 credits; 3 recitations; 1 two-hour laboratory period. Fee $0.25. Associate Professor Nelson.

AH 441. **Animal Breeding.** The practical application of principles of breeding to animals. Pedigree study.

Prerequisite: Genetics. Required in Animal Husbandry; senior or graduate year; second term; 3 credits; 2 recitations; 1 three-hour laboratory period. Associate Professor Nelson.

AH 445. **Pedigree Study.** A laboratory study of the blood lines of the various breeds of live stock. Each student is expected to select one or two breeds as the basis for special study rather than to attempt to cover all breeds.

Elective in Animal Husbandry; senior or graduate year; each term; credits and hours to be arranged. Professor Potter.

AH 351. **Feeds and Feeding I.** The chemical and physiological principles of animal nutrition; function of the various classes of nutrients when taken into the animal body; nutritive rations; feeding standards; compounding rations; and feeds with special reference to chemical composition, energy, and source.

Prerequisite: Chem 251. Animal Husbandry; junior year first term; 4 credits; 4 recitations; 1 two-hour laboratory period. Text: Henry and Morrison, Feeds and Feeding. Associate Professor Nelson.

AH 352. **Feeds and Feeding II.** An advanced course in the feeding of horses, beef cattle, sheep, and swine, including thorough training in the most approved methods of stock feeding. 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 live stock will be permitted to do so by arrangement with the head of the department.

Prerequisite: AH 351. Required in Animal Husbandry; junior or graduate year; second term; 5 credits; 5 recitations; 1 two-hour laboratory period. Text: Henry and Morrison, Feeds and Feeding. Associate Professor Nelson.

AH 455. **Abridged Feeds and Feeding.** A condensed course in the feeding of beef cattle, sheep, hogs, and horses, with special reference to principles of nutrition and farm practice. While brief, the work is complete in itself and does not depend upon any other course.

Prerequisite: AH 221. Elective to juniors and seniors in Agriculture except those majoring in Animal Husbandry; third term; 4 credits; 4 recitations; 1 two-hour laboratory period. Text: Henry and Morrison, Abridged Feeds and Feeding. Professor Potter.

AH 459. **Pork Production.** Feeding and management of hogs with special reference to dairy farm conditions.

Prerequisite: AH 351. Elective in Dairy Husbandry; junior or senior year; first term; 3 credits; 3 recitations; 1 two-hour laboratory period. Mr. Oliver.

AH 461. **Live-Stock Economics.** An advanced course in management dealing particularly with economic and financial phases of live-stock production.

Required in Animal Husbandry; senior or graduate year; third term; 3 credits; 3 recitations. Professor Potter.

AH 471. **Meats.** A study of meats of all classes of meat animals, covering butchering, location of 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.

Elective in Animal Husbandry; senior or graduate year; second term; 2 credits; 2 three-hour laboratory periods. Mr. Oliver.

AH 475. **Meats.** Same as AH 471 eliminating butchering.

Elective in Home Economics; second and third terms; 1 credit; 1 three-hour laboratory period. Professor Potter.

AH 481. **Seminar.** Weekly meetings in which papers on Animal Husbandry subjects are read and discussed. These papers

are prepared under the supervision of the department, although considerable latitude is allowed in the selection of subjects and the manner of presentation.

Required in Animal Husbandry; junior or senior year; second term; 1 credit. Professor Potter.

AH 482. **Seminar.** A continuation of course 481.

Required in Animal Husbandry; third term; 1 credit. Associate Professor Nelson.

AH 491. **Investigative Work.** 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.

Elective in Animal Husbandry; senior year; any term; credits and hours to be arranged.

AH 691, 692, 693. **Graduate Research.** 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, live-stock management, and all forms of library work with either experiment station or general live-stock literature.

Elective in Animal Husbandry; graduate year; first term; credits and hours to be arranged. Professor Potter.

AH 11. **Vocational Stock Judging.** A thorough drill in the judging of beef cattle, sheep, swine, and horses, accompanied by text-book and lecture work on types and breeds of live stock.

Required in Vocational Curriculum; second term; 5 credits; 1 recitation; 5 two-hour laboratory periods. Fee $0.25. Text: Vaughan, Type and Market Classes of Live Stock. Mr. Oliver.

AH 21. **Feeding and Management.** Practical details of the feeding, care, and management of all kinds of live stock with special reference to practices in the West.

Required in Vocational Curriculum; second term; 5 credits; 4 recitations; 2 two-hour laboratory periods. Fee $1.00. Text: Potter, Live Stock Management. Associate Professor Nelson.

DAIRY HUSBANDRY

Dairying is rapidly becoming one of the most important agricultural industries of the United States. There are approximately 23,000,000 dairy cows in the United States at the present time. 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. Climatic conditions especially adapt this region to successful dairying. The department offers courses training the student in the main phases of the dairy industry. The student has an opportunity to specialize in either production or manufacturing lines of work.

Equipment. The department has a well-equipped creamery and cheese-factory laboratory. The creamery is operated under commercial conditions at all times and the cheese factory is so operated when a sufficient local supply of milk is available. There is a herd of about 100 head of pure-bred dairy cattle available for instructional and experimental purposes. The College recently received as a gift from Mr. W. B. Ayer, of Portland, a herd of 25 head of pure-bred Guernsey cattle.

COURSES

DH 200. **Elements of Dairying.** Fundamental principles and correct practices of modern dairying; testing of milk and cream; principles of buttermaking; operation of farm separators.

Required in Agriculture; sophomore year; each term; 4 credits; 3 lectures; 2 two-hour laboratory periods. Fee $4.00. Deposit $1.00. Reference texts: Stocking, Manual of Milk Products. Eckles and Warren, Farm Dairying. Assistant Professor Chappell, Mr. Wing, and Mr. Fine.

DH 204. **Advanced Testing.** Theory and practice of the various tests used to determine the composition of milk, cream, butter, cheese, and condensed milk in factories; tests for adulterants and preservatives; methods of standardizing testing solutions. This course is prerequisite to the dairy manufacturing subjects; optional in third term of the sophomore year.

Elective in Agriculture; junior or senior year; first term; 3 credits; 2 lectures, 1 two-hour laboratory period. Fee $3.00. Deposit $2.00. Reference texts: Farrington and Woll, Testing Milk and Cream; Van Slyke, Modern Methods of Testing Milk.

DH 301. **Market Milk.** To train for the production of market milk and for work in city milk plants and as milk inspectors; the 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 204. Elective; third term; 3 credits; 2 lectures; 1 two-hour laboratory period. Fee $2.00. Deposit $1.00. Reference Text: Parker, City Milk Supply.

DH 302 and 303. **Commercial Buttermaking.** This subject is taught from the point of view of the inside management of the creamery. The instruction includes the theory and practice of buttermaking and the operation of creamery equipment.

Prerequisite: DH 204. Elective; first and second term; 3 credits each term (credit given only after both terms have been completed); 2 lectures, 1 two-hour laboratory period. Fee $3.00. Deposit $2.00. Text: McKay and Larson, Principles and Practice of Buttermaking. Assistant Professor Chappell.

DH 401. **Cheesemaking.** Theory and practice of cheesemaking; manufacture of chedder cheese; practice in the manufacture of the common soft types, including cottage, Neufchatel, Club, and Swiss; the fundamental scientific principles of chemistry and bacteriology involved; judging cheese.

Prerequisite: DH 204. Elective: second term; 4 credits; 2 lectures; 1 eight-hour laboratory period. Fee $3.00. Deposit $2.00. Text: Thom and Fiske, The Book of Cheese.

D. H. 402. **Ice-cream and Condensed Milk.** Science and practice of the manufacture and sale of ice-creams and ices; manufacture of condensed milk; emphasis on the relation of these industries to each other and to the dairy industry as a whole.

Prerequisite: DH 204. Elective; third term; 3 credits; 2 lectures; 1 two-hour laboratory period. Fee $3.00. Text: Frandsen and Markham, Manufacture of Ice-creams and Ices. Assistant Professor Chappell.

DH 403. **Factory Organization and Management.** Taught from the standpoint of the factory owner or manager, correlating

all the practices taught in factory methods with the problem of factory management. Leaks, efficiency, selling, etc.

Elective; first term; 3 credits; 3 lectures. Fee $1.00. Assistant Professor Chappell.

DH 351. **Judging Dairy Cattle.** A study of the correlation of the form of dairy cattle with milk production; gross breed characteristics; comparative judging and the terminology of the show ring.

Prerequisite: AH 111. Elective; third term; 3 credits; 3 two-hour laboratory periods. Fee $0.50. Mr. Wing.

DH 352. **Dairy Herd Management.** 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, and the principles of feeding dairy cattle.

Prerequisite: AH 351. Elective; second term; 3 credits; 3 lectures. Text: Eckles, Dairy Cattle and Milk Production. Professor Brandt.

DH 451. **Dairy Judging Team.** To train students for participation in intercollegiate dairy cattle judging contests.

Prerequisite: DH 351. Elective; first term; 1 credit; several laboratory periods a week and short trips to nearby farms. Fee $0.50. Mr. Wing.

DH 452. **Breeding Dairy Cattle.** 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.

Elective; second term; 3 credits; 2 lectures; 1 two-hour laboratory period. Fee $0.50. Reference text: Mumford, The Breeding of Animals. Mr. Wing.

DH 453. **Milk Production.** A further study of feeding for milk production; more detailed study of various feeding standards and recent feeding investigations; special problems.

Prerequisite: DH 352. Elective; third term; 3 credits; 3 lectures. Professor Brandt.

DH 480. **Seminar.** The object of this course is to train the student to do independent work and to develop the spirit of re-

search. Each student prepares papers and discussions on recent scientific work.

For seniors and graduate students; 1 credit; 1 recitation. Professor Brandt.

DH 490. **Special Studies.** Students who have demonstrated their ability to do independent work may pursue special studies along various lines of investigation. This may be under the supervision of various members of the staff. Credit to be arranged. Professor Brandt.

DH 600. **Research.** Graduate students who desire to pursue advanced work may take up problems which they are qualified to study. Credit to be arranged. Professor Brandt.

VOCATIONAL CURRICULUM IN DAIRY MANUFACTURERS

January 2 to March 26, 1920.

The College has for several years offered a one-year vocational curriculum in Dairy Manufactures and a one-month Short Course in the same subject. These two courses are now combined in a twelve-week Vocational Curriculum in Dairy Manufactures. This work is offered during the second term of the College session in the months of January, February, and March. At this time buttermakers, cheesemakers, their helpers, and others interested in this kind of work can best get away from the farm or factory.

These courses are designed to train men as buttermakers and cheesemakers. Men who are experienced in this kind of work find the instruction of great value. This is evidenced by the large number of experienced workmen who attend the courses. This new curriculum will fit them to hold more important positions. Men who have had little or no experience are able to get a good start at a fair salary after completing courses of this kind.

For the last two years men taking the four-week Short Course have all had good positions before the close of the course. A twelve-week curriculum will be even more valuable. The new curriculum is designed primarily to teach a man to become a high-class buttermaker or cheesemaker.

COURSES

DH 11. **Buttermaking.** The principles of creamery buttermaking; construction, management, and care of the creamery; a

comparison of the various methods commonly used in the manufacture of butter in creameries; practice in sampling and grading cream; pasteurization and ripening of cream; churning and packing butter.

Required in Dairy Manufacturers Vocational Curriculum; 5 credits; 3 lectures; 3 four-hour laboratory periods. Fee $3.00. Deposit $2.00.

DH 12. **Cheesemaking.** The commercial manufacture of cheddar cheese, covering the process in detail; a study of other varieties of cheese; factory management and construction; practice in making cheddar and other cheeses; records kept of the different operations to note their effect on the finished products.

Required in Dairy Manufactures Vocational Curriculum; 3 credits; 3 lectures; 1 six-hour laboratory period. Fee $3.00. Deposit $1.00.

DH 13. **Ice-cream Making.** The preparation of mixes for various frozen products by different formulas; freezing, packing, and sale of frozen products.

Required in Dairy Manufactures Vocational Curriculum; 2 credits; 2 lectures; 1 three-hour laboratory period. Fee $3.00. Deposit $1.00.

DH 15. **Creamery Tests.** Advanced work in the use of the Babcock test; short cuts and conveniences for rapid and efficient testing; rapid tests for adulterants and preservatives; curd, acidity, and sediment tests.

Required in Dairy Manufactures Vocational Curriculum; 1 credit; 1 lecture; 1 two-hour laboratory period. Fee $2.00. Deposit $1.00.

DH 20. **Farm Dairying.** The history and development of the dairy breeds and their adaptability to various economic conditions; how to manage a dairy herd as a part of the operations on a general farm; selection of the cows and herd sire; calf raising; keeping records of the herd; and feeding for milk production.

Required in Dairy Manufactures Vocational Curriculum; first term; 3 credits; 3 lectures. Text: Eckles and Warren, Farm Dairying. Mr. Fine.

FARM CROPS

This department deals with the problems of production, improvement, marketing, manufacture, and uses of each of the field crops produced for food, forage, textile, and special purposes. The purpose of the work is primarily to teach students scientific, practical, and economical methods of crop production 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 civil service positions in agronomy, forage crops, grain standardization, plant breeding, crop marketing, etc., or for experiment station, extension, or teaching work. The object is to turn out men with a broad training on general lines and well finished in Farm Crops. Considerable flexibility in electives is allowed in order to meet special needs of individual students.

Numerous Farm Crops graduates are occupying technical positions involving considerable responsibility. The field is a large one and deals principally with well-known and staple crops that are constantly in use and in demand. The work is closely associated with the daily food supply and is of importance to all students of Agriculture, whether seeking a salaried position or expecting to engage in the operation or management of a farm.

Equipment. The department has excellent recitation rooms and well-equipped laboratories. The Experiment Station plots offer excellent opportunities for field study and make possible extensive collection of valuable material for class work. A large collection of the best books, periodicals, etc., dealing with the subject, is available. The Oregon Agricultural College is excellently equipped for grain grading and inspection work. The new crop inspection course is a marked improvement over anything heretofore offered.

COURSES

FC 10. **General Farm Crops.** Practical production, improvement and marketing of Farm Crops for grain, forage, cover, and special purposes. A brief course combining the practical features of cereals, forage crops, and seed production, with special attention to northwestern conditions.

Required in Vocational Curriculum; first term; 5 credits; 3 lectures; 2 laboratory periods. Fee $0.25. Text: Wilson and Warburton, Field Crops.

FC 11. **General Farm Crops.** Lectures for horticultural students. Same as FC 10, except laboratory omitted.

Required in Vocational Curriculum in Horticulture; third term; 3 credits; 3 lectures. Fee $0.25. Text: Wilson and Warburton, Field Crops.

FC 100. **Crop Production.** The foundation principles of economic crop production; storage, marketing, and uses of leading cereal forage and special field crops; production costs; methods of improvement; crop rotations; and weed control methods. A course of foundation principles, prerequisite to all Farm Crops courses in the degree curriculum except FC 351 and 361.

Required in Agriculture; freshman year; any term; 5 credits; 4 recitations; 1 two-hour laboratory period. Fee $0.75. Text: Montgomery, Productive Farm Crops. Assistant Professor Wilkins.

FC 231. **Forage Crops and Root Crops.** The production, handling, storage, marketing, and uses of forage; reseeding and care of range; development and maintenance of pasture; silage and hay making; soiling crop rotations; root-crop production; cost comparison of different crops.

Elective in Agriculture; sophomore or junior year; third term; 3 credits; 3 recitations. Fee $0.50. Text: Piper, Forage Crops. Professor Hyslop.

FC 311. **Cereal Production.** A thorough study of the production and uses of cereals and allied grains from seed to consumer; varieties; distribution; adaptability; best production methods; markets; manufacture and use of wheat, corn, oats, rye, barley, flax, buckwheat, and grain sorghums; laboratory studies; cereal judging; seed quality; effect of treatment on seed, quality of grain, and grain products; studies of material in the field. This course is suited to cereal specialists, grain growers, general farmers, and those preparing for civil service work in agronomy, grain investigation, grain supervision, and inspection work and for operators of elevators, warehouses, and mills.

Elective in Agriculture; junior year; first term; 5 credits; 4 recitations; 1 three-hour laboratory period. Fee $0.75. Texts: Carleton, Small Grains. Montgomery, The Corn Crop. Professor Hyslop and Assistant Professor Wilkins.

FC 314. **Potato Growing.** Potato production; improvement; storage; cost; marketing; distribution; uses; experimental work; varietal studies and identification; judging and scoring.

Elective in Agriculture; junior or senior year; second term; 2 credits; 1 recitation; 1 two-hour laboratory period. Fee $0.50. Professor Hyslop.

FC 421. **Crop Inspection.** The inspection, grading, and valuation of cereals, forage, potatoes, beans, and miscellaneous agricultural commodities according to Federal, state, and other adopted standards; theory and practice of grade fixation and application. A valuable course for people buying or selling agricultural commodities or engaging in inspection work, fitting men for state and Federal positions as grain supervisors, samplers, and inspectors, and teaching farmers, warehouse-men, millers, and others correct methods in valuation of agricultural commodities.

Elective in Agriculture; senior year; second term; 5 credits; 3 recitations; 2 three-hour laboratory periods. Fee $1.00. Professor Hyslop and Assistant Professor Wilkins.

FC 431. **Agrostology.** A study of grasses, legumes, and other forage seed crops with especial attention to production, harvest, and marketing methods for seed, fiber, and other special purpose crops; cover cropping lawn-grass mixtures; sand and other soil binders; and similar special crop problems. A desirable course for seedsmen and farmers specializing along forage and seed-crop lines and for those seeking technical positions dealing with seed work.

Elective in Agriculture; senior year; first term; 5 credits; 4 recitations; 1 three-hour laboratory period. Fee $0.75. Texts: Piper, Forage Plants. Hitchcock, A Textbook of Grasses. Professor Hyslop.

FC 341. **Crop Improvement.** Practical improvement of farm crops as to quality and yield; field selection; variety testing; head, hill, and ear-to-row methods; multiplication; pure-seed production; hybridization and fundamental plant-breeding laws applicable to

practical crop improvement; laboratory work in greenhouse, laboratory, and field. Important for seed-production specialists, experimental workers, and candidates for civil service positions in agronomy, forage crop, or potato work.

Elective in Agriculture; junior year; third term; 5 credits; 4 recitations; 1 three-hour laboratory period. Fee $0.75. Assistant Professor Wilkins.

FC 351. **Seed Testing.** A study in seed identification and germination; seed legislation; standard methods of seed testing; seed grades and standards. A course for students preparing for private, state, or Federal seed-testing work. Men and women having a good knowledge of systematic Botany and some knowledge of seed production and conditions may take this course.

Prerequisite or companion course: FC 431. Elective in Agriculture, Home Economics, and Commerce; junior or senior year; second term; 2 credits; 2 three-hour laboratory periods. Fee $0.75. Professor Hyslop.

FC 361. **Weed Eradication.** 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.

Elective in Agriculture; junior or senior year; third term; 1 credit; 1 recitation.

FC 411. **Crop Efficiency.** The production, storage, and marketing of farm crops; comparison of methods leading to cheaper and more efficient production; analysis of net results; crop adaptibility and its relation to substitutes and competing markets; relation of preparatory methods to returns; sequence of crops as it affects yield, quality, and profits of succeeding crops; organization and operation of cropping systems and crop rotations; flexible cropping systems; crop specialization, extremes, fads, and amendments as they affect yield, quality, and profits of specific crops; systems of crop storage, handling, and use on farm and for market; grade and standard fixation, making the most of grades and market customs; factors determining when to sell; state, national, and international regulations dealing with transportation, inspection, and marketing of farm crops; export and import regulations;

preparation of crops for shipment; loading cars, weather data, and protection of shipments; crop statistics; their value and use; disposal of crop by-products and other problems affecting successful production.

Required in Farm Crops; elective to others in Agriculture; senior year; third term; 5 credits; 5 recitations. Fee $0.50. Professor Hyslop.

FC 414, 415, 416. **Advanced Crop Work.** Lectures or laboratory work, or both, to 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 work or investigation beyond that outlined in under-graduate courses. Suggested topics are the following; others may be given should occasion arise: (a) Production and disposition of Sugar Beets. (b) Production and disposition of Hops. (c) Production and disposition of Fiber Flax. (d) Production and disposition of Tobacco. (e) Special work on experimental methods. Individual students desiring this work may be assigned to some practical problem involving experimental or research work and the preparation of a thesis.

Elective in Agriculture; senior year; three terms; 3 to 5 credits each term. Fee to be arranged. Professor Hyslop.

FC 441. **Advanced Crop Breeding.** An advanced course dealing with the theory and technique of breeding field crops; transmission of characters; hybridization; variability and its measurement; behavior of characters of specific crops. 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 crops.

Elective in Agriculture; senior year; first term; 3 credits; 3 recitations. Fee $0.50. Assistant Professor Wilkins.

FC 600. **Graduate Work.** Candidates for advanced degrees majoring in Farm Crops are expected to complete from 24 to 32 credits of work on some specific problem of a practical nature, requiring careful research work. Results of laboratory and field work, together with a study of the literature of the subject must be embodied in a suitable thesis.

Elective in Agriculture; graduate year; all terms; credits and fees to be arranged. Professor Hyslop.

FARM MANAGEMENT

Farm Management deals with the organization, equipment, and operation of the farm as a business enterprise. 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 courses in Farm Management are 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 fit him best for successful management of the farm.

Equipment. The Farm Management laboratory and seminar room are provided with drafting tables and instruments, surveying instruments, original data and record sheets, lantern slides and charts, and a complete periodical and bulletin reference library. Investigational work carried on in many different parts of the State offers the advanced student excellent opportunities for field work.

COURSES

FM 302. **Farm Management.** Major factors affecting the farmer's labor income; farming as a business; value of the farm living; types of farming; adaptation of type to region; selection and purchase of the farm; capital investment and distribution; use of credit; size of business; quality and diversity of business; farm leases and rental methods; man and horse labor efficiency; farm equipment costs and duty; farm and farmstead layout and building arrangements; cropping systems and crop rotations on different types of farms; maintenance of soil fertility as a factor in farm management; cost of production and efficient production practices; use of farm records and accounts; marketing in relation to farm management; study of typical successful and unsuccessful farms; getting started in the farming business. Short field trips. Advanced Farm Management may be taken accompanying this course.

Required in Agriculture; junior year; second term; 4 credits; 3 lectures; 1 two-hour laboratory period. Fee $1.00.

FM 303. **Farm Management.** A continuation of 302 in which the minor factors in successful farm management are discussed.

Prerequisite: FM 302. Elective; junior year; third term; 3 credits; 2 lectures; 1 two-hour laboratory period. Fee $0.50.

FM 304. **Farm Management Field Course.** A course for students specializing in Farm Management. Practical application of the principles of Farm Management through direct study and analysis in the field of some of the most successful farms in the State; training in regular farm-management survey work. In the summer of the junior year, the students registered in this course, accompanied by the instructor, spend four or five weeks in the field in representative sections of the State, devoting about one week to each section. The days are spent in the company of the farm owner in study of his farm and its methods, a complete record being taken; in the evenings this record is analyzed. Camp equipment is provided and field camp maintained throughout the period, the student paying only his living and traveling expenses.

Prerequisite: FM 301. Elective; junior year; summer term; 8 credits; field work.

FM 322, 323. **Farm Management Seminar.** Junior, senior, and graduate students majoring in Farm Management carry this course, constituting the technical association in Farm Management. 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 days' field trip is taken to successful farms.

Required in Farm Management; junior year; second and third terms, ½ credit each term; fortnightly meetings.

FM 311. **Farm Organization.** Application of the principles of Farm Management to the organization of the individual farm; methods of measuring the efficiency of any given farm; analysis of farms to determine weaknesses and possibilities of improvement; procedure followed in organizing a farm business; discussion of the standards used as a basis for farm planning; detailed study of efficiency practices in production and operation; practice in planning production programs, cropping systems, fertility balances, labor programs, live stock, machinery, and building equipment; methods of increasing productive business; methods of financing; field trips. Prerequisite: FM 301. Elective; junior year; first term; 3 credits; 2 lectures; 1 three-hour laboratory period. Fee $0.50.

FM 312. **Semi-arid Farm Management.** A study of the farm management problems of the dry farmer and irrigation farmer; preparation of management plans dealing with forms of production, profitable enterprises, fertility rotations, equipment, labor distribution, marketing, etc., as adapted to semi-arid conditions; if possible, a field excursion into the dry farming and irrigated sections of Oregon for farm survey work. (Not given in 1919-20).

Prerequisite: FM 301. Elective; junior year; second term; 2 credits; 2 lectures.

FM 333. **Enterprise Costs and Profits.** A study of production costs and enterprise profits; methods of determining agricultural costs; tabulation, analysis, and interpretation of cost data; discussion of forms of complete cost records and enterprise records adapted to different types of farming; emphasis on Oregon conditions; relations of price to cost and profits; analyses of new or questionable enterprises; field study of prominent and profitable farm enterprises.

Prerequisite: FM 301. Elective; junior year; third term; 3 credits; 2 lectures; 1 three-hour laboratory period. Fee $0.50.

FM 441, 442, 443. **Advanced Farm Management.** 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, etc.; work directed and reviewed by weekly round-table discussions.

Prerequisite: FM 301. Elective; senior year; three terms; 3 to 5 credits each term; all laboratory and field work. Fee $1.00 each term.

FM 452. **Land Utilization.** Land resources of the State and of the United States and utilization of the same; methods of land clearing and costs; land values; types of farming adapted to different regions; the land settlement problem and settlement methods and opportunities in this and other countries; land tenure in the United States and in Oregon with comparisons of ownership and tenantry.

Prerequisite: FM 301. Elective; senior year; second term; 2 credits; 2 lectures.

FM 463. **Accredited Farm Work.** Senior or graduate students who have taken the regular four-year major in Farm Management or its equivalent and who have previous good records of practical experience in farming and the necessary personal qualifications as to character, industry, etc., have opportunity in this course as workmen on "accredited" farms—farms operated by progressive and successful farmers—both for actual experience and to study the organization, management, production practices, costs of production, methods of solution of special problems, etc., on these farms, making written reports and where advisable, preparing re-organization plans. Work is inspected by the instructor and reported upon by the farm owner. College credit given the student depends upon extent and quality of practical work and written reports.

Prerequisite: FM 301. Elective; senior or graduate year; 8 to 16 credits.

FM 601, 602, 603. **Graduate Work.** Under this head all graduate work in Farm Management is registered. Graduate work in this field may be along either of two lines.

A. Research. For the student who wishes to prepare himself for investigational and instructional or extension work in Farm Management. With the development of Farm Management throughout the country as a distinct science or branch of Agriculture, many opportunities are opening up for men in instructional or investigational or extension work in both state and Federal service. Problems of wide diversity and great practical interest offer attractive thesis subjects. The minor courses required in connection with research problems are taken in residence one or more terms and the major work in residence or in the field.

B. Practical Management. For the student who wishes to prepare himself more thoroughly as a farm manager, a sufficient period registered in the course FM 463, Accredited Farm Work, combined with several terms' work in residence, is suggested.

Prerequiste: FM 301. Elective; graduate year; first term; credits to be arranged.

FM 12. **Practical Farm Management.** The principles and factors in farm management that are most important to the practical farmer are discussed in this course. The laboratory work deals with the solution of the home-farm problems.

Vocational Curriculum; second term; 3 credits; 2 recitations; 1 laboratory period. Fee $0.50.

FM 13. **Farm Planning and Organization.** The practical application of the principles learned in the preceding course, to the planning or re-planning of the student's home farm or an assigned farm. Plans include selection of the most profitable industries and laying out of the farm and farmstead to give maximum efficiency in operation, and provide in detail development programs of the farm as to improvements, equipment, live-stock production, cropping plan, fertility, labor, financial programs, etc.

Vocational Curriculum; third term; 2 credits; 2 laboratory periods. Fee $0.50.

FARM MECHANICS

The purpose and scope of the work in Farm Mechanics is indicated fully in the description of courses given below.

Equipment. A large equipment of the most up-to-date farm machinery is loaned 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 farm machines 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. In addition to this equipment is a considerable selection of grain-cleaning and crushing machines, farm lighting plants, pumps, rams, and water-supply equipment.

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 drawbar horsepower of tractors, a gas and steam indicator for determining the efficiency of farm engines and tractors, and an electric motor and watt meter, 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.

COURSES

FMe 111. **Farm Motors.** A course dealing with 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; adaptation of electricity to farm uses.

Elective; freshman or sophomore year; any term; 3 credits; 1 recitation; 2 three-hour laboratory periods. Fee $2.00. Professor Gilmore and Mr. Jensen.

FMe 112. **Farm Tractors and Farm Trucks.** Detail study and operation of the gas, steam, and electric motor, including the stationary gas and steam engine, tractor, truck, and automobile; indicated, brake, and draw-bar horse power tests of tractors; tractor operation in field.

Prerequisite: FMe 111. Freshman or sophomore year; any term; 3 credits; 1 recitation; 2 three-hour laboratory periods. Fee $3.00. Mr. Jensen.

FMe 121. **Farm Motor and Farm Implement Repair.** Babbitting, soldering, valve grinding, key fitting, pipe fitting, welding, tempering, bearing scraping and fitting, and magneto repair; general repair of tractor, truck, and automobile motors and farm implements.

Prerequisite: FMe 116. Elective; freshman or sophomore year; any term; 3 credits; 3 three-hour laboratory periods. Fee $2.00. Mr. Jensen.

FMe 131. **Farm Implements.** A course dealing with 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; rope tying and splicing; fences and roads; setting up and adjustment of machines.

Elective; freshman or sophomore year; first or third term; 3 credits; 2 recitations; 1 three-hour laboratory period. Fee $1.00. Professor Gilmore.

FMe 332. **Crop Handling Equipment.** A detail study of all machines used in handling of crops in field, on the farm, and in storage; fanning-mills; grain graders and crushers; grain separators and combines; farm elevators; racks; balers; silage cutters. This course is especially designed for students in Crop Production, and for students of the grain farms who desire a knowledge of adjusting and handling of the thresher and combine.

Elective; junior or senior year; second or third term; 2 credits; 1 lecture; 1 three-hour laboratory period. Fee $1.50. Professor Gilmore.

FMe 341. **Concrete Construction.** The selection, proportioning, mixing, and placing of concrete for floors, sidewalks, machine bases, and foundations. The building of forms is a part of the work.

Elective; junior or senior year; third term; 3 credits; 2 recitations; 1 three-hour laboratory period. Fee $2.00. Professor Gilmore.

FMe 351. **Farm Conveniences.** Installation of farm water-supply systems, and farm electric-lighting plants; pipe fitting

and plumbing; meter reading; wells, pumps, hydraulic rams, and storage systems. Open to either men or women who desire a knowledge of modern farm conveniences with a view to installation.

Elective; junior or senior year; first or third term; 3 credits; 2 recitations; 1 three-hour laboratory period. Professor Gilmore.

FMe 361. **Land Clearing.** A course dealing with comparison of methods, leading to the cheapest and most efficient method of removing stumps, trees, logs, brush, and rock from land; lectures, recitations, laboratory exercises, and field demonstrations, dealing with dynamite and 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 and leveling of sage brush and swamp lands.

Elective; junior or senior year; third term; 3 credits; 2 recitations; 1 three-hour laboratory period. Professor Gilmore.

FMe 371. **Dairy Mechanics.** Proportioning and mixing of concrete for floors, sidewalks, and machine bases; study and operation of gas-engines and accessories; pumps, steam boilers, and steam engines; firing and operating steam engines; flue repair; babbitting; soldering; pipe fitting; line shafts and belting. For students in Dairying who wish a course in mechanics adapted to the needs of the dairy student.

Elective; junior and senior years; first term; 3 credits; 2 recitations; 1 three-hour laboratory period. Fee $2.00. Professor Gilmore and Mr. Jensen.

FMe 372. **Orchard Machinery.** 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.

Elective; junior or senior year; third term; 3 credits; 2 recitations; 1 three-hour laboratory period. Fee $2.00. Professor Gilmore and Mr. Jensen.

FMe 373. **Irrigation Farm Mechanics.** This course is intended for students interested in farm irrigation, and is designed for junior and senior students in Soils. It deals with the farm gas

and electric motor, pumps, concrete construction, and the study and installation of farm pumping plants.

Elective; junior or senior year; third term; 3 credits; 1 recitation; 2 laboratory periods. Fee $2.00. Professor Gilmore.

FMe 10. **General Farm Mechanics.** A vocational course in Farm Mechanics dealing with farm power machinery, farm implements, farm conveniences, farm concrete construction, and repair of farm equipment.

Required in Agriculture Vocational Curriculum; third term; 5 credits; 2 recitations; 3 three-hour laboratory periods. Fee $3.00.

FMe 11. **Tractor and Tractor Implements.** A course dealing with the selection, operation, care, adjustment, and repair of farm engines, tractors, and tractor implements. This course is intended to train students as tractor operators.

Elective in Agriculture Vocational Curriculum; 15 credits; 4 recitations; 11 three-hour laboratory periods. Fee $15.00.

FMe 12. **Gas Engines and Tractors.** A one-month course in Farm Engines and Farm Tractors taken up from the standpoint of a farmer who intends to purchase and operate a tractor, and feels the need of a practical training. This course will be given in November, December, January, February, and March. If, after the one-month course is taken, the student finds time and a desire to continue, he may take more advanced work.

Elective in Agriculture Vocational Curriculum; 5 credits; 1 recitation; 4 three-hour laboratory periods. Fee, first month, $5.00; additional months, $5.00 each.

FMe 71. **Creamery Mechanics.** A presentation of the topics included under course FMe 371, adapted to needs of students in the Vocational Curriculum.

Elective in Agriculture Vocational Curriculum; any term; 3 credits; 3 three-hour laboratory periods. Fee $2.00.

HORTICULTURE

The work in Horticulture includes instruction in Pomology, Olericulture, Floriculture, Landscape Gardening, and School Gardening. In these courses the student is first thoroughly grounded in the fundamentals, and is then allowed to specialize as he desires. He may thus fit himself for station or Government work, or prepare for the many lines of horticultural business.

The required work for students specializing in Horticulture gives a thorough training in plant propagation, the general principles of orchard management and vegetable growing, floriculture, and landscape gardening.

The courses consist of lectures, reference reading, field exercises, and laboratory work. Much stress is placed upon the practical phases of all the work. In all courses 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.

Equipment. The Horticultural wing of Agricultural Hall, Horticultural Products Building, the greenhouses, extensive orchards and gardens, the large campus containing good plant material, an ammonia-gas cold storage plant, and a very good library are at the service of the department. The laboratories are well equipped for giving instruction in spraying, plant propagation, and fruit packing, vegetable grading and crating, and systematic pomology. There are large lecture rooms, a drafting room, photography rooms, and a Horticultural Museum.

The Horticultural Products Building is the first of its kind in the United States. It is a two-story brick building, with full basement, in which work can be done on a commercial scale. There is a large canning room equipped with paring and slicing machinery, sanitary preparation table, exhaust boxes, and a retort of 1300-can capacity; a juice room equipped with hydraulic presses, settling vats, pumps, multiple drum, silver-lined filters, and bottling machine; and cold storage rooms to aid in the manufacture of fruit juices, ciders, and vinegar; a jelly and jam room equipped with machinery such as pulper and finisher, steam-jacketed kettles, and other machinery used in the manufacture of jellies, jams, glace' and maraschinos; and a commercial evaporating room containing a

three-tunnel drier, a commercial apple kiln, and special preparation machinery to aid in the preparation of evaporated and dehydrated products.

In addition to the extensive orchards and gardens of the College, the region is well provided with orchards, canneries, etc., which can be used in the laboratory work.

COURSES

Hort 100. **Elements of Horticulture.** This course is to give a student enough training in horticulture to enable him to care for the home orchard as well as to understand some of the fundamentals of commercial orcharding. The course deals with such subjects as choosing the orchard; purchasing of nursery stock; planting the orchard; tillage; spraying; intercropping; and pruning.

Required in Agriculture; freshman year; any term; 5 credits; 2 lectures; 3 recitations; 2 two-hour laboratory periods. Fee $1.00. Text: Sears, Productive Orcharding. Professor Brown and assistants.

Pomology

Hort 311. **Practical Pomology.** A continuation of Hort 100. Principles and practices of fruit growing; frost fighting; thinning; fertilizers; pollination; economics of fruit-farm management; etc.

Required in Pomology; junior year; first term; 3 credits; 2 lectures; 2 recitations. Professor Brown.

Hort 412. **Systematic Pomology.** A study of the principles underlying pomological nomenclature and variety description, classification, and adaptation; critical study of many varieties of fruits; influence of environment upon behavior of fruit trees and the development of their products; the more important fruit groups and their inter-relationships.

Required in Pomology; senior year; first term; 5 credits; 2 recitations; 4 two-hour laboratory periods. Fee $3.00. Professor Lewis.

Hort 313. **Pruning Principles and Practice.** Thorough training in the fundamental principles underlying pruning, together with sufficient practice to enable the student to apply these fundamentals; bud study; tree building; maintaining the vigor of trees; and rejuvenation.

Required in Pomology; junior year; second term; 3 credits; 2 lectures; 2 recitations. Text: Kaine, Principles and Practices of Pruning. Professor Brown.

Hort 314, 315, 316. **Orchard Practice.** A laboratory course in which the student has actual practice in regular orchard and packing-house operations. The work includes tree planting, pruning, preparation of spray solutions, study of spray machinery, orchard spraying, orchard heating, and the picking, grading, packing, and judging of fruits. These courses are open only to those who have taken or are taking Hort 311.

Required in Pomology; junior year; three terms; 1 credit each term; 1 three-hour laboratory period. Fee $1.00 each term. Professor Brown.

Hort 361. **History and Literature of Horticulture.** A study of the literature and history of Horticulture from the time of the Egyptians to modern times.

Required in Pomology; junior year; third term; 3 credits; 2 lectures; 2 recitations. Mr. Locklin.

Hort 414. **Commercial Pomology.** The problems of handling fruit, including the picking, grading, and packing of fruits; study of the problems of transportation, storage, distribution, and marketing; planning of buildings for packing and storing of fruit.

Required in Pomology; senior year; second term; 5 credits; 2 lectures 3 recitations; 1 two-hour laboratory period. Text: Brown, Modern Fruit Marketing. Professor Lewis.

Hort 312. **Sub-Tropical Pomology.** This course takes up in detail the problems concerning the growing and marketing of such sub-tropical fruits as oranges, figs, olives, pineapples, etc.

Elective in Agriculture; junior or senior year; second term; 3 credits; 1 lecture; 3 recitations. Text: Coit, Citrus Fruit. Professor Lewis.

Hort 413. **Advanced Pomology.** A general review to determine students' mastery of Pomology, followed by study of advanced problems in Pomology, orchard costs and economics; cost of production and marketing. This course is designed especially to fit students for civil service examinations.

Elective in Agriculture; senior year; third term; 3 credits; 1 lecture; 3 recitations. Professor Lewis.

Hort 414. **Viticulture.** Problems pertaining to the growing, harvesting, and marketing of both the American and European types of grapes; soils; locations; pruning; training; harvesting; grading; packing; storage, etc.

Elective in Agriculture; junior or senior year; first term; 3 credits; 1 lecture; 2 recitations; 1 two-hour laboratory period. Mr. Locklin.

Hort 415. **Small Fruit Culture.** Problems connected with the growing, harvesting, and marketing of such fruits as the strawberry, currant, gooseberry, raspberry, blackberry, loganberry, and cranberry.

Elective in Agiculture; junior or senior year; third term; 3 credits; 1 lecture; 3 recitations. Texts: Fletcher, The Strawberry. Card, Bush Fruits. Mr. Locklin.

Hort 416. **Nut Culture.** Methods of growing, harvesting, curing, and marketing such nut crops as the walnut, filbert, almond, and pecan. Detailed laboratory study of the leading varieties of these nuts.

Elective in Agriculture; junior or senior year; third term; 3 credits; 1 lecture; 2 recitations; 1 two-hour laboratory period. Fee $0.50. Text: Hume, The Pecan. Professor Brown.

Hort 417. **Advanced Orchard Practice.** Problems of pruning, spraying, budding, and grafting taught by laboratory and field work not only at Corvallis, but in other sections of the State. The course is offered for those students who have had regular orchard-practice work. Students are registered only by appointment with the head of the department. Schedule by arrangement in four-hour periods on Saturdays.

Elective in Agriculture; senior year; third term; 3 credits; 1 recitation; 1 four-hour laboratory period. Fee, according to cost of trips. Professor Lewis.

Hort 418. **Plant Breeding.** History and development of plant breeding with horticultural plants; methods used by breeders; clinal selection; varieties of plants; evolution and development of species and varieties of horticultural importance; selection; hybridization; graft hybrids; bud selection; disease resistance, etc.

Prerequisite: Zool 351. Elective in Agriculture; junior or senior year; second term; 3 credits; 3 recitations; 1 two-hour laboratory period. Professor Brown.

Hort 419. **Advanced Plant Breeding.** A continuation of course 418 including study of breeding systems; review of literature of most recent breeding work; breeding technique, etc. Students are given definite problems in plant breeding.

Elective in Agriculture; junior or senior year; third term; 3 credits; 2 recitations; 2 two-hour laboratory periods. Professor Harvey.

Hort 481, 482, 483. **Seminar.** A course for senior and graduate students in Horticulture. Study is made of some of the advanced problems. Articles from the leading magazines on horticultural subjects, as well as station and Government publications, are reviewed.

Elective in Agriculture; required in Horticulture; senior year; three terms; 1 credit each term; 1 two-hour recitation.

Vegetable Gardening

Hort 221. **Vegetable Growing.** Fundamental study of methods of vegetable growing; planting and care of a vegetable garden as an integral part of every farm home; preparation for advanced courses in vegetable growing.

Required in Horticulture; elective in Agriculture; sophomore year; third term; 2 credits; 1 lecture; 1 two-hour laboratory period. Fee $0.50. Texts: Watts, Vegetable Gardening; Lloyd, Productive Vegetable Gardening. Professor Bouquet.

Hort 321. **Vegetable Seed Production.** The business of seed production is becoming yearly more important. The work offered in this course is designed both to enable the student to understand and practice methods used in contract seed production, and to acquaint him with the manner of improving for himself seed strains of vegetables grown for market or home use. Laboratory work consists of field practice in selection of stocks, harvesting, threshing, and cleaning seed, seed testing, etc.

Required in Vegetable Gardening; junior year; first term; 3 credits; 2 recitations; 1 two-hour laboratory period. Text: Brill, Farm Gardening and Seed Growing. Professor Bouquet.

Hort 322. **Principles of Vegetable Gardening.** A continuation of Hort 221. Problems of growers in field management of a commercial vegetable garden, including such subjects as vegetable

soils, production of plants, distribution of crops, succession of crops, manures and fertilizers, methods of irrigation, spraying, etc.

Required in Vegetable Gardening; elective in Agriculture; junior year; second term; 3 credits; 2 recitations; 1 two-hour laboratory period. Texts: Watt, Vegetable Gardening. Corbett, Garden Farming. Professor Bouquet.

Hort 323. **Practical Vegetable Gardening.** A continuation of Hort 322. Study of methods used in the commercial production of vegetables for market; field and greenhouse work with lectures thoroughly to acquaint the student with proper methods and management; inspection of commercial testing grounds; trips to vegetable farms.

Required in Vegetable Gardening; junior year; third term; 3 credits; 2 recitations; 1 two-hour laboratory period. Text: Corbett, Garden Farming. Professor Bouquet.

Hort 421, 422, 423. **Vegetable Forcing.** This work extends through the three terms of the college year, thus giving the student opportunity to observe the conditions of the fall, winter, and spring months as they relate to crops grown under glass. Lectures during the fall term deal largely with the principles of vegetable greenhouse types and management, including relation of forcing vegetables to outdoor vegetable farming, types of vegetable greenhouses as related to crops produced, soil composition, fertilizing materials, systems of soil cropping, use of frames for fall and winter vegetables, soil sterilization, irrigation of vegetables under glass, etc. Laboratory work in the greenhouse enables the student to observe the application of these principles.

During the second term crop production and marketing are covered, especially as related to those vegetables suited to conditions of the winter and early spring months, such as leaf lettuce, spinach, cauliflower, French endive, rhubarb, asparagus, parsley, mushrooms, etc. The value of these various crops is considered from the standpoint of their usefulness and profit to the vegetable grower. Methods of marketing each crop are studied.

During the spring term problems incident to the forcing of tomatoes and cucumbers are studied. Attention is paid to commercial vegetable plant production. Lectures and recitations cover such subjects as varieties; variety characteristics; distances of

planting; pruning and training methods; pollination studies; methods of mulching and watering; control of insects and diseases; harvesting; grading; and marketing.

Required in Vegetable Gardening; senior year; three terms; 2 credits each term; 1 recitation; 1 two-hour laboratory period. Text: Watts, Vegetable Forcing. Professor Bouquet.

Hort 424. **Systematic Olericulture.** Descriptions, nomenclature, and clasifications 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.

Required in Vegetable Gardening; senior year; first term; 1 credit; 1 two-hour laboratory period. Professor Bouquet.

Hort 425, 426, 427. **Commercial Truck Gardening.** In the fall term, methods of field harvesting, grading, packing, and marketing are considered, as well as problems of growers in handling vegetables from field to market. Attention during the winter term is particularly given to methods of car loading, transportation, and storage of truck crops shipped to distant markets, such as onions, cabbage, broccoli, tomatoes, onion sets, melons, etc. The student has actual practice in field work. The spring term course is devoted to a study of advanced problems in vegetable gardening principally concerning methods of economic production for the open market and for canneries and dehydrators. A general review of vegetable gardening is given. Assigned readings.

Required in Vegetable Gardening; senior year; three terms; 3 credits each term; 2 recitations; 1 two-hour laboratory period. Professor Bouquet.

Landscape Gardening

Hort 231. **Landscape Gardening.** This course is designed to fit the needs of all students. Definite principles controlling layout and organization of different classes of property are developed. Enough drafting is required so that the student can express himself in a satisfactory manner. Study is made of problems in improvement work on home grounds, rural or urban, private estates, and small parks.

Required in Horticulture; sophomore year; first term; 3 credits; 2 two-hour drafting periods; 2 lectures; 1 recitation. Professor Peck.

Hort 331, 332, 333. **Plant Materials.** This course is intended to familiarize the student with trees, shrubs, vines, and perennials; their peculiar habits of growth, requirements, and care. Special attention is given to foliage, color, form, adaptation, hardiness and effects when grouped. Students are advised to take Hort 231 as a preliminary.

Elective in Agriculture; junior year; three terms; 3 credits each term; 3 two-hour laboratory periods. Professor Peck.

Hort 337. **History and Literature of Landscape Gardening.** Designed to give the student a good idea of the development of the art, and to bring him into touch with the literature, past and current, that is related to the subject.

Required in Landscape Gardening; junior year; first term; 3 credits; 3 recitations. Professor Peck.

Hort 431. **Theory and Design.** A study of the best works of prominent landscape architects, together with a wide range of collateral reading. Private estates, public parks, and playgrounds, boulevards, and cemeteries are carefully studied. Reports, such as those of park boards and landscape architects, are studied.

Prerequisites: Hort 231, 331, 332, 333. Required in Landscape Gardening; elective in Agriculture; senior year; first term; 4 credits; 1 recitation; 3 three-hour laboratory periods. Professor Peck.

Hort 432. **Theory and Design.** A continuation of Hort 431, in which a large portion of the time is devoted to preparation of planting plans. Outside time is required for collaterial reading.

Prerequisite: Hort 431. Required in Landscape Gardening; senior year; second term; 4 credits; 12 two-hour laboratory periods. Professor Peck.

Hort 434, 435. **Field Practice.** A course in practical problems brought in from the field. The student makes surveys, does the engineering work incidental to the solving of the problem, makes general plans, planting plans, grading plans, details, etc.

Prerequisites: Hort 231, 331, 332, 333. Required in Civil Engineering (freshman or sophomore year); elective to others

(senior year); third term; 4 credits; 12 two-hour laboratory periods. Professor Peck.

Hort 437. **Town Planning.** The underlying ideas of municipal, town, and village improvement; literature and reports studied; town problems discussed; methods of procedure in town improvement worked out.

Required in Landscape Gardening; senior year; third term; 4 credits; 1 recitation; 9 one-hour laboratory periods.

Floriculture

Hort 241. **Plant Propagation and Greenhouse Practice.** This course aims to meet the needs of students who expect to be engaged in agricultural research requiring an understanding of greenhouse practices in the handling of soils, water, sunlight, heat and ventilation. Methods of propagating plant life are studied. Students are required to grow their own stock in the houses and to care for it throughout the term.

Elective in Agriculture; sophomore year; second term; 3 credits; 1 lecture; 1 recitation; 2 two-hour practicums. Fee $1.50. Professor Peck.

Hort 341. **Greenhouse Construction.** A course especially for students specializing in Floriculture and Truck Gardening. The problems connected with the building of greenhouses, hotbeds, and cold frames; the selection of materials; the various systems of heating and ventilating; and the value of the various types of buildings; lectures and laboratory exercises in greenhouses and drafting room.

Elective in Agriculture; junior year; second term; 4 credits; 1 lecture; 9 one-hour laboratory periods.

Hort 441, 442, 443. **Greenhouse Crops.** Actual work in the greenhouse. Propagation, culture, soils, ventilation, watering, and heating. As wide a range of experience as possible in growing of plants used in the florist trade.

Prerequisite: Hort 241. Elective in Agriculture; senior year; three terms; 3 credits each term; 9 hours laboratory work. Professor Peck.

Horticultural Products

Horticultural products work consists of six courses (Hort 351, 352, 353, 451, 452, 453) each course a continuation of the preceding one. These courses include training in canning, evaporation, vinegar manufacture, loganberry-juice manufacture; and the preparation of special products, such as butter, jams, jellies, glace', maraschino, and crushed fruits. The work is conducted on a factory basis, and is handled according to the available products of each season. Instruction in canning embraces grading, blanching, exhausting, capping, sterilization (both open and in retort), manufacture of sirups and brines, labeling, and storage. Both fruits and vegetables are handled. In evaporation, instruction is given with prunes, peaches, apricots, apples, pears, and vegetables, both kiln and tunnel driers being used. Emphasis is placed on grading products, processing, and packing. Special work is offered with loganberry and grape juice, unfermented cider, and vinegars. Instruction is given in manufacture of butter, jellies, glace', maraschino, and crushed fruit.

Hort 351, 352, 353. **Horticultural Products.** Elective in Agriculture; junior year; three terms; 3 credits each term; 1 recitation; 3 two-hour laboratory periods. Fee $5.00 each term. Assistant Professor Wiegand.

Hort 451, 452, 453. **Horticultural Products.** Elective in Agriculture; senior year; three terms; 3 credits each term; 1 lecture; 3 two-hour laboratory periods. Fee $5.00 each term. Assistant Professor Wiegand.

Research

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.

Hort 491, 492, 493. **Investigative Work for Seniors.** This course is offered for those seniors who are contemplating following college, experiment station, or Government work as a life career, and for those who desire practice in research technique. Problems are assigned which give experience in the laboratory, greenhouse, field, and library.

Elective in Agriculture; senior year; three terms; 3 credits; 2 lectures. Professor Harvey.

Hort 494, 495, 496. **Methods of Research.** Conducted as a research round table, this course gives drill in making of briefs and outlines of research problems, methods of procedure in conducting investigative work, and the preparation of bulletins and reports. Research problems being studied by the department of Horticulture are taken up. Close study is made of the research work presented in bulletins from other institutions.

Elective in Agriculture; senior or graduate year; three terms; 1 or 2 credits; 2 lectures. Professor Harvey.

Hort 691, 692, 693. **Advanced Thesis and Research Work.** For graduate students only. Problems in Pomology, Vegetable Gardening, Landscape Gardening, Floriculture, Plant Breeding, as selected by student.

Elective in Agriculture; graduate year; three terms; 10 to 20 credits each term. Professor Harvey.

Vocational Horticulture

Hort 11, 12, 13. **Orchard Management.** This course aims to give as much practical instruction in Horticulture as can be consistently given in the time allowed to persons without uniform preparation for the work. Emphasis is laid continually on laboratory and field work. The course takes up the various phases of Horticulture from the cultivation of the orchard until the crop is harvested, and includes such subjects as harvesting, grading, packing, pruning, spraying, thinning, fruit setting, etc.

Elective; three terms; 5 credits each term; 3 recitations; 3 two-hour laboratory periods. Fee $1.50 each term. Text: Sears, Productive Orcharding. Mr. Locklin.

One-Year Vocational Curriculum in Vegetable Gardening

The one-year curriculum in Vegetable Gardening includes the following courses:

Hort 21, 22, 23. **Vegetable Gardening.** The work given during the fall term consists largely of a study of the important varieties of vegetables, methods of harvesting, packing, and marketing

fall and winter vegetables, manner of handling vegetables for storage, fall management of the vegetable garden, observations of methods of selecting stocks of biennial vegetables for seed, and saving seed of annual vegetables. Attention during the winter term is directed to principles of production of vegetable crops such as soil adaptability, selection of areas for certain vegetables, plans and methods of cropping, fertilizing materials and their application, value and methods of irrigation, field seeding, transplanting, etc. During the spring term study is made of methods of vegetable seedling production and actual methods of growing of all important vegetables. Attention is also given to greenhouse and frame crops which are grown to maturity during spring and summer. The texts are mimeographed notes and assigned references.

One-year Vocational Curriculum in Vegetable Gardening; three terms; 3 credits each term; 2 recitations; 1 two-hour laboratory period. Professor Bouquet.

POULTRY HUSBANDRY

Poultry keeping is rapidly growing in importance as a definite part of every well-regulated system of diversified farming, and at the same time offers opportunity for profit-making as a specialized business. The climate of Oregon is particularly adapted to the successful raising of poultry.

Equipment. The equipment consists of a five-acre tract of land; a two-story Poultry Building with laboratories for incubation, judging, killing, egg handling, and carpentry, equipped with appliances necessary for practical poultry keeping. Twenty different makes of incubators are available for student practice in incubation. There are twenty-four colony poultry houses of different types, and hatching and brood coops of various styles. Large flocks of Barred Plymouth Rocks and White Leghorns used in experimental breeding work are available for study, and there are pens of several other of the more common breeds and varieties, and individual specimens of 32 of the less common breeds, which are used for student study and practice. There are also sets of charts, lantern slides, motion pictures, and photographs, illustrating breeds of fowls, types of poultry houses, and equipment.

COURSES

PH 201. **Practical Poultry Keeping.** A brief course dealing with practical application of the principles of Poultry Husbandry to general farm conditions. An introductory course for those intending to specialize in this field, recommended also for those who wish a single, elementary course in Poultry Husbandry.

Optional in Agriculture; sophomore year; first term; 3 credits; 2 lectures or recitations; 1 two-hour laboratory period. Fee $1.00. Text: Lippincott, Poultry Production. Assistant Professor Brewster.

PH 311. **Poultry Breeding, Breeds, and Judging.** A study of breeds of poultry, their history and classification; principles and methods of breeding for different purposes; laboratory work in judging from fancy and utility standpoints.

Prerequisite: PH 201. Optional in Agriculture; required in Poultry Husbandry; junior year; first term; 4 credits; 2 recitations;

2 two-hour laboratory periods. Fee $1.00. Deposit $1.00. Text: Dryden, Poultry Breeding and Management. Assistant Professor Brewster.

PH 321. **Incubation and Brooding.** 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 201. Optional in Agriculture; required in Poultry Husbandry; junior year; second term; 4 credits; 2 recitations; 2 two-hour laboratory periods. Fee $1.50. Deposit $1.00. Assistant Professor Brewster.

PH 331. **Poultry-House Design and Construction.** A study of the principles of poultry-house designing; estimating the cost of buildings; studying building plans; practice in erecting, remodeling, and making appliances; excursions to neighboring farms.

Prerequisite: PH 201. Optional in Agriculture; required in Poultry Husbandry; junior year; third term; 4 credits; 2 recitations; 2 laboratory periods. Fee $2.00. Deposit $1.00. Assistant Professor Brewster.

PH 441. **Poultry Feeding.** A study of feeds suitable for poultry; principles and practice of feeding for egg production and fattening; feeding young and growing chicks; feeding appliances; the compounding of rations; actual practice in feeding a flock of hens.

Prerequisite: PH 201. Optional in Agriculture; required in Poultry Husbandry; senior year; first term; 4 credits; 2 recitations; 2 two-hour laboratory periods. Fee $1.00. Deposit $1.00. Assistant Professor Brewster.

PH 451. **Marketing Poultry Products.** Preparation of poultry and eggs for market; methods of storage and preservation; methods of marketing; laboratory work in killing, picking, grading, packing, and shipping poultry; testing, grading, packing, and storing eggs.

Prerequisite: PH 201. Optional in Agriculture; required in Poultry Husbandry; senior year; second term; 4 credits; 2 recitations; 2 two-hour laboratory periods. Fee $2.00. Deposit $1.00. Assistant Professor Brewster.

PH 461. **Commercial Poultry Practice.** Selection of the location; lay-out and arrangement of buildings; study of records; each student working out complete plans for the lay-out and management of a commercial poultry enterprise.

Prerequisites: PH 321, 331, 441, 451. Optional in Agriculture; required in Poultry Husbandry; senior year; third term; 4 credits; 2 recitations; 2 two-hour laboratory periods. Fee $1.00. Deposit $1.00. Assistant Professor Brewster.

PH 481, 482, 483. **Seminar.** 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.

Required in Poultry Husbandry; senior year; three terms; 1 credit; 1 meeting a week. Assistant Professor Brewster.

Vet Med 309. **Anatomy of the Fowl.** Elective in Agriculture; required in Poultry Husbandry; 2 credits; 1 lecture or recitation; 1 laboratory period. (See courses in Veterinary Medicine.)

Vet Med 351. **Poultry Diseases.** Elective in Agriculture; required in Poultry Husbandry; third term; 2 credits; 1 lecture or recitation; 2 laboratory periods. (See courses in Veterinary Medicine.)

SOILS

The work in Soils includes soil physics, soil drainage, irrigation farming, dry farming, soil fertility, soil surveying, soil biology, and soil management. The purpose of the courses in Soils is to give the student thorough training in this important phase of agriculture, making him competent for his work on the 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 state and Federal aid to 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 the soil so as to secure the highest possible efficiency for each unit of tiling employed.

Equipment. The soils laboratory is equipped with apparatus for the complete study of the physical 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, etc., form 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 benches, soil-grinding and sifting machinery, and ample 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 fitted with

desks, ovens, etc., afford opportunity 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 pipe for laterals, and test pumping machinery. On the drainage plots, the rate of discharge is measured and the effect of drains and soil conditions on water table are studied. The Exhibit Room is equipped with cases and racks for displays of soil sample collections, subsoils, hardpans, 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, offer opportunity for field study of soil problems.

COURSES

Soils 201, 202. **Soils.** 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.

Prerequisites: Chem 100 and 101. Required in Agriculture; sophomore year; first and second terms; 3 credits each term; 2 lectures; 1 recitation; 2 two-hour laboratory periods. Fee $2.00 each term. Deposit $2.00 each term. Text: Lyon, Fippin, and Buckman, Soils. Professor Ruzek, Assistant Professor Torgerson, and Mr. Johnston.

Soils 203. **Soil Drainage and Irrigation.** Principles of drainage and of irrigation; use of chain and level as applied to location and installation of tile drains or irrigation laterals; design of tile systems; their effects upon soils and crops; costs and benefits.

Required in Agriculture; sophomore year; third term; 3 credits; 2 recitations; 1 three-hour laboratory period. Fee $1.00. Deposit $1.00. Professor Powers.

Soils 311. **Irrigation Farming.** 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 and irrigation codes; field and

laboratory studies of irrigation qualities of different soils; laying out of irrigation systems.

Elective; junior year; first term; 3 credits; 2 recitations; 1 three-hour laboratory period. Fee $1.00. Deposit $1.00. Text: Widtsoe. Professor Powers and Mr. Johnston.

Soils 312. **Irrigation Farming Elective.** Special course for Irrigation Engineering students or other students who cannot take the laboratory course in Irrigation Farming.

Elective; junior or senior year; first term; 2 credits; 2 recitations. Professor Powers.

Soils 314. **Western Land and Water Laws.** 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.

Elective; junior year; second term; 3 credits; 3 recitations. Text: Chandler. Professor Powers.

Soils 317. **Dry Farming.** Advanced study of the subject of moisture conservation, special tillage methods and machinery, soil and climatic conditions, etc., in dry-farming regions, with particular reference to Oregon and northwestern states.

Prerequisite: Soils 211 or 215. Elective; junior or senior year; second term; 2 credits; 2 recitations. Professor Powers.

Soils 318. **Land Drainage.** Field study of road, soil, and sanitary drainage; actual surveying, laying out, drafting of plans, estimation of cost, and installation of drainage systems; preparation of a complete report of the organization of a drainage district.

Prerequisite: Soils 201. Elective; junior year; third term; 3 credits; 1 recitation; 2 three-hour laboratory periods (week end). Fee $1.00. Deposit $1.00. Professor Powers.

Soils 331. **Climatology.** Practical meteorology; observing and recording local weather and forecasting; a study of the climate of Oregon and the effect of climate upon agriculture. (Given alternate years.)

Elective; junior or senior year; second term; 2 credits; 1 recitation; 1 two-hour laboratory period. Fee $1.00. Deposit $1.00. Professor Powers and Assistant Professor Torgerson.

Soils 411. **Irrigation Field Practice.** This course aims to give practical knowledge of irrigation farming conditions. Careful records are kept of water used on different soils and crops and of the yield obtained from definite areas. This work may be done during the summer months in connection with duties as ditch rider or other field agent. A report is required and work is to be outlined with the instructor in advance.

Prerequisite: Soils 311. Elective; junior or senior year; any term; 2 to 4 credits. Professor Powers.

Soils 414. **Advanced Irrigation.** 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 secured; 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.

Senior year; first term; 3 credits. Fee $0.50. Professor Powers and Assistant Professor Johnston.

Soils 417. **Irrigation Management.** A study of the operation and maintenance of irrigation systems; methods and records for water masters; control of agencies destructive to ditches; cost and durability of materials used in distribution of water on the farm; water rotations for different types of farming.

Required in Drainage and Irrigation; senior or graduate year; third term; 1 credit. Professor Powers.

Soils 421. **Soil Physics.** 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.

Elective; senior year; first term; 5 credits; 3 recitations; 2 three-hour laboratory periods. Fee $1.00. Deposit $2.00. Text:

Mosier and Gustafson, Laboratory Manual. Professor Powers and Assistant Professor Torgerson.

Soils 422. **Soil Physics. Elective.** Similar to course 421, but without laboratory work, for agricultural students unable to take the regular course in Soil Physics and for students in Irrigation Engineering.

Elective; senior year; first term; 3 credits; 3 recitations. Fee $1.00. Deposit $1.00. Text: Mosier and Gustafson. Professor Powers.

Soils 424. **Soil Fertility.** 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: Soils 421. Elective; senior year; second term; 5 credits; 3 recitations; 2 three-hour laboratory periods. Fee $2.00. Deposit $2.00. Professor Ruzek.

Soils 425. **Soil Fertility Lectures.** Same as Soils 424, except no laboratory work.

Elective; senior year; second term; 3 credits; 3 recitations. Fee $0.50. Professor Ruzek.

Soils 427. **Soil Surveying.** 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 field work in making regular and completed soil surveys of assigned areas, with a report thereon.

Prerequisite: Soils 421 or 424. Elective; senior year; third term; 3 credits; 1 recitation; 2 three-hour laboratory periods. Fee $1.00. Assistant Professor Torgerson.

Soils 428. **Soil Management.** Occurrence, composition, characteristics, productivity, plant-food requirements, comparative values, and management of different soil types of Oregon.

Prerequisite: Soils 424. Elective; senior or graduate year; third term; 2 credits; 2 recitations. Professor Powers.

Soils 441, 442. **Advanced Soil Work.** 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.

Prerequisites: Soils 411 and 421. Elective; senior or graduate year; any term; 2 to 5 credits each term. Fee $1.00 each term. Deposit $2.00. Professors Powers and Ruzek.

Soils 451, 452. **Advanced Drainage or Irrigation Work.** Special problems in either subject, such as the drainage of alkali lands, drainage against seepage, study of water-table fluctuations, run-off, etc.; or field studies of the duty of water for a certain district, conservation of irrigation waters, effect of irrigation on soil moisture conditions, etc., as selected by the student.

Elective; senior year; any term; 2 to 5 credits each term. Fee $0.50 each term. Deposit $1.00. Professor Powers.

Soils 481. **Seminar.** Semi-weekly meetings, alternating with those of the Soil Improvement Club, at which papers on soils subjects are read and discussed. Papers are prepared under supervision of the department.

Required in Soils; junior or senior year; three terms; one-half credit each term. Professors Powers and Ruzek.

Research

The department of Soils is well equipped for offering research work. The experimental fields, soil tanks, laboratories, and library, and the plans and methods used in soil, irrigation, and drainage investigations offer valuable opportunities to the graduate students.

Soils 601, 602, 603. **Advanced Thesis and Research Work.** A course for graduate students either as major or minor. Students are allowed to select problems in soil physics, analysis, surveying, fertility, irrigation, drainage, soil management, dry farming, or related subjects.

Elective; graduate students; three terms; 5 to 15 credits each term.

Soils 50. **Farm Soils.** Brief history of origin of soils; fertility of soils; most valuable chemical constituents; their exhaustion and replenishment; most important physical factors; their deterioration and improvement; the physical components; their relative value and amounts in soil mixtures; practice in judging the chief

soil types of Oregon; effects upon soils of tillage, manuring, crop rotation, drainage, and irrigation.

Vocational Curriculum; first term; 5 credits; 3 recitations; 2 two-hour laboratory periods. Fee $1.00. Deposit $1.00. Text: Whitson and Walster, The Soil. Assistant Professor Torgerson.

Soils 60. **Practical Farm Drainage.** The value of drainage, the methods and cost of installing drainage systems under different soil and land conditions, district drainage, etc.

Vocational Curriculum; third term; 3 credits; 2 recitations; 1 two-hour laboratory period. Fee $1.00. Professor Powers.

Soils 70. **Irrigation Farming Practices.** The most effective methods of handling irrigation waters; the different crops under irrigation; and the cost and profits thereof; organization as affecting water use and control in irrigated districts. (Offered provided six or more students register for the course.)

Elective in Vocational Curriculum; first term; 3 credits; 2 recitations; 1 two-hour laboratory period. Fee $0.50. Text: Fortier, Use of Water in Irrigation. Mr. Johnston.

80. **Dry-Farming Practices.** Methods of handling soils under dry-farming conditions; tillage; seeding; moisture control; usable water capacity of dry-farming soils; root systems of dry-land plants, etc. (Offered provided six or more students register for the course.)

Elective in Vocational Curriculum; second term; 2 credits; 2 recitations. Fee $0.50. Professor Powers.

VETERINARY MEDICINE

The object of the courses in Veterinary Medicine is to help fit the students for the successful handling of live stock. Comparative Anatomy and Comparative Physiology 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 with diseases is taken up from the standpoint of the live-stock 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 office, physiological laboratory, and lecture room on the second floor of the Dairy Building. Dissections, autopsies, and clinics are conducted in a suitably equipped Veterinary Clinic Building.

COURSES

Vet Med 301. **Comparative Anatomy.** 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: Zool 130 or equivalent. Required in Animal Husbandry and in Dairy Manufactures; junior year; first term; 3 credits; 1 lecture; 3 two-hour laboratory periods. Fee $1.00. Professor Simms.

Vet Med 302. **Comparative Anatomy.** Continuation of Vet Med 301.

Prerequisite: Vet Med 301. Required in Animal Husbandry and in Dairy Manufactures; junior year; second term; 3 credits;

2 lectures; 2 two-hour laboratory periods. Fee $1.00. Professor Simms and Dr. Miller.

Vet Med 309. **Anatomy of the Fowl.** A study of the structure of the body of the fowl.

Required in Poultry Husbandry; junior or senior year; 3 credits; 2 lectures; 2 two-hour laboratory periods. Fee $1.00. Text: Kaupp, Anatomy of the Domestic Fowl.

Vet Med 321. **Comparative Physiology.** Study of the functions of the body; the physiological processes of all domestic animals considered, with emphasis on the horse and the cow.

Prerequisites: Vet Med 302, Chemistry, or equivalent. Required in Animal Husbandry and Dairy Manufactures; junior year; third term; 3 credits; 3 lectures; 1 two-hour laboratory period. Fee $1.00. Professor Simms.

Vet Med 341. **Diseases of Live Stock.** A one-term course for students specializing in the Plant Group. The more common diseases, with methods of prevention and control are considered. The laboratory work consists of a free clinic.

Elective; junior or senior year; first term; 4 credits; 2 lectures; 2 recitations; 1 two-hour laboratory period. Fee $0.50. Text: Craig, Common Diseases of Domesticated Animals. Professor Simms and Dr. Miller.

Vet Med 351. **Diseases of Poultry.** The parasitic, infectious, and noninfectious diseases of poultry; emphasis upon methods of prevention and control of the parasitic and infectious diseases; observation of autopsies, methods of diagnosis, and treatment of fowls.

Required in Poultry Husbandry; junior or senior year; third term; 3 credits; 3 recitations; 1 two-hour laboratory period. Fee $0.50. Text: Pearl, Diseases of Poultry.

Vet Med 441, 442, 443. **Diseases of Live Stock.** The parasitic, infectious, and noninfectious diseases of domesticated animals. The laboratory work consists of a free clinic. Students assist in handling the medical cases, operating on the surgical cases, and caring for the animals in the hospital.

Prerequisites: Vet Med 302 and 321, or equivalent. Required in Animal Husbandry and Dairy Manufactures; senior year; three terms; 3 credits each term; 2 recitations; 1 two-hour laboratory period. Fee $0.50 each term. Text: U. S. D. A. Diseases of Horses. Professor Simms and Dr. Miller.

Vet Med 41. **Diseases of Domestic Animals.** The study of the common diseases of live stock, veterinary sanitation, and veterinary hygiene.

Required in Vocational Curriculum; third term; 5 credits; 3 recitations; 1 lecture; 2 two-hour laboratory periods. Fee $0.50. Text: Hadley, The Horse in Health and Disease. Dr. Miller.

SCHOOL OF COMMERCE

WILLIAM JASPER KERR, D. Sc., President of the College
JOHN ANDREW BEXELL, A. M., Dean of the School of Commerce; Professor of Accounting and Business Management.
MABLE ROBINSON, Secretary to the Dean

LILLIAN BURNS, B. S., Instructor in Stenography
JOHN CORCORAN, B. S., Assistant Professor of Business Administration
NEWEL HOWLAND COMISH, M. S., Associate Professor of Economics and Sociology
WILLLIAM HENRY DREESEN, Ph. D., Assistant Professor of Economics and Sociology
ULYSSES GRANT DUBACH, Ph.D., Professor of Government and Business Law
MINNIE KOOPMAN, Instructor in Office Training
ERWIN BERTRAN LEMON, B. S., Assistant Professor of Business Administration
HECTOR MACPHERSON, Ph. D., Professor of Economics and Sociology; Director of the Bureau of Organization and Markets
ETHA MABEL MAGINNIS, Assistant Professor of Office Training
FRANK ABBOTT MAGRUDER, Ph. D., Associate Professor of Government and Business Law
PAUL MEHL, M. S., Marketing Specialist
BERTHA ALICE WHILLOCK, B. S., Instructor in Office Training
HERBERT TOWNSEND VANCE, Professor of Office Training

The School of Commerce offers two distinct courses of study; namely, (1) a four-year curriculum leading to the degree of Bachelor of Science in Commerce; (2) a two-year vocational curriculum leading to a Certificate. The practical side of every subject is emphasized, the constant aim being to train the student for service and efficiency.

The Degree Curriculum. In the degree curriculum lower classmen may emphasize either accounting or secretarial studies, the latter including stenography and office practice. In the junior year, the student may further specialize in one of the following: (1) Business Administration, (2) Economics and Sociology, (3) Political Science, (4) Secretarial Studies. Instead of the above options, a liberal range of general electives is offered, so that in the junior or senior year, the men may elect courses in Agriculture, Forestry, or Industrial Arts, while the women may elect courses in Home Economics.

The Vocational Curriculum. This curriculum has been arranged primarily for the benefit of persons who have been unable to finish high school. The only entrance requirements are that the applicant must have had an eighth grade education, or its equivalent, and must be at least eighteen years of age. The student may emphasize bookkeeping and business methods, or stenography and typewriting; or he may have an opportunity to take both groups of courses.

Departments. For administrative purposes, the School of Commerce is organized into four distinct departments: (1) Business Administration, (2) Economics and Sociology, (3) Political Science, and (4) Stenography and Office Training.

Requirements for Graduation in the School of Commerce. For the bachelor's degree in the School of Commerce, a total of 201 college credits must be completed by men, and 192 credits by women. It is expected that the suggested schedule as listed elsewhere for this School will be closely followed. Before graduation, a student must complete credits as indicated in the following table:

Business Administration and Office Training	41	credits
Economics and Sociology	32	"
Political Science	28	"
General English or Modern Language	9	"
Business English	9	"
Mathematics	9	"
Science	9	"
History	8	"
Library Practice	1	"
Gymnasium (Men)	3	"
Gymnasium (Women)	6	"
Military Science and Tactics	12	"
Free electives	40	"
Total	201	"

DEGREE CURRICULUM IN COMMERCE

Business Administration

Freshman Year	Term 1st	2d	3d
Bookkeeping and Business Methods (BA 101)*	3		
Principles of Accounting (BA 102)		3	
Corporation Accounting (BA 103)			3
Counting Room Mathematics (Math 101)	3		
Mathematics of Investments (Math 102)		3	
Mathematics of Statistics (Math 103)			3
Typing (OT 151, OT 152, OT 153)	2	2	2
English Composition (Eng 101)	3		
Business Correspondence (Eng 105)		3	
Advanced Business English (Eng 106)			3
Commercial Geography (ES 101)	4		
Economic History of Europe (ES 111)**		4	
Contemporary American History (Hist 122)**			3
Library Practice (Lib 100)			1
Hygiene (For Women)	(1)		
Gymnasium (Men)	½	½	½
Gymnasium (Women)	(1)	(1)	(1)
Military Science and Tactics	1	1	1
	16½	16½	16½

* Students who have had at least one year of bookkeeping should register for BA 102 the first term and BA 103 the second term.

**Optional with HA 118 and HS 101.

Sophomore Year	Term 1st	2d	3d
Advanced Theory and Practice of Accounting (BA 201)	3		
Industrial Accounting (BA 202)		3	
Cost Accounting (BA 203)			3
Office Methods and Appliances (OT 251)	2		
Office Management (OT 252, OT 253)		2	2
Advanced Business Law (PS 201, PS 202)	4	4	
Principles of Economics (ES 203)			4
Economic History of United States (ES 201)*	3		
History of Oregon (Hist 241)*		3	
Modern European History (Hist 212)*			3
English Literature or Modern Language	3		
American Literature or Modern Language		3	
Public Speaking or Modern Language			3
Gymnasium (Men)	½	½	½
Gymnasium (Women)	(1)	(1)	(1)
Military Science and Tactics	1	1	1
	16½	16½	16½

* Optional with Science. Nine credits in Science are required for graduation. The following are recommended: Chem 101, 102, 103; Phys 201, 202; Bact 201; Zool 321; Bot 101. Students who plan to minor in Home Economics are urged to register for the required Chemistry in their freshman or sophomore years. (Chem 221, 222, 10 credits.)

Stenography and Office Training Freshman Year	Term 1st	2d	3d
Elementary Stenography (OT 101, OT 102, OT 103)	3	3	3
Elementary Typing (OT 151, OT 152, OT 153)	2	2	2
Bookkeeping and Business Methods (BA 101)*	3		
Principles of Accounting (BA 102)		3	
Corporation Accounting (BA 103)			3
English Composition (Eng 101)	3		
Business Correspondence (Eng 105)		3	
Advanced Business English (Eng 106)			3
Economic History of Europe (ES 111)**	4		
Contemporary American History (Hist 122)**		3	
Commercial Geography (ES 101)			4
Library Practice (Lib 100)		1	
Hygiene (For Women)	(1)		
Gymnasium (Men)	½	½	½
Gymnasium (Women)	(1)	(1)	(1)
Military Science and Tactics	1	1	1
	16½	16½	16½

* Students who have had at least one year of bookkeeping, should register for BA 102 the first term, and BA 103 the second term.

** Optional with HA 118, and HS 109.

Sophomore Year			
Advanced Stenography and Typing (OT 201, OT 202)	5	5	
Office Training for Stenographers (OT 203)			5
Advanced Business Law (PS 201, PS 202)	4	4	
Principles of Economics (ES 203)			4
Economic History of United States (ES 201)*	3		
History of Oregon (Hist 241)*		3	
Modern European History (Hist 212)*			3
English Literature or Modern Language	3		
American Literature or Modern Language		3	
Public Speaking or Modern Language			3
Gymnasium (Men)	½	½	½
Gymnasium (Women)	(1)	(1)	(1)
Military Science and Tactics	1	1	1
	16½	16½	16½

* Optional with science. See footnote page 139

Junior Year*	Term 1st	2d	3d
Business Organization (BA 331)	3		
Business Management (BA 332)		3	
Purchasing and Selling (BA 343)			3
Money and Banking (ES 311)	4		
General Sociology (ES 305)		4	
National Government (PS 301)	3		
State and Local Government (PS 302)		3	
Municipal Government (PS 303)			3
Military Science and Tactics	2	2	2
Electives	5	5	9
	17	17	17

Senior Year*			
Public Finance (ES 401)	4		
Markets and Marketing (ES 402)		4	
Transportation (ES 403)			4
Comparative Study of Governments (PS 401)	3		
International Relations (PS 402)			4
Electives	10	13	9
	17	17	17

* The junior and senior schedules may be modified to suit the individual student, provided that the requirements for graduation are met as stated on page 137.

Suggested Elective Combinations

While the student may choose other subjects than those enumerated below, he is strongly urged to adopt one of these suggested combinations.

1. Business Administration

Junior Year	Term 1st	2d	3d
Bank Accounting (BA 301)	3		
Auditing (BA 302)		3	
C. P. A. Problems (BA 303)			3
Public Speaking			3
Free electives	2	2	3
	5	5	9

Senior Year			
Governmental and Institutional Accounting (BA 401)	3		
Analysis of Accounts (BA 402)		3	
Elements of Statistics (ES 313)			3
Principles of Advertising (BA 441)		3	
Journalism (IJ 200)	3		
Markets and Marketing (ES 402)			4
Free electives	4	7	2
	10	13	9

2. Economics and Sociology

Junior Year			
Modern Language	3	3	3
Cooperation (ES 323)			4
Free electives	2	2	2
	5	5	9

Senior Year

	Term 1st	2d	3d
Governmental and Institutional Accounting (BA 401)	3		
Analysis of Accounts (BA 402)		3	
Thesis in Accounting and Business Management (BA 403)			3
Modern Language	3	3	3
Free electives	4	7	3
	10	13	9

3. Political Science

Junior Year

English	3	3	3
Free electives	2	2	6
	5	5	9

Senior Year

Governmental and Institutional Accounting (BA 401)	3		
Analysis of Accounts (BA 402)		3	
Thesis in Accounting and Business Management (BA 403)			3
Practical Legislation (PS 412)		4	
Advanced American Government (PS 411)	4		
Latin American Institutions (PS 413)			4
Free electives	3	6	2
	10.	13	9

4. Office Training

Junior Year

Reporters' Course (OT 401, OT 402, OT 403)	3	3	3
Advanced Theory and Practice of Accounts (BA 201)			3
Free electives	2	2	3
	5	5	9

Senior Year

	Term 1st	2d	3d
Principles of Advertising (BA 441)		3	
General Psychology (ES 305)	3		
Applied Sociology (ES 413)		3	
Markets and Marketing (ES 402)			4
Journalism (IJ 200)	3		
Free electives	4	7	5
	10	13	9

5. Minor in Commercial Education

Junior Year

In School of Vocational Education	3	3	3
Free electives	2	2	6
	5	5	9

Senior Year

In School of Vocational Education	3	3	3
Free electives	7	10	6
	10	13	9

Similarly a student may choose combinations as follows:

6. Minor in Agriculture

7. Minor in Home Economics

8. Minor in Engineering

9. Minor in Physical Education

10. Minor in Industrial Journalism

VOCATIONAL CURRICULUM IN COMMERCE

First Year	Term 1st	2d	3d
Bookkeeping and Business Methods (BA 101) or Elementary Stenography (OT 101)	3		
Principles of Accounting (BA 102) or Elementary Stenography (OT 102)		3	
Corporation Accounting (BA 103) or Elementary Stenography (OT 103)			3
Elementary Typewriting (OT 151, OT 152, OT 153)	2	2	2
English (Eng 11, 12, 13)	3	3	3
Business and Social Organization (ES 11)	3		
United States History (Hist10)		3	
American Civil Government			3
Mathematics (Math 91, 92, 93)	3	3	3
Penmanship (BA 11, BA 12, BA 13)	1	1	1
Gymnasium (Men)	½	½	½
Gymnasium (Women)	(1)	(1)	(1)
Military Science and Tactics	1	1	1
	16½	16½	16½
Second Year			
Advanced Theory and Practice of Accounting (BA 201)	3		
Industrial Accounting (BA 202)		3	
Cost Accounting (BA 203)			3
Office Methods and Appliances (OT 251)	2		
Office Management (OT 252, OT 253)		2	2
Business English (Eng 21, 22, 23)	3	3	3
Elementary Commercial Geography (ES 21)	3		
Elementary Industrial History (ES 22)		3	
Business Law (PS 23)			3
Penmanship (BA 21, BA 22, BA 23)	1	1	1
Elective	3	3	3
Military Science and Tactics	1	1	1
Gymnasium (Men)	½	½	½
Gymnasium (Women)	(1)	(1)	(1)
	16½	16½	16½

BUSINESS ADMINISTRATION

The distinctive work of the department of Business Administration is to train men and women for efficient business organization and management. This includes thorough courses in the various phases of Accounting, Auditing, Business Organization, Scientific Management, Advertising, and Salesmanship.

While the courses in Business Administration are primarily designed to fit students for the counting-house and business office, including banking, such positions are generally only stepping stones to work of greater trust and responsibility. A large percentage of the commercial students eventually engage in business of their own.

The School of Commerce has taken a leading part in developing courses in business methods especially adapted to the farm and other industrial enterprises, the home, and cooperative institutions. Such courses are given not only in residence but also by correspondence.

When it is remembered that every vocation has its business side, and that this phase of all pursuits is receiving increasing attention, it is apparent that the avenues of employment and the chances for promotion for the really competent business expert are almost unlimited. As a preparation for law or public accounting, the work of this department, combined with Economics and Political Science, is especially attractive. A large proportion of the graduates in Commerce find employment as teachers of commercial subjects in state and private schools; to them the courses in Business Management are very important.

Equipment. The department of Business Administration occupies the top floor of the north wing of Agricultural Hall. It is completely equipped for thorough and efficient work in modern business courses. Each room is specially designed and furnished for the work to be conducted in it. The furniture of the department consists of individual desks and counters and complete sets of modern office fixtures. Permanent blank books, letter files, rubber stamps, copying presses, blanks, and similar material are provided by the College. Two Burroughs Adding Machines are in constant use in the department. The room for typewriting contains fifty-five standard machines, each provided with approved conveniences for the operator. The office-training laboratories are

furnished with desks designed for convenience in practical work and contain equipment for illustrating various systems of filing.

For outline of courses in Business Administration, see pages 138-142.

COURSES

BA 101. **Bookkeeping and Business Methods.** A thorough but rapid study of the general principles of bookkeeping. The aim of this course is to afford those students entering the Vocational or Degree curricula in Commerce, who have not had a year of bookkeeping, an opportunity to secure preparation which will enable them to carry course BA 102.

Required in Commerce (freshman year) and in Vocational Curriculum (first year); any term; 3 credits; 3 recitations. Fee $1.00. Text: 20th Century Bookkeeping and Accountancy. Assistant Professor Corcoran.

BA 102. **Principles of Accounting.** Modern accounting as practiced in the best business establishments; the use of special columns; controlling accounts, and their adaptations; labor-saving devices of all kinds studied with a constant view to secure greater accuracy and to diminish work; practice in retail, wholesale, and commission accounting; and the preparation and interpretation of financial statements.

Prerequisite: Course BA 101 or equivalent. Required in Commerce (freshman year) and in Vocational Curriculum (first year); any term; 3 credits; 2 recitations; 3 two-hour laboratory periods. Fee $1.00. Text: 20th Century Bookkeeping and Accountancy. Assistant Professor Corcoran.

BA 103. **Corporation Accounting.** Theory of manufacturing bookkeeping and the preparation of books illustrating corporation bookkeeping as applied to manufacturing business; a further study of special-column books, card systems, and filing devices, with reference to the saving of time and labor in bookkeeping, as applied to modern corporation business; preparation of books illustrating the principles involved.

Prerequisite: Course BA 102 or equivalent. Required in Commerce (freshman year) and in Vocational Curriculum (first year); any term; 3 credits; 1 recitation; 3 two-hour laboratory

periods. Fee $1.00. Text: 20th Century Bookkeeping and Accountancy, supplemented by selected problems. Assistant Professor Corcoran.

BA 201. **Accounting Practice.** Depreciation, reserves, and investment accounting; advanced forms of financial statements; statement of affairs and deficiency account; realization and liquidation; business practice to supplement all the theoretical courses and to develop initiative and originality.

Prerequisite: Course BA 103. Required in Commerce (sophomore year) and in Vocational Curriculum (second year); any term; 3 credits; 2 recitations; 2 two-hour laboratory periods. Fee $1.00. Text: Klein, Elements of Accounting. Assistant Professor Corcoran.

BA 202. **Industrial Accounting.** A study of the accounting required by different industrial enterprises such as cooperative stores, grain elevators, creameries, large estates, etc. Publications issued by the United States Office of Markets are the basis of this course.

Prerequisite: Course BA 201. Required in Commerce; sophomore year; second term; 3 credits; 1 lecture; 1 recitation; 2 two-hour laboratory periods. Fee $1.00. Assistant Professor Lemon.

BA 203. **Cost Accounting.** This course covers the broader economic phases of accounting. Emphasis is laid on accounts as a means of administrative control and economy of production. (a) Theory of Cost Accounting. The elements of costs; cost and stock records; relation of cost accounts to the financial records; distribution of overhead; cost statements; graphical representation of costs. (b) Factory Costs. A laboratory course especially adapted to a manufacturing business with a considerable pay-roll.

Prerequisite: Course BA 103 or BA 261. Required in Commerce; sophomore year; third term; 3 credits; 1 lecture; 1 recitation; 2 laboratory periods. Fee $1.00. Text: Nicholson, Cost Accounting. Assistant Professor Lemon.

BA 231. **Introduction to Accounting.** A thorough but rapid study of the general principles of bookkeeping and accounting, designed for students not taking Commerce who may later desire to familiarize themselves with an accounting system adapted to their particular vocations.

Elective to students other than Commerce; sophomore year; any term; 3 credits; 1 lecture; 2 recitations. Fee $0.50. Assistant Professor Lemon.

BA 301. **Bank Accounting and Administration.** A practical course in bank accounting, organization, and administration; the records and reports required of national and state banks; preparation and interpretation of bank reports; bank and clearing-house statistics; trust companies and savings banks; foreign exchange.

Prerequisite: BA 201 or equivalent. Elective in Commerce; junior year; first term; 3 credits; 1 lecture; 2 recitations. Text: Wolfe, Practical Banking; selected exercises.

BA 302. **Auditing.** The duties and responsibility of the auditor; his function in the executive staff; his relation to the accounting department; different classes of audits; investigation in the conduct of the utility corporations, municipalities, and public institutions. Typical audits will be studied and compared.

Prerequisite: Course BA 201 or BA 203. Elective in Commerce; junior year; second term; 3 credits; 1 lecture; 2 recitations. Text: Montgomery, Auditing in Principle and Practice; selected exercises. Assistant Professor Corcoran.

BA 303. **C. P. A. Problems.** This course covers a large variety of practical problems viewed from the standpoint of the manager rather than the accountant. The material is drawn from certified public accountancy examinations and other sources. The student does not follow any prescribed form of treatment or solution, but is expected to develop analytical initiative, resourcefulness, and originality. Designed as a preparation for the C. P. A. examination.

Prerequisite: Course BA 201 or BA 203. Elective in Commerce; junior year; third term; 3 credits; 2 recitations; 2 two-hour laboratory periods. Text: Cox, C. P. A. Problems; selected exercises. Assistant Professor Corcoran.

BA 331. **Business Organization.** General nature of business organization; evolution and forms of business units; structure and life history of typical corporations; the corporation and trust problem; public utility corporations; reorganization and receivership; blue sky laws and state control.

Required in Commerce; elective to others; junior year; first or second term; 3 credits; 1 lecture; 2 recitations. Text: Haney,

Business Organization. Babson's Reports. Dean Bexell and Assistant Professor Dreesen.

BA 332. **Business Management.** Emphasis on the internal organization of a business for the purpose of securing efficiency; departmental organization and coordination; various systems of scientific management studied and compared.

Required in Commerce; elective to others; junior year; third term; 3 credits; 1 lecture; 2 recitations. Text: The Executive and His Control of Men. Dean Bexell.

BA 343. **Purchasing and Selling.** (a) Purchasing. Principles of purchasing; relations of buying to successful merchandising and manufacturing; ethics of buying; the purchasing organization; records of purchasing; stores, their function and operation; markets; agents; brokers; jobbers; wholesalers; transportation; reports and statistics. (b) Selling. Qualifications of a salesman; business ethics; wholesaling and retailing; brokerage and commission; specialty selling; the sale of service; planning a selling campaign; special sales; prices and profits.

Required in Commerce; elective to others; junior year; third term; 3 credits; 1 lecture; 2 recitations. Texts: Twyford, Purchasing. Neystrom, Retail Selling. Babson's Reports. Dean Bexell.

BA 361. **Farm Accounting and Business Management.** (a) Farm Accounting. A thorough discussion of a system of accounts suited to the farm. Cost accounting is especially emphasized, with a view to determining the results of different enterprises. (b) Business Organization and Management. Individual proprietorship, partnership, joint-stock companies, and corporations; their adaptations from the standpoint of efficiency; status of stockholders; rights and obligations of bondholders; functions of officers and directors treated in detail; principles of efficient business management.

Required in Agriculture; junior year; first term; 3 credits; 1 lecture; 2 recitations. Texts: Bexell and Nichols, Principles of Bookkeeping and Farm Accounts. Robinson, Organizing a Business. Assistant Professor Lemon.

BA 362. **Dairy Accounting.** Students who are not acquainted with the elements of double-entry bookkeeping are required to

work out several practice sets and master the theory of accounts before taking up dairy accounting. In the last third of the course special attention is given to the development of a system of accounts suited to the dairy business.

Elective in Agriculture; junior year; second term; 3 credits; 1 lecture; 2 recitations. Texts: Bureau of Markets Bulletin; I. C. S., Cost Accounting; selected exercises. Assistant Professor Lemon.

BA 363. **Cooperative Accounting and Management.** This course covers the business management of cooperative societies. It includes such subjects as the organization of the employees; buildings, office arrangement and equipment; correspondence and filing; bookkeeping and cost accounting especially adapted to different types of cooperative associations in the United States, such as creamery associations and cow-testing associations; auditing; banking and finance; purchasing; advertising; selling; depreciation of assets; conduct of membership meetings; annual reports and audits; statistical analysis of operations.

Elective; junior year; third term; 3 credits; 1 lecture; 2 recitations. Text: The Cooperative Secretary. United States Bureau of Markets Bulletins. Assistant Professor Lemon.

BA 371. **Business Management for Women.** The aim of this course is to treat in a practical way the ordinary rules and methods of conducting business affairs. Two distinct phases are emphasized as follows: (a) Finance. Value of money, how savings grow, banking and credit, general principles of investment, loan associations, bonds, stocks, and insurance. (b) Fundamentals of Business Law. The principles of the law of contracts, of negotiable paper, mortgages, real property, and wills.

Required in Home Economics; junior year; third term; 3 credits; 1 lecture; 2 recitations. Text: Cromwell, American Business Woman. Assistant Professor Lemon.

BA 381. **Industrial Organization and Management.** Principles of business organization; types; locating an industry; plant and equipment; buying, receiving, storing, and recording material; budget and planning; determination of costs; standardization; scientific management and time studies; wage, welfare, and employment problems; reports to executives.

Required in Engineering; elective to others; junior year; second or third term; 3 credits; 3 lectures and recitations. Text: Diemer, Industrial Organization and Management. Dean Bexell and Assistant Professor Dreesen.

BA 391. **Army Paper Work.** A study of the business methods and accounting of the United States Army as represented by its blanks and forms, and the regulations governing the use of the same. The business methods of the Supply and Adjutant General Department are analyzed and compared with those used in civil life. Considerable outside reading is required to obtain credit in this course.

Elective; junior or senior year; any term; 2 credits; 1 lecture; 1 recitation.

BA 401. **Governmental and Institutional Accounting.** Financial and property accounting, especially as applied to the municipal, state, and national governments and institutions; estimates, appropriations, apportionments, allotments, methods of handling pay; purchase of supplies and equipment; property accounting and accountability; how supplies and property are obtained, issued, and accounted for in the various organizations; the preparation of budgets and reports.

Prerequisite: BA 201 or equivalent. Elective; senior year; first term; 3 credits; 1 lecture; 2 recitations. Text: Government documents and bulletins. Dean Bexell.

BA 402. **Analysis of Accounts.** Interpretation of balance sheets, income sheets, and financial reports; graphical representation of business statistics; preparation of income tax statements.

Prerequisites: BA 302 and BA 332. Elective; senior year; second term; 3 credits; 1 lecture; 2 recitations. Text: Government documents and bulletins. Dean Bexell.

BA 403. **Thesis in Accounting and Business Management.** A research course and treatise on the organization and management of a business in which the student is especially interested. The subject of the thesis must be chosen at the time of registration, and a complete outline approved by the professor in charge, not later than November 1. When the thesis is approved, a bound (either printed or typewritten) copy must be deposited in the College Library.

Prerequisite: All College courses in Accounting and Business Management, or equivalent. Open only to seniors in Commerce;

any term; 3 credits. Subject and list of reading to be approved within two weeks from date of registration. Dean Bexell.

BA 441. **Principles of Advertising.** Psychology and functions of advertising; classification and mediums; writing of copy and proof reading; types and display; engraving and printing methods; advertising and follow-up systems; advertising agencies.

Prerequisite: BA 343. Required in Commerce; elective to others; senior year; second term; 3 credits; 1 lecture; 2 recitations. Dean Bexell.

BA 11, 12, 13. **Penmanship.** Students entering the Vocational Curriculum are expected to have acquired good handwriting in the grades, but considerable time is devoted during the first year to mastering the best form of business writing and lettering.

Required in Vocational Curriculum; first year; three terms; 1 credit each term; 1 recitation. Professor Horner.

BA 21, 22, 23. **Advanced Penmanship.** Emphasis is laid on rapid business writing, correct forms of business papers, lettering, and designing.

Prerequisite: BA 13 or equivalent. Required in Vocational Curriculum; second year; three terms; 1 credit each term; 1 recitation. Professor Horner.

BA 61. **Farm Accounts and Business Methods.** An elementary course in the principles of bookkeeping and business methods as they apply to the farm; farm cost accounts and financial reports, with special reference to the income tax report; special records; inventories, valuation, and depreciation; elements of banking; negotiable papers; the business letter; business forms; office equipment.

Required in Agricultural Vocational Curriculum; second term; 3 credits; 1 lecture; 2 recitations. Assistant Professor Lemon.

BA 62. **Creamery Accounting.** A brief study of the principles of bookkeeping and accounting as applied to the creamery.

Required in Dairy Manufactures Vocational Curriculum; second term; 1 credit; 1 lecture. Text: Bureau of Markets Bulletin and supplementary problems. Assistant Professor Lemon.

BA 71. **Shop Accounting.** A course in the theory and practice of accounting, especially adapted to the shop. Sufficient time is devoted to the fundamental principles of bookkeeping to familiarize the student with the use of special columns and various labor-saving devices. A special set of books adapted to the shop is then studied and prepared, making the course exceptionally practical.

Required in Mechanic Arts Vocational Curriculum; third term; 3 credits; 1 lecture; 2 recitations. Text: I. C. S., Cost Accounting. Original exercises. Not given in 1919-20.

ECONOMICS AND SOCIOLOGY

Including Markets and Rural Organization

The work of this department serves the following purposes:

(1) **To train both men and women for citizenship.** Every citizen has business relations requiring a knowledge of the fundamental principles of economics. The necessity of such knowledge is especially felt in a democracy where every man and woman has the right to vote and is called upon to mold legislation directly. The basis for intelligently exercising this paramount duty of citizenship can only be supplied by a training in economics and sociology, the problems of which form the subject-matter of most legislation.

(2) **To provide economic training for technical students.** Three credits in economics are now required of all students in the College. In consultation with the deans of the various schools, required and elective courses have been worked out supplementary to the work of each school.

(3) **To train specialists in Agricultural Economics and Rural Sociology.** The School of Agriculture provides that students may elect a minor in Agricultural Economics and Rural Sociology. Such a minor affords excellent preparation for those who intend to go back to the farm and assume positions of business, educational, and political leadership. It gives the training needed for positions in state and Federal bureaus of markets. It lays a foundation for a business career as commission man, broker, jobber, wholesaler, or exporter of farm products. It should give the best possible training for positions as county agents, where capacity for leadership outweighs all other considerations.

(4) **To do field work. The Bureau of Organization and Markets.** In 1914 the Board of Regents established the Bureau of Organization and Markets for the purpose of assisting farmers in marketing their products. The Bureau has been carrying on its work in cooperation with the Bureau of Markets of the United States Department of Agriculture.

The work of the Bureau, in the first place, is investigational. It aims to find out the conditions fundamental to successful marketing, and to place the results of its investigation at the disposal

of all who are interested. In the second place, it is at the service of any group of farmers contemplating the establishment of any sort of business organization. It has worked out model constitutions and by-laws and standardized systems of accounting; it has lists of equipment and, in cooperation with the various technical departments of the College, can guide the farmers to where such equipment can be most cheaply obtained. It also assists organizations in planning the kind of plants necessary to carry on their business.

Equipment. The department has for some years been developing a commercial museum for use in the various courses in economic and social science. The museum has now grown to such an extent that it is a very important factor in making the work of the department practical and successful. The Bureau of Organization and Markets also has a collection of bulletins, pamphlets, lantern slides, and documents illustrating the farmers' marketing and organization movement in all parts of the world.

Graduate Curriculum in Agricultural Economics and Rural Sociology. Course sequences will be outlined leading to the degree of Master of Science in Agricultural Economics and Rural Sociology. It is strongly recommended that students wishing to pursue this work follow the Agricultural Curriculum during their first two years in College, and elect a minor in Agricultural Economics and Rural Sociology during their junior and senior years.

Students taking the regular Commercial Curriculum, who contemplate studying for a Master's degree in Agricultural Economics and Rural Sociology, should begin in their sophomore year to take certain courses in Agriculture chosen in consultation with the deans of the schools of Agriculture and Commerce.

The aim is to make the graduate work in this field fit students for positions as county agriculturists, positions in the U. S. Department of Agriculture, especially in the Office of Markets and Rural Organization, teachers in colleges and rural high schools, and for rural leadership in general. Students are also prepared for civil service examinations in this general field.

COURSES

ES 101. **Commercial Geography.** The physiographic basis of commerce and industry; the natural resources of the different countries of the world; the geographic distribution of labor and industry as determined by natural conditions such as climate, topography, soil, and mineral resources. Specimens from the Commercial Museum are used by the students.

Required in Commerce and Industrial Arts (freshman year) and in Mechanical Engineering (sophomore year); any term; 4 credits; 4 recitations. Text: Robinson, Commercial Geography. Assigned Readings, Outline Maps. Assistant Professor Dreesen.

ES 11. **Economic History of Europe.** A course covering the most important economic changes and achievements in Europe during the past three hundred years; study of the rise and decline of the manorial system; important changes in agriculture; rise of the factory system; trades unionism; the development of commercial policies; labor conditions and legislation, together with socialism and social insurance.

Required in Commerce; freshman year; first or second term; 4 credits; 4 recitations. Text: Ogg, Economic Development of Modern Europe. Assistant Professor Dreesen.

ES 201. **Economic History of the United States.** On the basis of a knowledge of our natural resources and of the previous commercial and economic development of the world, attempt is made to outline and interpret the economic and social progress of the United States. The development of agriculture, the growth of manufacturing, the improvement of transportation, the history of labor organization and legislation, the evolution of our monetary and credit systems, changes in the protective tariff, progress towards economic and social solidarity, etc., are traced from Colonial times onward.

Prerequisites: ES 101 and ES 111. Required in Commerce; sophomore year; first term; 3 credits; 3 recitations. Professor Macpherson.

ES 203. **Principles of Economics.** A general course covering the elementary problems of our industrial and commercial organization, the nature of wealth, its production and consumption, the different forms in which it is found; conditions underlying

successful commerce and manufacturing; localization of industry and relation of raw material to manufacturing; law of diminishing returns; division of labor and efficiency production; exchange and distribution and their dependence upon the price-making process; factors determining prices, wages, interest, and rent; problems of taxation; public expenditures; protection and free trade; money and banking; labor problems and transportation. Textbook, lectures, and reports on assigned readings.

Prerequisites: ES 101 and ES 201. Required in Commerce; sophomore year; third term; 4 credits; 4 recitations. Text: Ely, Outline of Economics. Marshall, Wright and Field, Materials for the Study of Elementary Economics. Associate Professor Comish.

ES 211. **Conservation.** Economic wastes arising out of the exploitation of natural resources; the mal-adjustment of industry; the misdirection of labor; the present order of consumption; conservation laws and policies tending to eliminate wastes and abuses.

Elective; first term; 4 credits; 4 recitations. Open to any student who has had ES 203, ES 361, or ES 362, or equivalent. Associate Professor Comish.

ES 301. **Labor Problems.** Brief historical review of the rise of a labor class; influence of occupation upon the laborer; beginnings of organization; structure, aims, methods of offense and defense; achievements of associations of labor; the trade agreement; the strike; the boycott; the lockout; methods of conciliation and arbitration; application of the injunction in labor disputes; political activity of labor organizations; the employers' association; the employers' liability; workingmen's insurance; profit-sharing and cooperation in relation to labor problems. Textbook, lectures, and assigned readings. Studies are made of typical historical and current labor disputes and embodied in term papers and class discussion.

Prerequisite: ES 203 or ES 361. Required in Commerce and Forestry; junior year; second term; 4 credits; 4 recitations. Professor Macpherson.

ES 303. **Insurance.** A course designed to cover, in a general way, the whole field of insurance. Nature and statistical basis of different kinds of insurance; application of the principles discovered to different forms of insurance such as straight life, endowment, accident, industrial, old age, fire, live stock, hail, etc., taken up in detail.

Elective; junior or senior year; third term; 4 credits; 4 recitations. Text: Huebner, Life Insurance, Property Insurance. Assistant Professor Dreesen.

ES 305. **General Sociology.** The origin, development, present conditions, and social functioning of our social units, such as the family, the school, the church, clubs, associations, institutes, etc.; the city, state, and nation; interpretation of the causes of the strength and weakness of modern social institutions, showing their influence upon the general welfare of society and the progress toward greater efficiency; analysis of the social causes and effects of ignorance; vice and crime; poverty; unstable family relations; political dishonesty, etc.; and a general discussion of the principles underlying their elimination.

Elective; junior year; second term; 4 credits; 4 recitations. Professor Macpherson.

ES 311. **Money and Banking.** (a) Money. The nature and functions of money; legal tender; the factors affecting price, and their relation to business conditions; brief history of the various forms of paper money; silver legislation; 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; currency and banking principles underlying United States and foreign banking systems; comparison of our banking system with those of foreign countries.

Prerequisite: ES 203. Commerce; junior year; first term; 4 credits; 4 recitations. Text: Holdsworth, Money and Banking. Assigned Readings. Assistant Professor Dreesen.

ES 313. **The Elements of Statistics.** A description of the methods of collecting and interpreting original and secondary data; practice in scientifically presenting statistics in such forms as tables, charts, diagrams, curves, and maps.

Elective; junior, senior, or graduate year; third term; 3 credits; 3 recitations. Text: Secrist, Introduction to Statistical Methods. Assistant Professor Dreesen.

ES 323. **Cooperation.** This course takes up the origins, structures, objects, methods, and results of cooperative producers', consumers', and marketing associations, including, for example, such cooperative organizations as creameries, cheese factories, meat

factories, stores, purchasing societies, consumers' leagues, warehouses, grain elevators, fruit and vegetable associations, live-stock societies, credit and insurance companies.

Elective to juniors and seniors who cannot take ES 364 and ES 367, and who have had ES 203, ES 361, or ES 362 or equivalent; third term; 4 credits; 4 recitations. Associate Professor Comish.

ES 362. **Agricultural Economics.** This course deals with the fundamental principles of production, consumption, and distribution with special reference to agriculture; land tenure; land values; the law of proportions; price-making processes; money; banking; rural credit; cooperation; marketing; transportation; taxation; rent; interest; wages; and profits.

Elective in Agriculture; sophomore year; second term; 3 credits; 3 recitations. Text: Nourse, Agricultural Economics. Associate Professor Comish.

ES 364. **The Economic Organization of Agriculture.** Economic problems discussed from the standpoint of efficiency to be attained through closer organization; old and new agricultural methods of production, purchasing, transportation, and marketing carefully investigated and compared for the purpose of eliminating waste and duplication; organization of farmers for purposes of production, purchasing, marketing, and insurance taken up in detail; the general farmers' movement resulting in the Granges and Farmers' Union.

Open to all students who have had ES 362 or its equivalent. Elective for juniors and seniors; second term; 3 credits; 3 recitations. Associate Professor Comish.

ES 365. **National Vitality.** A two-credit course, covering the general field of national vitality; its importance; the conditions underlying it; and the means of maintaining such conditions; economic and social waste due to disease, alcohol, and vice treated in a series of lectures by experts from different departments of the College; lectures by outside specialists upon particular phases of the subject. Besides taking notes on the lectures, each student is required to make an abstract of not less than three hundred pages of assigned readings. Note: This course will not be given unless at least fifteen students register for it.

Elective; third term; 2 credits; 2 recitations. Professor Macpherson.

ES 366. **The Literature and Exposition of Rural Life.** A critical study of the general field of literature bearing upon rural life; typical interpretations of rural life from the best poetry and prose; the rural press studied with a view to estimating its sociological and economic influence; themes upon current economic and sociological topics and the subject-matter discussed in the class room to familiarize the student with the problems involved in the rural life movement.

Elective; junior or senior year; second term; 4 credits; 4 recitations. Professor Macpherson.

ES 367. **Rural Finance.** This course deals with various phases of farm finance. Among other topics considered are the following: principles of money, banking, and credit; rural credit laws; registration of land titles; rental and transfer contracts; land settlement and colonization policies; types of rural insurance; and the taxation of rural properties.

Open to those who have had ES 362 or equivalent. Elective; junior or senior year; first term; 4 credits; 4 recitations. Associate Professor Comish.

ES 391. **Introduction to Economics.** Abbreviated course (see ES 203).

Elective for all students except Commerce; year as may be specified in the department schedule; first or second term; 3 credits; 3 recitations. Text: Ely, Outlines of Economics. Associate Professor Comish.

ES 393. **Introduction to Sociology.** Abbreviated course (see ES 305).

Elective for all students except Commerce; year as may be specified in the department schedule; any term; 3 credits; 3 recitations. Professor Macpherson.

ES 396. **Introduction to Labor Problems.** This course is based upon ES 301, but is abbreviated and adapted to meet the needs of technical students who have had ES 361, or equivalent.

Prerequisite: ES 361, or its equivalent. Elective for all students except Commerce; junior or senior year; third term; 3 credits; 3 recitations. Professor Macpherson.

ES 401. **Public Finance.** 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, and the management of national and local debts.

Required in Commerce; senior year; second term; 4 credits; 4 recitations. Text: Plenn, Introduction to Public Finance. Assigned readings. Assistant Professor Dreesen.

ES 402. **Markets and Marketing.** 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.

Elective; open to graduate students and seniors upon consultation with the head of the department; second term; 4 credits; 4 recitations. Associate Professor Comish.

ES 403. **Transportation.** Relation of transportation systems to industrial and commercial progress; a brief historical review of the development of systems of transportation; organization and financing of different systems; effects 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; government ownership in the light of European experience.

Elective; senior year; third term; 4 credits; 4 recitations. Text: Ripley, Rates and Regulation. Assistant Professor Dreesen.

ES 413. **Applied Sociology.** Application of the principles of sociology to the promotion of social welfare; ethical gains through legislation and through voluntary associated and individual effort for the control of housing, the relief of poverty, the suppression of vice, the control of juvenile delinquents, prison reforms, cooperation among religious institutions, elimination of corruption from politics, care and elimination of mental and physical defectives; lectures, supplementary readings, and problem investigation.

Open to students who have had either ES 405 or ES 464. Elective; third term; 4 credits; 4 recitations. Professor Macpherson.

ES 464. **Rural Sociology.** Special problems of the evolution of rural institutions, the rural community, the rural family, the rural school, the rural church, rural societies and associations; rural systems of transportation and communication; the dependence of national welfare upon the rural community.

Elective; junior or senior year; third term; 4 credits; 4 recitations. Professor Macpherson.

ES 603. **Markets and Marketing.** Continuation of course ES 402. Development of marketing systems; local, state, and national commercial programs and policies; speculation organized and unorganized; commercial clubs, boards of trade, chambers of commerce; foreign trade relations; the consular service; commercial treaties; tariffs; bounties; and foreign exchanges.

Elective to graduate and senior students upon consultation with the head of the department; third term; 4 credits; 4 recitations. Associate Professor Comish.

ES 11. **Business and Social Organization.** Discussion of the principles of better business and better living that should accompany the general improvement in farm methods, which it is the purpose of this College to promote; general application of the economic laws of consumption, distribution, and production to the business side of farming; social and economic results of agricultural organization; textbook, lectures, and assigned readings.

Required in Agricultural Vocational Curriculum; first year; first term; 4 credits; 4 recitations. Associate Professor Comish.

ES 21. **Elementary Commercial Geography.** Especially adapted for Vocational students. A general survey of the fundamental conditions affecting industrial and commercial development, followed by a study of the natural resources, industries, products, and commerce of the United States and each of the principal countries of the world. Emphasis is laid upon the reasons for the organization of industry. Materials from the Commercial Museum are used in connection with the course.

Required in Commerce Vocational Curriculum (second year) and in Mechanic Arts Vocational Curriculum; first term; 3 credits; 3 recitations. Text: Brigham, Commercial Geography. Assistant Professor Dreesen.

ES 22. **Elementary Industrial History.** A general, comprehensive review of the most important phases of the economic development of the United States; historical study of such topics as tariff, internal improvements, slavery, banking, industrial development, commerce and shipping, immigration and other similar topics; present-day problems, as presented in the press.

Required in Commerce Vocational Curriculum (second year), and in Mechanic Arts Vocational Curriculum; second term; 3 credits; 3 recitations. Text: Moore, Industrial History of the American People. Assistant Professor Dreesen.

ES 23. **Elementary Industrial Problems.** Especially designed for Vocational students in Industrial Arts and Commerce. It aims to give them some insight into the economic problems with which they have to deal. A very condensed outline of the principal economic concepts is followed by the discussion of industrial organization, labor problems, transportation, marketing, taxation, etc.

Required in Mechanic Arts Vocational Curriculum and in Commerce Vocational Curriculum (second year); third term; 4 credits; 4 recitations. Text: Ely and Wicker, Elementary Principles of Economics. Assistant Professor Dreesen.

POLITICAL SCIENCE

In the courses in Political Science proper the department seeks to instruct in the basic general principles of all government, the construction and operation of modern governments, with particular attention to that of the United States, the rules and principles which regulate the relations of governments to each other. The courses are planned with the purpose of equipping students for an intelligent participation in governmental affairs. The work culminates in the courses in Advanced American Government and Practical Legislation, designed to instruct in the fundamentals of law making. The work assumes that, as citizens, our students will take a dynamic part in the various activities of government, including lawmaking.

In the Business Law courses the department endeavors to train students for practical business affairs, particularly to give the legal information necessary to prevent the common business errors. Special attention is given to industrial and rural problems. In order to acquaint the student with the rudiments of court procedure, a practical case is tried by the class, the students performing all the parts.

For outline of courses in Political Science in the School of Commerce, consult page 143.

COURSES

PS 163. **Business and Rural Law.** A short course in the laws of business, covering briefly much the same field as PS 201 and PS 202, but applied particularly to the special needs of students. Work for Pharmacy students gives emphasis to strictly business law. Work for Agricultural students stresses farm law. Recitation and discussions.

Required in Pharmacy, Farm Management, Animal Husbandry, and Landscape Gardening; elective to others except Commerce; third term; 3 credits; 3 recitations. Text: Huffcut, Elements of Business Law. Professor Dubach and Associate Professor Magruder.

PS 201. **Advanced Business Law.** (a) Contracts in General. Requisites, formation, interpretation, and remedies for breach of contracts. (b) Sales of Personal Property. Passage of title,

warranties and remedies. Note: Credit will not be given for Commerce PS 201 without Commerce PS 202 except on special permission from the department.

Required in Commerce and Forestry; elective to others; sophomore year; first or second term; 4 credits; 4 recitations. Texts: Spencer, Manual of Commercial Law. Bays, Cases on Commercial Law. Professor Dubach and Associate Professor Magruder.

PS 202. **Advanced Business Law.** Continuation of Course PS 201. (c) Negotiable Instruments. Requisites of contract assignment and negotiation. Liability of maker, drawer, acceptor, and indorser. Proceedings to protect rights of parties. (d) Agency. Appointment, powers, and responsibilities of agents. (e) Partnership and Corporation. Comparison of methods of formation, dissolution, and powers and liabilities of members. (f) Property Classes. Title, abstracts, mortgages, and leases. The case method is used throughout the entire course. Lectures, reports, and discussions.

Required in Commerce and Forestry; elective to others; sophomore year; second or third term; 4 credits; 4 recitations. Texts: Spencer, Manual of Commercial Law. Bays, Cases on Commercial Law. Professor Dubach and Associate Professor Magruder.

PS 301. **National Government.** Consideration of the organization, functions, and present-day problems of the American Federal Government.

Required in Commerce and Mines; elective in other curricula; any term; 3 credits; 3 recitations. Text: Munro, Government of the United States. Professor Dubach and Associate Professor Magruder.

PS 302. State **and Local Government.** Consideration of the organization, functions, and present-day problems of state, county, and township government in the United States. The government of Oregon receives special attention.

Required in Commerce and Mines; elective to others; junior or senior year; second term; 3 credits; 3 recitations. Text: Munro, Government of the United States. Professor Dubach and Associate Professor Magruder.

PS 303. **Municipal Government.** Consideration of the organization, functions, and present-day problems of city and town government. The cities of the Northwest receive special attention.

Required in Commerce; elective to others; junior or senior year; third term; 3 credits; 3 recitations. Professor Dubach and Associate Professor Magruder.

PS 401. **Comparative Governments.** A critical study of the governments of the principal countries of the world, with emphasis on modern movements and features of government that are problems in the United States at present. Lectures, reports, and discussions.

Required in Commerce; elective to others; senior year; first term; 4 credits; 4 recitations. Associate Professor Magruder.

PS 402. **International Relations.** America as a World Power and her relation to contemporary political, social, and economic world events; races, languages, religions, and types of government in Europe and the Near East; Great Britain and her imperial problems; fundamental principles of international law and proposed plans for preserving international peace; partition of Africa; the Chinese Republic; Japanese expansion; Oriental problem on the Pacific Coast; our relations with Canada and with Mexico; the Caribbeans as an American problem; our interest and opportunities in South America; America's ideals. Lectures, discussions, and tests.

Elective; senior year; second or third term; 4 credits; 4 recitations. Associate Professor Magruder.

PS 411. **Advanced American Government.** Supplementary to courses PS 301, PS 302, and PS 303, giving chief attention to the interpretation of Federal and state constitutions, and the relation of legislation to the constitutions. Court reports are used liberally to show the interpretation of the rights of the people guaranteed in the constitutions and of the powers granted to the government by these instruments.

Prerequisite: PS 301. Elective; junior or senior year; first term; 4 credits; 4 recitations. Text: Hall, Constitutional Law. Professor Dubach.

PS 412. **Practical Legislation.** Instruction in practical bill drafting; attention given to correct form, and expression of desired content of bills; emphasis on the necessity of preparing laws with reference to prior legislation and court decisions; emphasis on rural and industrial legislation.

Prerequisite: PS 411. Elective; junior or senior year; second term; 4 credits; 4 recitations. Text: Jones, Statute Law Making in the United States. Professor Dubach.

PS 601. **Advanced Business Law.** Class work same as PS 201 with special research work required in addition.

For graduate students other than Commerce; first term; 4 credits; 4 recitations. Professor Dubach and Associate Professor Magruder.

PS 602. **Advanced Business Law.** Class work same as 302; special research work required in addition.

For graduate students other than Commerce; second term; 4 credits; 4 recitations. Professor Dubach and Associate Professor Magruder.

PS 13. **American Civil Government.** Consideration of national, state, county, and city government in the United States.

Required in Commerce Vocational Curriculum; first year; third term; 4 credits; 4 recitations. Text: Magruder, American Government.

PS 23. **Business Law.** General principles of contracts, sales, negotiable instruments, bailments, agency, partnership, corporations, and property.

Required in Commerce Vocational Curriculum (second year) and in Mechanic Arts Vocational Curriculum; third term; 3 credits; 3 recitations. Text: Huffcut, Elements of Business Law. Professor Dubach.

OFFICE TRAINING AND STENOGRAPHY

The courses offered by this department are for four classes of students: (a) those desiring a thorough training as stenographers and typists; (b) those desiring to go further into the field of court reporting and secretarial training; (c) those desiring to enter the teaching profession; and (d) those commercial teachers desiring advanced training.

The ground covered by the work of this department is as follows: Stenography and Typewriting, two years; Convention and Court Reporting, one year; Secretarial Training, one year; and Methods of Teaching Commerce, one year.

Equipment. The Office Training Department is equipped with the latest appliances and fixtures, including the standard types of typewriters, duplicators, mimeographs, dictaphones, mimeoscope, and filing cabinets. Each student is given access to equipment upon payment of a fee required for the course in which he is registered. All equipment and apparatus are kept in constant repair, and students are taught how to keep the apparatus they use in proper order.

COURSES

OT 101. **Elementary Stenography.** Theory of manual, Gregg Shorthand, first eight lessons covered thoroughly. Shorthand penmanship given especial attention. Typing course OT 111 must be taken concurrently with this course unless student has had an equivalent course.

Required in Commerce (freshman year) and in Commerce Vocational Curriculum (first year); elective to others; first term; 3 credits; 4 recitations. Texts: Gregg Shorthand Manual and Gregg Writer. Miss Koopman.

OT 102. **Elementary Stenography.** A continuation of Course OT 101. Manual completed through the fifteenth lesson. Typing course OT 112 must be taken concurrently with this course unless student has had an equivalent course.

Required in Commerce (freshman year) and in Commerce Vocational Curriculum (first year); elective to others; second term; 3 credits; 4 recitations. Texts: Gregg Shorthand Manual, Gregg Writer, and Gregg Speed Studies. Miss Koopman.

OT 103. **Elementary Stenography.** A continuation of course OT 102. Theory of manual completed. Thorough review of principles. Special attention given to phrase writing. Beginning dictation. Typing course OT 113 must be taken concurrently with this course, unless student has had an equivalent course.

Required in Commerce (freshman year) and in Commerce Vocational Curriculum (first year); elective to others; first or third term; 3 credits; 4 recitations. Texts: Gregg Shorthand Manual, Gregg Writer, and Gregg Speed Studies. Miss Burns.

OT 111. **Elementary Typing.** Rational Touch Typing. Theory and practice of Touch Typing, covering mastery of alphabet and numerals. Finger gymnastics, rhythm drills, dictation exercises. Required for OT 101 students.

Required in Commerce; elective to others; freshman year; any term; 2 credits; 5 one-hour laboratory periods; 1 hour home assignment. Fee $2.00. Text: Rational Typewriting. Miss Koopman.

OT 112. **Elementary Typing.** Continuation of course OT 111. Drill. Writing paragraphs, continuous matter. Punctuation and mechanical arrangement of business correspondence. Required of OT 102 students.

Required in Commerce; elective to others; freshman year; any term; 2 credits; 5 one-hour laboratory periods; 1 hour home assignment. Fee $2.00. Text: Rational Typewriting. Miss Koopman.

OT 113. **Elementary Typing.** Continuation of course OT 112. Legal forms, tabulating, centering, manifolding, and speed practice. Speed certificates granted. Required of OT 103 students.

Required in Commerce; elective to others; freshman year; any term; 2 credits; 5 one-hour laboratory periods; 1 hour home assignment. Fee $2.00. Text: Rational Typewriting. Miss Whillock.

OT 121. **Elementary Stenography. Condensed Course.** Designed for those who wish to prepare rapidly for civil service or teaching positions. First fourteen lessons in the Manual covered thoroughly. Course OT 131 must be taken concurrently with this course unless student has had the equivalent.

Elective in all curricula; freshman year; first or second term; 6 credits; 7 recitations. Texts: Gregg Shorthand Manual and Gregg Writer. Assistant Professor Maginnis.

OT 122. **Intermediate Stenography. Condensed Course.** Continuation of course OT 121. Theory of Manual completed. Drill on phrase-writing. Beginning dictation. Course OT 132 must be taken concurrently with this course unless student has had equivalent.

Elective in all curricula; freshman year; second or third term; 6 credits; 8 recitations. Texts: Gregg Shorthand Manual, Gregg Writer, Gregg Speed studies. Assistant Professor Maginnis.

OT 131. **Elementary Typing. Condensed Course.** Rational Touch Typing. Same as OT111 and OT112. Designed for students taking course OT 121 and those desiring to prepare for civil service examination in typing.

Elective in all curricula; first or second term; 4 credits; 5 two-hour laboratory periods. Fee $3.00. Text: Rational Typewriting. Assistant Professor Maginnis.

OT 132. **Intermediate Typing. Condensed Course.** Continuation of course OT 131. Legal forms, tabulating, centering, manifolding, and speed practice. Transcription of matter which has been taken in dictation. Designed for students taking course OT 122 and those desiring to prepare for civil service examination in typing.

Elective in all curricula except regular Commerce; freshman year; second or third term; 4 credits; 5 two-hour laboratory periods. Fee $3.00. Text: Rational Typewriting. Miss Whillock.

OT 133. **Advanced Stenography and Typing. Condensed Course.** A continuation of courses OT 121 and OT 131. Advanced dictation, drill on matter qualifying one to pass civil service examination.

Elective in all curricula except regular Commerce; freshman year; third term; 6 credits; 6 recitations; 6 hours home work; 6 one-hour laboratory periods. Fee $3.00. Text: Eldridge Dictation Exercises. Miss Burns.

OT 201. **Advanced Stenography and Typing.** Advanced principles and phrases, Gregg Shorthand. Dictation and transcripts covering vocabularies of representative business such as law,

banking, insurance, publishing, railway, and manufacturing. Advanced typing and effective arrangement of business correspondence.

Prerequisites: OT 103 and OT 113, or equivalents. Required in Commerce (sophomore year) and in Commerce Vocational Curriculum (second year); first or second term; 5 credits; 5 recitations; 5 hours home work; 5 one-hour laboratory periods. Fee $2.00. Texts: Gregg Speed studies, Gregg Writer, Eldridge Dictation Exercises. Miss Whillock.

OT 202. **Advanced Stenography and Typing.** Advanced dictation, legal forms, newspaper and magazine articles. Court and convention reporting introduced. A one-hundred-and-twenty-word shorthand and a sixty-word typing certificate granted.

Prerequisite: OT 201 or equivalent. Required in Commerce (sophomore year) and in Commerce Vocational Curriculum (second year); second or third term; 5 credits; 5 recitations; 5 hours home work; 5 laboratory periods. Fee $2.00. Texts: Eldridge Dictation Exercises, Expert Speed Course. Miss Whillock.

OT 203. **Office Training for Stenographers.** Office methods and appliances; filing; office routine; remittances and banking; shipping and accounting forms; business ethics; office efficiency problems; correct fingering of adding and calculating machines; expert typing and stencils; booklets, title pages, manuscripts, advertisements, and reports prepared with the aid of the mimeograph, mimeoscope, and multigraph; dictaphone dictation and transcripts.

Prerequisite: OT 202 or equivalent. Required in Commerce (sophomore year) and in Commerce Vocational Curriculum (second year); any term; 5 credits; 5 two-hour periods (lectures with home assignment, and laboratory). Fee $2.00. Assistant Professor Maginnis.

OT 243. **Civil Service Examination for Stenographers.** Lectures and drill in all subjects required in examinations for stenographic, typing, clerical, or civil service appointments.

Prerequisite: OT 133 or OT 203. Elective; sophomore year; first or third term; 3 credits; 3 lectures; 3 one-hour laboratory periods. Text: McDaniels Civil Service Course. Professor Vance.

OT 251. **Office Methods and Appliances.** Designed for Commerce students not taking stenography. Study and use of modern

office appliances such as mimeoscope, mimeograph, multigraph, addressing machines, dictaphones, calculating and bookkeeping devices. Filing and office routing. Continuation of typing course OT 113.

Required in Commerce (sophomore year) and in Commerce Vocational Curriculum (second year); first term; 2 credits; 5 one-hour lecture and laboratory periods with one hour home assignment. Fee $2.00. Assistant Professor Maginnis.

OT 252. **Office Management.** Designed for Commerce students not taking stenography. Practice and principles of scientific office management covering organization, arrangement, and operation, with special consideration of the employment, training, and payment of office workers. Study of office efficiency problems and business ethics.

Prerequisite: OT 251. Required in Commerce (sophomore year) and in Commerce Vocational Curriculum (second year); second term; 2 credits; 2 lectures. Text: Galloway, Office Management. Professor Vance.

OT 253. **Office Management.** Continuation of OT 252. Required in Commerce (sophomore year) and in Commerce Vocational Curriculum (second year); third term; 2 credits; 2 lectures. Professor Vance.

OT 261. **Expert Typing.** Designed to give expert finger training. Emphasis on artistic typing and rapid tabulating, billing and manifolding, with absolute accuracy. Proficiency certificates for speed and accuracy will be granted.

Prerequisite: OT 113. Elective, primarily for other than Commerce students; sophomore year; first or third term; 2 credits; 5 laboratory hours; 1 hour home assignment. Fee $2.00. Text: Rational Typewriting. Assistant Professor Maginnis.

OT 301. **Commercial Secretaries.** Private secretary defined; learning the position; managing callers; handling correspondence; outlines and reports; sources of information; editing and proof reading; appointments; diaries and accounts; ethics; systematizing the office.

Prerequisite: OT 203. Elective in Commerce; junior year; any term; 3 credits; 3 lectures. Text: Kilduff, Private Secretary. Professor Vance.

OT 302. **Secretarial Practice.** Continuation of OT 301.

Elective in Commerce; junior year; any term; 6 hours a week actual practice in College administrative offices; 2 credits. Professor Vance.

OT 401. **Reporters' Course.** Designed for those having completed OT 203 and desiring to specialize in court or convention reporting.

Elective; junior or senior year; first term; 3 credits; 2 recitations; 3 one-hour laboratory periods. Fee $1.00. Miss Burns.

OT 402. **Reporters' Course.** A continuation of OT 401.

Elective; junior or senior year; second term; 3 credits; 2 recitations; 3 one-hour laboratory periods. Fee $1.00. Miss Burns.

OT 403. **Reporters' Course.** A continuation of OT 402. Verbatim reporting of addresses, lectures, and talks given on the campus. Accurate transcripts to be made.

Elective; junior or senior year; third term; 3 credits; 2 recitations; 3 one-hour laboratory periods. Fee $1.00. Miss Burns.

SCHOOL OF ENGINEERING AND MECHANIC ARTS

WILLIAM JASPER KERR, D. Sc., President of the College
GRANT ADELBERT COVELL, M. E., Dean of the School of Engineering and Mechanic Arts; Professor of Mechanical Engineering
CHARLOTTE HARRIS JACKMAN, Secretary to the Dean

JOHN HARRISON BELKNAP, B. S., Instructor in Electrical Engineering
RAY BOALS, B. S., Instructor in Mechanical Engineering
HENRY CLAY BRANDON, A. M., Professor of Industrial Arts; Director of Shops
RICHARD HAROLD DEARBORN, A. B., M. E., Professor of Electrical Engineering
SAMUEL MICHAEL PATRICK DOLAN, C. E., Assistant Professor of Civil Engineering
OTTO BERGER GOLDMAN, B. S., Professor of Heat Engineering
SAMUEL HERMAN GRAF, M. S., Professor of Experimental Engineering
MARTIN LOUIS GRANNING, Instructor in Auto Mechanics
GLENN HARTMAN HILL, Instructor in Machine Shop
DONALD KENNETH MEREEN, Instructor in Patternmaking
MARK CLYDE PHILLIPS, B. M. E., Associate Professor of Mechanical Engineering; Superintendent of Heating
WILLIAM McCAULLY PORTER, Instructor in Forging
AMBROSE ELLIOTT RIDENOUR, B. S., Instructor in Foundry Practice
STUART HOBBS SIMMS, B. S., Professor of Civil Engineering
GORDON VERNON SKELTON, C. E., Professor of Highway Engineering
DEXTER RALPH SMITH, B. S., Instructor in Civil Engineering
THOMAS ANDERSON HENDRICKS TEETER, B. S., Professor of Irrigation Engineering
CHARLES EDWIN THOMAS, M. E., Assistant Professor of Experimental Engineering
MORRIS WENK, A. B., E. E., Instructor in Mechanical Drawing
CHARLES GEORGE WILTSHIRE, Instructor in Plumbing and Steam Fitting
LAWRENCE FISHER WOOSTER, B. S. A., Assistant Professor of Electrical Engineering; Superintendent of Light and Power

The School of Engineering offers curricula leading to advanced professional degrees, the degree of Bachelor of Science, and the vocational certificate in Mechanic Arts.

Advanced Degrees. The professional degree of Civil Engineer, Electrical Engineer, or Mechanical Engineer, 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

engineering curriculum, and met the College requirements for graduate study. See pages 69-71. These requirements specify one full year of resident work amounting to 48 college credits, including an acceptable thesis.

Baccalaureate Degrees. Four-year curricula leading to the degree of Bachelor of Science are offered in the School of Engineering as follows:

A curriculum in Civil Engineering, with senior options in Civil Engineering, Highway Engineering, Irrigation Engineering, and Structural Engineering.

A curriculum in Electrical Engineering.

A curriculum in Industrial Arts.

A curriculum in Mechanical Engineering.

Requirements for Graduation. In each of the four baccalaureate degree curricula offered in the School of Engineering 201 college credits are required, of which 189 are to be academic credits, 9 are to be credits in military drill, and 3 credits in physical education.

Vocational Curriculum. A one-year vocational curriculum in Mechanic Arts is offered. A certificate is awarded to those students who complete it.

Graduate Short Course in Highway Engineering. During the second term, 1919-20, this short course in Highway Engineering is given by the department of Highway Engineering in cooperation with the departments of Civil, Experimental, and Irrigation Engineering and is intended for graduate engineers who wish to specialize in some line of highway work, or for others properly prepared. The purpose of the course is to review the principles and current practice of Highway Engineering.

The various courses are complete in themselves and any one course may be taken without the others if the applicant's preparation is suitable for that course.

Instruction will be given by means of lectures, assigned reading, and laboratory practice. Special lectures by non-resident engineers will be provided where possible. No classes will be formed unless a sufficient number of students apply. During the year 1920 classes will not be arranged for more than 16 credit hours a week.

Those intending to take the Short Course should write Professor Skelton in advance.

The following courses are offered:

Road Design. Two times a week.
Construction of Roads. Three times a week.
Highway Bridges. Three times a week.
Cement and Highway Laboratory. Three laboratory periods a week.
Street Design and Construction. Three times a week.
Reinforced Concrete Highway Structures. Three times a week.
Contracts and Specifications. Two times a week.
The Hydraulics of Highway Drainage and Construction. One laboratory period a week.

DEGREE CURRICULUM IN CIVIL ENGINEERING

	Term		
Freshman Year	1st	2d	3d
Engineering Drawing (CE 111, 112, 113)	3	4	2
Surveying (CE 121, 122, 123)	5	4	5
Physics (Phys 111, 112, 113)	3	3	3
Mathematics (Math 111, 131, 132)	4	4	4
Library Practice (Lib 100)			1
Gymnasium (PhEd 111, 112, 113)	½	½	½
Military Science and Tactics	1	1	1
	16½	16½	16½

Sophomore Year

Topographic Surveying (CE 221)	4		
Mathematics (Math 251, 252, 253)	4	4	4
Chemistry (Chem 101, 102, 103)	3	3	3
Engineering Location, Curves and Earth work (CE 222)		5	
Railroad Engineering (CE 223)			5
Hydraulics (IE 212)		3	
Hydrology (IE 232)			3
Geology (Geol 201)	4		
Gymnasium (PhEd 211, 212, 213)	½	½	½
Military Science and Tactics	1	1	1
	16½	16½	16½

Junior Year	Term 1st	2d	3d
English (Eng 101, 102, 103)	3	3	3
Mechanics (ME 351, 352)	3	3	
Strength of Materials (ME 353)			3
Roads and Pavements (HE 311, 312)	2	3	
Sanitary Engineering (IE 323)	3		
Masonry and Foundations (CE 312)		3	
Materials of Construction (ExE 312)	4		
Power Laboratory (ExE 331)		3	
Structural Analysis (CE 353)			3
Reinforced Concrete (CE 313)			3
Hydraulic Laboratory (ExE 332)			3
Military Science and Tactics	2	2	2
	17	17	17

During the senior year the student may pursue any one of the following options: Civil Engineering, Highway Engineering, Irrigation Engineering, Structural Engineering.

Senior Year (Civil Engineering Option)			
Structural Engineering (CE 451, 452, 453)	4	4	4
Highway Transportation (HE 417)	3		
Reinforced Concrete (CE 414)	2		
Introduction to Economics (ES 391)	3		
Public Health and Sanitation (IE 422)		3	
Business Organization (BA 331)		3	
Contracts and Specifications (HE 427)		3	
Technical Electricity (EE 251)		3	
Electrical Machinery (EE 252)			3
Irrigation Engineering or Municipal Engineering and City Planning (IE 414 or HE 438)			3
National Government (PS 301 or 302)			3
Municipal Water Supply (IE 411)	4		
Seminar (CE 481, 482, 483)	1	1	1
Journalism or Public Speaking (IJ 330 or Eng 251)			3
	17	17	17

Senior Year

(Highway Engineering Option)

	Term		
	1st	2d	3d
Introduction to Economics (ES 391)	3		
Business Organization (BA 331)		3	
Political Science (PS 301 or 302)			3
Structural Engineering (CE 451, 452, 453)	4	4	4
Contracts and Specifications (HE 427)		3	
Highway Engineering (HE 411, 412, 413)	4	3	4
Highway Materials Laboratory (Ex E 426)		3	
Economics of Highway Construction (HE 416)	3		
Reinforced Concrete (CE 414)	2		
Seminar (CE 481, 482, 483)	1	1	1
Engineering electives			5
	17	17	17

Senior Year

(Irrigation Engineering Option)

Structural Engineering (CE 451, 452)	4	4	
Introduction to Economics (ES 391)	3		
Business Organization (BA 331)		3	
Political Science (PS 301 or 302)			3
Contracts and Specifications (HE 427)		3	
Irrigation Engineering (IE 414)	3		
Municipal Water Supply (IE 412)			3
Soil Surveying (Soils 427)			3
Irrigation Farming (Soils 312)		2	
Hydraulic Installations (IE 314)			3
Soil Physics (Soils 422)	3		
Drainage Engineering (IE 416)	3		
Irrigation Structures (IE 435)		3	
Water Power Engineering (IE 433)			3
Seminar (CE 481, 482, 483)	1	1	1
Electives		1	1
	17	17	17

Senior Year

(Structural Engineering Option)

	Term		
	1st	2d	3d
Structural Engineering (CE 451, 452, 453)	4	4	4
Advanced Structural Analysis (CE 454)	3		
Reinforced Concrete (CE 414)	2		
Introduction to Economics (ES 391)	3		
Elastic Deformations and Secondary Stresses (CE 455)		3	
Business Organization (BA 331)		3	
Contracts and Specifications (HE 427)		3	
Technical Electricity (EE 251)		3	
Electrical Machinery (EE 252)			3
Structural Laboratory (Ex E 427)			3
Political Science (PS 301 or 302)			3
Municipal Water Supply (IE 411)	4		
Seminar (CE 481, 482,483)	1	1	1
Journalism or Public Speaking (LJ 330 or Eng 251)			3
	17	17	17

DEGREE CURRICULUM IN ELECTRICAL ENGINEERING

Freshman Year

Elements of Electricity (EE 101, 102, 103)	3	3	3
Mathematics (Math 111, 131, 132)	4	4	4
Physics (Phys 111, 112, 113)	3	3	3
Library Practice (Lib 100)	1		
Engineering Lecture (EE 100)		1	
Mechanical Drawing (ME 111, 112)	2	2	
Descriptive Geometry (ME 113)			3
Shop Work (IA 121, 152, 262)	2	2	2
Gymnasium (Ph Ed 111, 112, 113)	½	½	½
Military Science and Tactics	1	1	1
	16½	16½	16½

Sophomore Year

	Term 1st	2d	3d
Introduction to Electrical Engineering (EE 201, 202, 203)	3	3	3
Mathematics (Math 251, 252, 253)	4	4	4
Chemistry (Chem 101, 102, 103)	3	3	3
Gas Engines (ME 224)	3		
Steam Machinery (ME 228)		3	
Hydraulics (IE 213)			3
Shop Work (IA 263)	2		
Surveying (CE 124, 127)		2	2
Gymnasium (Ph Ed 211, 212, 213)	½	½	½
Military Science and Tactics	1	1	1
	16½	16½	16½

Junior Year

Electrical Engineering (EE 301, 302, 303)	4	4	4
Electrical Laboratory (EE 321, 322, 323)	2	2	2
Mechanics (ME 351, 352)	3	3	
Strength of Materials (ME 353)			3
Hydraulic Power Plants (IE 312)	3		
Steam Turbines (ME 329)		3	
Steam Power Plants (ME 339)			3
English (Eng 101, 102)	3	3	
Public Speaking (Eng 251)			3
Military Science and Tactics	2	2	2
	17	17	17

Senior Year	Term 1st	2d	3d
Electrical Engineering (EE 401, 402, 403)	3	3	3
Electrical Design (EE 411, 412, 413)	1	1	1
Electrical Laboratory (EE 421, 422, 423)	2	2	2
Electrical Lighting (EE 431)	3		
Electrical Railways (EE 432)		3	
Electrical Signaling (EE 433)			3
Intro. to Economics (ES 391)	3		
Business Organization (BA 331)		3	
Political Science (PS 301 or 302)			3
Electives	5	5	5
	17	17	17

DEGREE CURRICULUM IN INDUSTRIAL ARTS

Freshman Year			
Shop Drawing (IA 191, 192, 193)	2	2	2
Manual Training (IA 111, 112, 113)	3	3	3
Chemistry (Chem 101, 102, 103)	3	3	3
English (Eng 101, 102, 103)	3	3	3
Commercial Geography (ES 101)	4		
Trigonometry (Math 111)		4	
Gymnasium (Ph Ed 111, 112, 113)	½	½	½
Military Science and Tactics	1	1	1
Approved electives			4
	16½	16½	16½

Sophomore Year			
Industrial Arts Design (A 211, 221)	2	2	
Pattern Making (IA 213)	3		
Physics (Phys 111, 112, 113)	3	3	3
History (Hist 121, 122, 421)	3	3	3
Foundry (IA 242)		3	
Carpentry (IA 222)			3
Gymnasium (Ph Ed 111, 112, 113)	½	½	½
Military Science and Tactics	1	1	1
Approved electives	4	4	6
	16½	16½	16½

Junior Year

	Term		
	1st	2d	3d
Elementary House Planning (Arch 331)	3		
Forging (IA 351)	3		
Psychology (Psy 301)	3		
Mechanical Drawing (ME 111, 112)	2	2	
Descriptive Geometry (ME 113)			3
Hammered Metal Work (IA 352)		3	
Principles of Education (Ed 302)		3	
Plumbing (IA 373)			3
Wood Turning (IA 333)		2	
Educational Psychology (Psy 322)			3
Commercial Woods (For 334)			3
Military Science and Tactics	2	2	2
Approved electives	4	5	3
	17	17	17

Senior Year

Machine Shop (IA 461, 462)	3	3	
Introduction to Economics (ES 391)	3		
Special Methods (I Ed 343)	4		
Materials of Engineering (Ex E 311)	3		
Advanced Mechanical Drawing (ME 315)		3	
Business Organization (BA 331)		3	
Vocational Education (Ed 323)		2	
Hydraulics (IE 212)		3	
Auto Mechanics (IA 182)			3
Political Science (PS 301 or 302)			3
Practice Teaching (I Ed 421)			5
Manual Training for Elementary Grades (I Ed 382)			3
Electives	4	3	3
	17	17	17

DEGREE CURRICULUM IN MECHANICAL ENGINEERING

Freshman Year

	Term		
	1st	2d	3d
Physics (Phys 111, 112, 113)	3	3	3
Mathematics (Math 111, 131, 132)	4	4	4
Shop Work (IA 212, 141, 152)	2	2	2
Mechanical Drawing (ME 111, 112)	2	2	
Descriptive Geometry (ME 113)			3
Elements of Heat Engineering (ME 121)	3		
Gas and Steam Engines (ME 124 or 122)		3	3
Engineering Survey (ME 101)		1	
Library Practice (Lib 100)	1		
Gymnasium (Ph Ed 111, 112, 113)	½	½	½
Military Science and Tactics	1	1	1
	16½	16½	16½

Sophomore Year

Mathematics (Math 251, 252, 253)	4	4	4
Shop Work (IA 254, 262, 263)	2	2	2
General Chemistry (Chem 101, 102, 103)	3	3	3
Hydraulics (IE 211)	3		
Plane Surveying (CE 126)	3		
Heat Engineering Technology (ME 221, 222)		3	3
Technical Electricity (EE 251)		3	
Electrical Machinery (EE 252)			3
Gymnasium (Ph Ed 211, 212, 213)	½	½	½
Military Science and Tactics	1	1	1
	16½	16½	16½

Junior Year

	Term		
	1st	2d	3d
English (Eng 101, 102, 103)	3	3	3
Mechanism (ME 311)	3		
Machine Design (ME 312, 313)		3	3
Materials of Engineering (Ex E 311)	3		
Mechanics (ME 351, 352)	3	3	
Strength of Materials (ME 353)			3
Advanced Hydraulics (IE 313)	3		
Financial Engineering (ME 335, 336)		3	3
Hydraulic Installation (IE 314)		3	
Hydraulic Laboratory (Ex E 341)			3
Military Science and Tactics	2	2	2
	17	17	17

Senior Year

Introduction to Economics (ES 391)	3		
Business Organization (BA 331)		3	
Political Science (PS 301 or 302)			3
Power Plant Design (ME 412, 413, 414)	2	2	3
Power Plant Engineering (ME 421, 422)	2	2	
Steam Laboratory (Ex E 451)	3		
Gas Engine Laboratory (ME 461)		3	
Wood and Steel Structures (CE 456)	3		
Reinforced Concrete and Foundation Design (CE 415)		3	
Contracts and Specifications (HE 427)		3	
Refrigeration (ME 425)			2
Heating and Ventilation (ME 465)			3
Seminar (ME 481, 482, 483)	1	1	1
Electives	3		5
	17	17	17

VOCATIONAL CURRICULUM IN MECHANIC ARTS

	Term		
	1st	2d	3d
Shop work according to trade selected	6	6	6
Vocational Drawing (ME 11, 12, 13)	2	2	2
Algebra (Math 21)	4		
Geometry (Math 81 or 82)		4	
Shop Arithmetic (Math 94)			4
English or other approved electives	3	3	3
Gymnasium (Ph Ed 111, 112,113)	½	½	½
Military Science and Tactics	1	1	1
	16½	16½	16½

CIVIL ENGINEERING

The curriculum in Civil Engineering is designed with a threefold purpose. First, to give the student such thorough fundamental training in the basic sciences (Mathematics, Chemistry, Physics, etc.) as will equip him to cope with the complex technical problems later encountered in his professional work. Second, to render him skillful and expert in those specialized branches of technical detail (Surveying, Drafting, Materials Testing, Designing, etc.) which constitute the working tools of his profession. Third, to give him breadth and clarity of vision by means of certain groups of cultural or liberal studies, thus fitting him for the large work in the field of commercial and industrial development which is the province of the civil engineer of today. During his senior year the student has the opportunity of selecting from among several specialized lines of Civil Engineering.

Recognizing the value of drawing to the professional engineer, not only as a means of expressing his ideas and of carrying out his plans, but also as a means by which the young graduate may enter some of the most desirable positions, the department lays emphasis upon this subject. Preparation of many plans and working drawings is included in the office work of the higher technical courses.

The work in Surveying begins with the freshman year and continues through the sophomore year with from three to nine hours of actual field surveying a week. The student serves at first in subordinate positions, advancing as a knowledge of instruments is acquired. After serving as an apprentice, he is placed in charge of field parties and is held responsible for results. During the freshman year he is given practice in land surveying and leveling, and during the sophomore year in topographic and railroad surveying. At all times, conscientious attention to duty, accuracy, and speed are demanded. Every student keeps full and accurate notes of all work done in the field. These are subject to examination and criticism by the instructor at any time, and suggestions for improvement are made as needed.

In addition to the specified required work, a number of technical lectures are given to freshmen by members of the engineering faculty. The purpose of these lectures is to acquaint the entering class with the general scope and purpose of the profession which they have chosen.

Equipment. In addition to joint use with the other engineering departments of the testing laboratories described elsewhere, the department has a suite of well-lighted rooms, suitably arranged on the second floor of Mechanical Hall. This suite includes offices, recitation and lecture rooms, an instrument room, and drafting and designing rooms, together with a well-equipped blue-print room with a cylindrical electrical blue-print machine, sun frames, and washing pans.

The drafting and designing rooms are well lighted and fully equipped with thoroughly modern and convenient drawing tables, supplied with individual lockers for instruments and other apparatus. The instrument room is conveniently arranged, having an individual glass-front case for each instrument and its accompanying equipment, which includes marking pins, tape, range-poles, notebook, etc. The instrument equipment includes the following: twelve transits, four of which are provided with solar attachment; nine levels, four plane-tables, one compass and two current meters, all high-class instruments of various standard makes and styles; a sufficient supply of level and stadia rods, range-poles, tapes, chains, plain and prismatic compasses, aneroid barometers, clinometers, planimeters, plumb-bobs, hand levels, etc., together with a well-selected assortment of specifications and blue-print plans of engineering structures for illustrative purposes.

COURSES

CE 111. **Engineering Drawing.** Theoretical instruction and drafting-room practice in the use and care of drawing instruments; principles of orthographic projection; use of standard conventional symbols and practice in free-hand lettering.

Required in Civil, Highway, Irrigation, and Mining Engineering; freshman year; first term; 3 credits; 1 lecture and 8 hours laboratory instruction a week. Fee $1.00. Text: French, Engineering Drawing. Mr. Smith.

CE 112. **Engineering Drawing.** A continuation and extension of CE 111, including a series of graded practice plates involving orthographic and isometric projection, shades, shading, etc., followed by the complete development of several detailed drawings of engineering construction such as bridges, buildings, and highway and irrigation structures. Emphasis is placed upon the development of topographic drawings and maps.

Prerequisite: CE 111. Required in Civil, Highway, and Irrigation Engineering; freshman year; second term; 4 credits; 1 lecture and 11 hours laboratory instruction a week. Fee $1.00. Text: French, Engineering Drawing. Mr. Smith.

CE 113. **Drawing and Descriptive Geometry.** Theoretical instruction and drafting-room practice in projection of lines, points, surfaces, and solids. Emphasis is placed on the application of Descriptive Geometry to engineering design.

Prerequisites: CE 111, CE 112. Required in Civil, Highway, Irrigation, and Mining Engineering; freshman year; third term; 2 credits; 1 lecture and 5 hours laboratory instruction a week. Fee $1.00. Text: French, Engineering Drawing. Mr. Smith.

CE 312. **Masonry and Foundations.** A study of design and construction of concrete and masonry foundations, retaining walls, piers, dams, and arches. Recitations, lectures, and work in the drafting and computing room.

Required in Civil, Highway, and Irrigation Engineering; junior year; second term; 3 credits 2 recitations and 3 hours laboratory instruction a week. Fee $1.50.

CE 313. **Reinforced Concrete.** A study of the fundamental principles of reinforced concrete as applied to the design of beams, girders, columns, walls, and arches. Design for the beam, girder, and arch types in bridge construction and typical retaining wall and irrigation structures are worked out in the drafting room and detailed drawings made.

Required in Civil, Highway, and Irrigation Engineering; junior year; third term; 3 credits; 2 recitations and 3 hours designing-room instruction a week. Fee $1.50. Text: Hool, Reinforced Concrete Construction, Vol. I.

CE 414. **Reinforced Concrete.** A continuation of CE 313, including the design of reinforced concrete culverts, flumes, dams, and retaining walls, and a complete analysis of the elastic arch.

Prerequisite: CE 313. Required in Civil, Highway, and Irrigation Engineering; senior year; first term; 2 credits; 1 lecture and 5 hours designing-room practice a week. Fee $1.50. Text: Hool, Reinforced Concrete Construction, Vol. I.

CE 415. **Reinforced Concrete and Foundation Design.** A study of the basic principles of reinforced concrete design as applied to design of mill and office buildings, footings, and machinery

beds, etc. Especially adapted to the needs of the mechanical engineer.

Required in Mechanical Engineering; senior year; second term; 3 credits; 1 recitation and 6 hours designing-room practice a week. Fee $1.50. Text: Hool, Reinforced Concrete Construction, Vols. I and II.

CE 121. **Plane Surveying.** Field practice and instruction in pacing, ranging, and slope measurements; use of the engineer's transit and level; theoretical instruction in the care, adjustment, and construction of the various surveying instruments, and problems involving their use.

Required in Civil, Highway, and Irrigation Engineering and in Landscape Gardening; freshman year; first term; 5 credits; 3 recitations and 6 hours field work a week. Fee $1.00. Text: Breed and Hosmer, Elementary Surveying.

CE 122. **Plane Surveying.** A continuation and extension of CE 121, including lecture, field, and office work in theory and construction of the different surveying instruments, and practice in making the tests and adjustments; study of the U. S. system of surveying public lands; forms and methods for keeping field notes; methods of balancing and plotting surveys, computing areas, etc.

Prerequisite: CE 121. Required in Civil, Highway, and Irrigation Engineering and in Landscape Gardening; freshman year; second term; 4 credits; 3 recitations and 6 hours field work a week. Fee $1.00. Text: Breed and Hosmer, Elementary Surveying.

CE 123. **Plane Surveying.** A continuation of CE 122, including execution of a survey of an assigned tract involving a complete triangulation system and control traverse over same; instruction in solar observation, stadia measurement, and elementary topography.

Prerequisite: CE 122. Required in Civil, Highway, and Irrigation Engineering; freshman year; third term; 5 credits; 2 recitations and 9 hours field work a week. Fee $1.00. Text: Breed and Hosmer, Elementary Surveying.

CE 124. **Plane Surveying.** Field practice and instruction in the rudiments of elementary surveying, including pacing, ranging, slope measurement, compass and introductory level work.

Required in Electrical Engineering (sophomore year) and in Forestry and Logging Engineering (freshman year); second term;

2 credits; 1 recitation and 3 hours field work a week. Fee $1.00. Text: Breed and Hosmer, Elementary Surveying.

CE 125. **Plane Surveying.** A continuation of CE 124, including level and transit practice; the theory and construction of the different surveying instruments; tests of adjustments; proper forms for field notes; traverses and traverse balancing; areas; and solar observations.

Prerequisite: CE 124. Required in Forestry and Logging Engineering; freshman year; third term; 4 credits; 1 recitation and 9 hours field work a week. Fee $1.00. Text: Breed and Hosmer, Elementary Surveying.

CE 126. **Plane Surveying.** A condensed course to meet the needs of mechanical engineers including use of the level and transit.

Required in Mechanical Engineering; sophomore year; first term; 3 credits; 1 recitation and 6 hours field work a week. Fee $1.00. Text: Breed and Hosmer, Elementary Surveying.

CE 127. **Plane Surveying.** A continuation and extension of CE 124, including field practice and instruction in use of the level and transit as well as the theory and construction of the different surveying instruments. Traverses are run and balanced and areas computed. Stadia traverse and profile leveling are considered.

Prerequisite: CE 132. Required in Electrical Engineering; sophomore year; third term; 2 credits; 1 recitation and 3 hours field work a week. Fee $1.00. Text: Breed and Hosmer, Elementary Surveying.

CE 128. **Plane Surveying and Mapping.** Field practice and instruction in pacing, ranging and slope measurement and the use of the engineer's transit and level. Traverses are run and areas plotted, balanced, and computed.

Required in Mining Engineering; sophomore year; third term; 5 credits; 1 recitation and 12 hours field work a week. Fee $1.00. Text: Breed and Hosmer, Elementary Surveying.

CE 221. **Topographic Surveying.** Contours and contour mapping, topographical sketching, and the execution of a complete topographical survey of an assigned tract including base line measurement, transit, level, stadia, and plane table work; theoretical instruction and field practice in use of clinometer and sketching board; execution of topographical sketches, road maps,

etc.; practice in use of conventional topographic symbols, map reading, and visibility problems.

Prerequisite: CE 123. Required in Civil, Highway, Irrigation Engineering, and in Landscape Gardening; sophomore year; first term; 4 credits; 1 recitation and 9 hours field work a week. Fee $1.00. Text: Breed and Hosmer, Elementary Surveying. Assistant Professor Dolan.

CE 222. **Engineering Location, Curves, and Earthwork.** A study of the simple, compound, transition, and vertical curve as applied to location of railway and highway transportation lines and ditch and canal systems; methods of earth-work computation; the mass diagram; haul and overhaul, etc. This course includes a complete survey of a highway railway or canal line, including a reconnaissance, preliminary survey, location survey, and estimate of earth work. Emphasis is placed upon earth-work calculation and such technical phases of the work as contour location for canals and ditches, etc. A study of yard and terminal design is included in this course.

Prerequisite: CE 221. Required in Civil, Highway, and Irrigation Engineering and in Landscape Gardening; sophomore year; second term; 5 credits; 2 recitations; and 9 hours field work a week. Fee $1.00. Text: Allen, Railway Curves and Earth Work. Assistant Professor Dolan.

CE 223. **Railroad Engineering.** A study of methods in railway construction and maintenance, standard structures, trestles, tunnels, culverts, minor bridges, ballast, rails and rail fastenings, yards, terminals, etc.

Prerequisite: CE 222. Required in Civil, Highway, and Irrigation Engineering; sophomore year; third term; 5 credits; 2 recitations and 9 hours laboratory practice a week. Fee $1.00. Text: Raymond, Elements of Railroad Engineering. Assistant Professor Dolan.

CE 224. **Surveying and Topography.** Contours and contour mapping, topographical sketching, and execution of a complete topographical survey of an assigned tract including base line measurement, transit, level, stadia, and plane table work; practice in the use of conventional topographic symbols, map making, map reading and visibility problems.

Prerequisite: CE 125. Required in Forestry and Logging Engineering; sophomore year; first term; 5 credits; 2 recitations

and 9 hours field work a week. Fee $1.00. Text: Breed and Hosmer, Elementary Surveying. Assistant Professor Dolan.

CE 225. **Railroad Surveying.** This course, designed especially for the Logging Engineer, takes up the survey of a railroad line through rough or wooded country, including a reconnaissance, preliminary, and location survey. A complete estimate of the yardage and of the cost of the road is made. The course includes study of the simple, compound, vertical, and transition curve.

Prerequisite: CE 231. Required in Forestry and Logging Engineering; sophomore year; second term; 5 credits; 2 recitations and 9 hours field work a week. Fee $1.00. Text: Allen, Railway Curves and Earthwork. Assistant Professor Dolan.

CE 241. **City Surveying.** An actual survey of a portion of the city including the preparation of street plate, establishment of grades, etc., survey and office work incident to the preparation of plans for street improvements, preparation of estimates, etc.

Prerequisites: CE 123. Elective after sophomore year; any term; 3 credits; 1 recitation and 6 hours field work a week. Fee $1.00. Assistant Professor Dolan.

CE 243. **Precise Surveying and Geodesy.** Theoretical and field instruction in precise leveling, triangulation, base line measurement, stellar observation and meridian, latitude and time; study of the newer methods employed by the U. S. Coast and Geodetic Survey, etc.

Prerequisites: CE 123. Elective after sophomore year; any term; 3 credits; 1 recitation and 6 hours field and office work a week. Fee $1.00. Assistant Professor Dolan.

CE 353. **Structural Analysis.** A study of graphic and algebraic analysis as applied to the determination of stresses in girders, cranes, derricks, roof and bridge trusses, and similar structures; the more recent methods of graphical analysis as applied to the evaluation of four-dimensional expressions.

Required in Civil, Highway, and Irrigation Engineering; junior year; third term; 3 credits; 2 recitations and 3 hours designing-room instruction a week. Fee $1.50. Text: Kirkham, Structural Engineering.

CE 451. **Structural Engineering.** The design of steel-truss bridges for standard highway and railway traffic and of steel and timber mill and office buildings.

Prerequisite: CE 353. Required in Civil, Highway, and Irrigation Engineering; senior year; first term; 4 credits; 1 recitation and 9 hours designing-room practice a week. Fee $1.50. Text: Kirkham, Structural Engineering.

CE 452. **Structural Engineering.** Drafting-room instruction in the preparation of detail and shop drawings, material bills, cost estimates, etc., for structural steel truss and girder spans.

Prerequisite: CE 451. Required in Civil, Highway, and Irrigation Engineering; senior year; second term; 4 credits; 1 recitation and 9 hours designing-room practice a week. Fee $1.50. Text: Kirkham, Structural Engineering.

CE 453. **Structural Engineering.** A continuation of CE 452, including an elementary treatment of the draw span, continuous truss, and girder bridge, suspension span, arch rib and cantilever.

Prerequisite: CE 452. Required in Civil and Highway Engineering; senior year; third term; 4 credits; 1 recitation and 9 hours designing-room practice a week. Fee $2.00.

CE 454. **Advanced Structural Analysis.** A study of elastic deformations as a means of solution for statically indeterminate structures, including execution of graphical deflection diagrams, analysis of stresses in continuous spans, fixed arch ribs, and like construction, and study of influence lines as a method of analysis.

Required in Civil Engineering (Structural Option); senior year; first term; 3 credits; 1 recitation and 6 hours laboratory instruction a week. Fee $2.00.

CE 455. **Elastic Deformations and Secondary Stresses.** A continuation of CE 454, including study of secondary stresses, methods of computation for same; comparative merits of different types of construction, erection problems, methods, etc.

Prerequisite: CE 454. Required in Civil Engineering (Structural Option); senior year; second term; 3 credits; 1 recitation and 6 hours designing-room practice a week. Fee $2.00.

CE 456. **Wood and Steel Structures.** Covers practically the same ground as CE 353, with emphasis placed on the design of mill buildings.

Required in Mechanical Engineering; senior year; first term; 3 credits; 1 recitation and 6 hours designing-room practice a week. Fee $1.50. Text: Kirkham, Structural Engineering.

CE 481, 482, 483. **Civil Engineering Seminar.** The members of the senior classes in the curricula in Civil, Highway, and Irrigation Engineering, and the professors and instructors, constitute the Civil Engineering Seminar, which meets once a week. The purpose of this seminar is to bring the students in touch with engineering literature and practice. To this end a number of journal reviews and papers on engineering subjects are presented and freely criticised each week. The work follows a previously arranged program.

Required in Civil, Highway, and Irrigation Engineering; senior year; three terms; 1 credit each term; 1 recitation a week. Fee $1.00.

HIGHWAY ENGINEERING

There are few lines of public endeavor where more money is being spent, or where a higher degree of technical skill and training is required, than in the field of highway engineering. 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 contsruction and maintenance work. Aside from the opportunity for useful and honorable service, no field, it is believed, offers greater encouragement in a financial way to the young man of ambition and ability.

Thorough theoretical instruction is accompanied by as much laboratory and field practice as possible. The curriculum includes such basic studies as Mathematics, Chemistry, Physics, Drawing, Materials of Engineering, Applied Mechanics, and Hydraulics, in addition to the technical work given by this department.

In the study of highways, special reference is made to the conditions and needs of Oregon. Due consideration is given to the construction and maintenance of dirt, gravel, and broken-stone roads, as well as to the higher types. In consequence of the vast area of the State, this class of roads must, of necessity, constitute the greater part of its highways for many years.

Equipment. The equipment of the department is modern and adequate. The department of Experimental Engineering is equipped with modern testing laboratories, including the best cement and highway-testing machinery, thus affording students in Highway Engineering the opportunity of studying by direct observation and experiment the strength and properties of the various engineering materials.

COURSES

HE 311. **Roads and Pavements.** A study of the fundamental principles of location, construction, and maintenance of roads; materials used in road and street building; asphalt, brick, wood block, stone, concrete, and other types of pavements. This course is given in connection with a laboratory course, Ex E 312.

Required in Civil, Highway, and Irrigation Engineering, and in Landscape Gardening; junior year; first term; 2 credits; 2 recitations. Professor Skelton.

HE 312. **Roads and Pavements.** A continuation of course 311.

Required in Civil, Highway, and Irrigation Engineering and in Landscape Gardening; junior year; second term; 3 credits; 2 recitations; 1 three-hour laboratory period. Professor Skelton.

HE 411. **Highway Engineering.** Economic grades and proper location for different soils and surfacing materials; surface and sub-surface drainage; culvert design and construction; construction and maintenance of earth, sand-clay, gravel, macadam, concrete, brick, and other types of roads; dust preventives and road binders; reconnaissance, surveys, estimates, plans, and specifications; organization of construction and engineering forces; cost data; methods of handling work.

Prerequisites: HE 311 and 312. Senior year; first term; 4 credits; 2 recitations; 2 three-hour laboratory periods. Professor Skelton.

HE 412. **Highway Engineering.** Continuation of HE 411.

Required in senior year; second term; 3 credits; 2 recitations; 1 three-hour laboratory period.

HE 413. **Highway Engineering.** Continuation of HE 411 and 412.

Required in senior year; third term; 4 credits; 2 recitations; 2 three-hour laboratory periods. Professor Skelton.

HE 416. **Economics of Highway Construction.** Economic and social advantages of improved roads; the traffic census; local and centralized systems of control; highway laws of different states; organization of construction and engineering forces; cost data; methods of handling work; forms of contract—lump sum, unit price, percentage, and cost plus fixed sum.

Required in senior year; first term; 3 credits; 3 recitations. Professor Skelton.

HE 417. **Highway Transportation.** A study of the various methods of highway transportation with especial reference to cost; the traffic census and its application; highway laws of different states; methods of financing highway construction; relation of character of traffic to type of construction, etc.

Required in senior year; first term; 3 credits; 3 recitations. Professor Skelton.

HE 427. **Contracts and Specifications.** A study of the general principles and laws of contracts as applied to engineering, including preparation and study of specifications and contracts based upon engineering structures designed by the individual student.

Required in Civil and Mechanical Engineering; senior year; second term; 3 credits; 3 recitations. Professor Skelton.

HE 438. **Municipal Engineering and City Planning.** The modern city streets, boulevards, and transportation systems; drainage and sanitation; water supply; lighting. A course of lectures and assigned readings.

Required in senior year; third term; 3 credits; 3 recitations.

IRRIGATION ENGINEERING

Equipment. The excellent equipment of the Civil and Experimental departments, as described under these respective titles, is available for use by the students in Irrigation Engineering. Besides the drafting rooms and laboratories, the student has the use of transits, levels, plane-tables, current meters, and tapes, for practical work, as well as pumps, water meters, rams, and small water wheels of the Experimental Engineering laboratories for experience in operation. Facilities for experiments with small weirs, orifices, and devices for measuring irrigation water are provided.

In addition to the above facilities, the proximity of the Willamette and Mary's rivers, Oak Creek, and the mill race of the Corvallis Flouring Mills, affords excellent opportunities for practice in stream gauging. For those students who desire to prepare themselves for positions as managers of irrigation projects, the courses in Drainage and Irrigation give access to the equipment of that department.

COURSES

IE 211. **Hydraulics.** An elementary course dealing with the pressure of water on gates, dams, and pipes; the flow of water in pipes and open waterways; operation of hydraulic machinery with thorough laboratory practice in the diagnosis and correction of the troubles commonly met in operation.

Prerequisite: Math 131. Required in Mechanical Engineering; sophomore year; first term; 3 credits; 2 lecture periods; 1 three-hour laboratory period. Fee $1.00: Text: Daugherty, Elements of Hydraulics. Professor Teeter.

IE 212. **Hydraulics.** A course covering the same field as IE 211 for students in Civil, Highway, Irrigation, and Mining Engineering.

Prerequisite: Math 131. Required of sophomores in Civil, Highway, and Irrigation Engineering and of juniors in Mining Engineering; second term; 3 credits; 2 lecture periods; 1 three-hour laboratory period. Fee $1.00. Text: Daugherty, Elements of Hydraulics. Professor Teeter.

IE 213. **Hydraulics.** A course covering the same field as IE 211 and 212 given for students in Electrical Engineering.

Prerequisite: Math 131. Required in Electrical Engineering; sophomore year; third term; 3 credits; 2 recitations; 1 three-hour laboratory period. Fee $1.00. Text: Daugherty, Elements of Hydraulics. Professor Teeter.

IE 311. **Hydraulics.** Practical application of the principles of hydraulics to irrigation farming, especially for agricultural students; pressure in tanks, pipes, and flumes; measurement of water by weirs, orifices, and current meters; losses of head in pipes; design of open channels; seepage losses; operation of pumps and other lifting devices.

Elective in Agriculture; senior year; first term; 3 credits; 3 lectures. Text: Merriman, Elements of Hydraulics. Professor Teeter.

IE 312. **Hydraulic Power Plants.** A study of the application of the principles of hydraulics to power production in hydroelectric plants, stream-flow dams, headworks, pipe lines, wheels and speed regulation.

Prerequisite: IE 213 or equivalent. For students in Electrical Engineering; junior year; first term; 3 credits; 1 lecture; 2 three-hour laboratory periods. Fee $1.00. Texts: Lyndon, Hydroelectric Power. Daugherty, Hydraulics. Professor Teeter.

IE 313. **Advanced Hydraulics.** The practical application of flow of water in streams; measurement of water; weirs, orifices, current meters, and methods of measurement; power variation, storage, pipe lines, and penstocks; dams and water turbines.

Prerequisite: IE 211. Required in Mechanical Engineering; junior year; first term; 3 credits; 2 recitations; 1 three-hour laboratory period. Fee $1.00. Text: Lyndon, Hydroelectric Power. Vol. I. Professor Teeter.

IE 314. **Hydraulic Installations.** Design and layout of complete pumping or power plants including buildings and foundations, pipe lines, and protective devices in accordance with the best American practice.

Prerequisite: IE 211. Required in Mechanical Engineering; junior year; second term; 3 credits; 2 lectures; 1 laboratory period. Fee $1.00. Text: Daugherty, Centrifugal Pumps. Professor Teeter.

IE 411. **Municipal Water Supply.** Determination of the available supply and quality of water for domestic purposes;

ground water; source of water supply; conveying and storing water; reservoirs and dams; fire protection; economics of pumping; installation of pumping plants; purification processes.

Prerequisites: CE 353, IE 212. Required in Civil Engineering; senior year; first term; 4 credits; 2 lecture periods; 2 three-hour laboratory periods. Fee $2.00. Text: Turneaure and Russell, Water Supply Engineering. Professor Teeter.

IE 412. **Municipal Water Supply.** A course similar to IE 411 for students taking the Irrigation Engineering option.

Prerequisites: CE 353, IE 212. Required in Irrigation Engineering; senior year; third term; 3 credits; 2 recitations; 1 three-hour laboratory period. Fee $1.00. Text: Turneaure and Russell, Water Supply Engineering. Professor Teeter.

IE 414. **Irrigation Engineering.** Investigations and surveys for the location and construction of irrigation systems; precipitation and run-off; stream flow and underground flow; storage, evaporation, and seepage; canal protection; alkali and drainage; duty of water; its measurement and delivery; records.

Prerequisite: IE 232. Required in Civil and Irrigation Engineering; senior year; first or third term; 3 credits; 2 lectures; 1 laboratory period. Fee $1.00. Text: Davis-Wilson, Irrigation Engineering. Professor Teeter.

IE 415. **Irrigation Operation.** Operation and maintenance of irrigation systems; protection of canals; erosions; burrowing animals; canal cleaning; maintenance of structures; general operation; organization; delivery of water; financial phases of operation.

Prerequisite: IE 211 or 311. Elective in Irrigation Engineering; required of Agriculture students majoring in Soils; 3 credits; 3 recitations. Text: Harding, Operation and Maintenance of Irrigation Systems. Professor Teeter.

IE 416. **Drainage Engineering.** Surveys for, and design of, large drainage systems; run-off and drainage coefficients; open ditch construction; draining and cleaning of large drainage channels; sizes of tile drains; plans, reports, and records; preparation and enforcement of specifications; estimates and division of costs; inspection.

Prerequisite: IE 221. Required in Irrigation Engineering; senior year; first term; 3 credits; 2 lectures; 1 laboratory period.

Fee $1.00. Text: Elliott, Engineering for Land Drainage. Professor Teeter.

IE 417. **Pumping Plants.** Design and layout of complete pumping plants including buildings and foundations, pipe lines, and protective devices in accordance with the best American practice.

Prerequisite: IE 211. Required in Mechanical Engineering; second term; junior year; 3 credits; 2 lectures; 1 laboratory period. Fee $1.00. Text: Daugherty, Centrifugal Pumps. Professor Teeter.

IE 323. **Sanitary Engineering.** Drainage systems of populous districts; collection and disposal of garbage; separate and combined water-carriage systems; surveys, plans, and specifications; brick, terra cotta, cement, and concrete sewers; design of inlets, flush-tanks, etc.; sewage disposal.

Prerequisite: IE 221. Required in Civil Engineering; junior year; first term; 3 credits; 2 recitations; 1 three-hour laboratory period. Fee $1.00. Text: Folwell, Sewerage. Professor Teeter.

IE 422. **Public Health and Sanitation.** Safety-first measures; prevention of accidents; public sewage disposal, garbage disposal, street cleaning; the protection and purification of water supplies; ventilation and fresh air; relation of engineering to public health.

Required in Civil Engineering; senior year; second term; 3 credits; 2 lectures; 1 three-hour laboratory period. Fee $1.00. Professor Teeter.

IE 232. **Hydrology.** A continuation of elementary hydraulics followed by a course dealing with relations between rainfall and run-off; flow from watersheds; stream flow; study of current meters; weirs and measuring devices; power and storage studies.

Prerequisite: IE 211 or 213. Required in Civil, Highway, and Irrigation Engineering; elective for others; sophomore year; third term; 3 credits; 2 recitations; 1 three-hour laboratory period. Fee $1.00. Text: Hoyt and Grover, River Discharge. Professor Teeter.

IE 433. **Water Power Engineering.** Development of water power on streams; of pondage; storage and load factor; the characteristics of modern water turbines; turbine constants; selection of stock turbines; speed regulation; governing large plants; practical problems in the design of plants.

Prerequisite: IE 211. Elective for seniors or graduates; re-

quired in Irrigation option; senior year; third term; 3 credits; 2 lectures; 1 three-hour laboratory period. Fee $1.00. Text: Meade, Water Power Engineering. Professor Teeter.

IE 435. **Irrigation Structures.** A course in design and selection of structures used in the storage and conveyance of water; design of headworks; wood and metal flumes; selection of dam sites; stability of masonry dams; design of canal sections; design of gates, weirs, and measuring devices; pipe lines; earthen dams; reservoirs; flash boards and movable dams; hollow dams; and their application to storage.

Prerequisites: CE 511; IE 102, 401. Required in Irrigation Engineering; senior year; second term; 3 credits; 1 lecture; 2 three-hour laboratory periods. Fee $1.00. Professor Teeter.

IE 451. **Navigation.** Practice in use of instruments and charts and technic of navigation; determination of latitude, longitude, and time; dead reckoning; astronomical location; study of signals; tides and storms.

Elective for students who have had trigonometry; 3 credits; 2 recitations; 1 three-hour laboratory period. Fee $1.00. Text: Hosmer, Navigation. Professor Teeter.

IE 461. **Hydrography.** This consists of a brief study of the figure of the earth and the celestial sphere, followed by methods of determining latitude, longitude, time, and azimuth from the sun and stars; triangulation; river and harbor surveys; coast and geodetic surveys; the location of soundings; maritime charting and mapping; numerical problems to supplant the field work.

Prerequisite: Spherical Trigonometry. Elective; junior or senior year; second term; 3 credits; 2 recitations; 1 three-hour laboratory period. Fee $1.00. Professor Teeter.

IE 471. **Water Law.** Riparian rights; early development of the water laws in arid regions; doctrine of appropriation; beneficial use; California and Colorado doctrines; rights of appropriation; storage and diversion; rights of way; relation of water to land appurtenant; prescription; abandonment; Federal water laws; state control; water laws of Oregon; adjudication; irrigation and drainage district law; duties of state engineer; Canadian and foreign water laws.

Elective in Irrigation Engineering; senior year; any term; 2 credits; 2 lecture periods. Text: Davis, The Law of Irrigation. Professor Teeter.

ELECTRICAL ENGINEERING

This curriculum is designed especially to train the young engineer in the theory of his profession, such practical work as is given in shop and laboratory being subordinated 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 supplement his college education, the student is urged to spend at least a part of his vacation in some line of electrical industry.

Equipment. The laboratory of this department occupies the west half of the first floor of Mechanical Hall. Besides the equipment therein, including generators, motors, and other apparatus, the machinery in the College power plant and sub-station, is available for study and testing purposes. Three-phase electrical energy is supplied by the long-distance transmission line or by the local generating unit as desired. In addition to the regular equipment, the department is particularly well equipped to handle high-voltage testing with one ten-kilowatt 110,000-volt transformer, and one 100-kilowatt 350,000-volt Thordarsen transformer.

COURSES

EE 101, 102, 103. Elements of Electricity. An elementary course in the construction and operation of the simpler types of electrical equipment.

Required; freshman year; 3 terms; 3 credits each term; 2 lectures; 1 three-hour laboratory period. Fee $2.00 a term. Mr. Belknap.

EE 201, 202, 203. Introduction to Electrical Engineering. An introduction to the study of electrical engineering problems including measuring instruments, connections, and circuits.

Required; sophomore year; 3 terms; 3 credits each term; 2 lectures; 1 three-hour laboratory period. Fee $2.00 a term. Mr. Belknap.

EE 301, 302, 303. Electrical Engineering. A study of electrostatics, electromagnetism, and direct and alternating current machinery.

Required; junior year; 3 terms; 4 credits each term; 4 recitations. Text: Christies, Electrical Engineering.

EE 321, 322, 323. **Electrical Laboratory.** A study of wave form and polarity of alternating currents; current voltage and power relations in circuits involving resistance, industance, and capacity; operation of direct and alternating current machinery.

Required; junior year; 3 terms; 2 credits each term; 1 three-hour laboratory period. Fee $2.00 a term.

EE 401, 402, 403. **Electrical Engineering.** An analysis of electric-power generation, transmission, and distribution with special reference to the technical, economic, and financial problems involved.

Required; senior year; 3 terms; 3 credits each term; 3 lectures. Professor Dearborn.

EE 411, 412, 413. **Electrical Design.** Design and computation of problems assigned in connection with EE 401, 402, 403.

Required; senior year; three terms; 1 credit; 1 laboratory period. Professor Dearborn.

EE 421, 422, 423. **Electrical Laboratory.** Characteristic performance of alternating machinery, parallel operation, and pump back tests. Engineering and commercial tests on standard electrical machinery.

Senior year; three terms; 2 credits; 1 laboratory period. Fee $2.00 a term. Text: Karapetoff.

EE 431. **Electric Lighting.** Study of electric lamps and their application to exterior and interior illumination.

Senior year; first term; 3 credits; 3 recitations. Assistant Professor Wooster.

EE 432. **Electric Railways.** Study of the application of electricity to street and interurban railways; traffic conditions; rolling stock; speed time curves.

Senior year; second term; 3 credits; 3 recitations. Assistant Professor Wooster.

EE 433. **Electric Signalling.** Study of telegraph, telephone, and wireless equipment and their application to the transmission of intelligence.

Senior year; third term; 3 credits; 3 recitations. Assistant Professor Wooster.

EE 442. **Public Service Regulation.** A study of public utility regulation; appraisals; rate making; service rules, etc.

Elective; senior year; second term; 3 credits; 3 lectures. Professor Dearborn.

EE 443. **Railway Electrification.** A study of conditions governing the electrification of trunk lines.

Elective; senior year; third term; 3 credits; 3 lectures. Assistant Professor Wooster.

EE 251. **Technical Electricity.** A preliminary electrical course for non-electrical engineering students, covering the fundamentals of the subject.

Sophomore or junior year; any term; 3 credits; 2 lectures; 1 three-hour laboratory period. Fee $2.00. Text: Gray.

EE 252. **Electrical Machinery.** A continuation of Technical Electricity, considering the application of electricity to industrial operation, motor selection, operation, and control.

Sophomore or junior year; any term; 3 credits; 2 lectures; 1 three-hour laboratory period. Fee $2.00. Text: Gray.

EE 481, 482, 483. **Seminar.** Presentation of abstracts and discussion of articles in the current electrical periodicals.

Elective; senior year; three terms; 1 credit each term; 1 recitation. Professor Dearborn.

EE 491. **Thesis.** A course, elective by permission, for those whose records indicate ability to complete a satisfactory thesis.

Senior year; 2 credits. Professor Dearborn.

EXPERIMENTAL ENGINEERING

The junior and senior courses in engineering laboratory practice are designed to familiarize the student with processes of investigation; to afford experience in conducting and reporting experimental engineering work; to secure data which shall verify and supplement theoretical instruction; and, to some extent at least, to give practical knowledge of construction and management of machinery and apparatus.

Appropriate divisions of this work are regularly taken by students in all branches of Engineering, Forestry, and Industrial Arts, and may be elected by students pursuing other curricula. Special courses are offered to meet the needs of the students in the different lines of work. An earnest effort is made not so much to impart a mass of detail as to develop in the student power of observation and capacity for independent thought.

Reports are required of all experiments, and are regarded as a most important part of the work. They are carefully read and criticised as to form, neatness, conciseness, accuracy of expression and spelling, as well as accuracy of technical data and calculations. With this training, when the student completes the work, he should know how to prepare an acceptable engineering report, or how to arrange data for publication.

Equipment. Appropriate portions of the equipment for this work are utilized by all departments in Engineering and Forestry. The equipment comprises the following divisions: a materials-testing laboratory, a cement-testing laboratory, a steam laboratory, a gas-engine laboratory, and a hydraulic laboratory. The divisions use in common the equipment for the preliminary work, such as calculating devices, planimeters, Amsler integrator, micrometers, and other general apparatus.

During the last session of the State Legislature the sum of $60,000 was appropriated for an engineering laboratory building, and it is expected that this will be ready for occupancy early in the fall. Considerable new equipment is also to be provided, particularly in hydraulics and certain phases of power engineering.

The gas-engine laboratory occupies temporarily the east basement of the Forestry Building and contains some twenty engines including examples of practically every type in use. A number

of these are gasoline and kerosene four- and two-cycle engines ranging in size from three to eighteen horse-power. Many of these engines are intended for practice in operation, repair work, and general maintenance, but all of the principal units are especially fitted for testing and experimentation.

The automotive laboratory, temporarily located in the west basement of the Forestry Building, is equipped with three chassis, each illustrating certain distinctive features of automobile running gear. There are also some ten automobile and truck motors illustrating nearly all of the types in use. All of these are mounted on suitable stands and several are equipped with fan dynamometers and other auxiliaries for testing. For the study of ignition and starting and lighting systems there are provided many especially constructed tables and stands which may be used in illustrating the principles involved, or in wiring exercises. Many models (sectioned and working) of transmissions, bearings, steering gears, carburetors, and other automobile parts and accessories are available.

COURSES

ExE 311. **Materials of Engineering.** Lectures and standard tests on the properties of timber, iron, steel, brick, stone, fuels, lubricating oils, etc., with special reference to the methods and specifications adopted by the American Society for Testing Materials and other national engineering organizations. In the work with metals the microscope is used to illustrate structure and to study characteristic types of defective material.

Prerequisites: Physics and Mathematics as prescribed by the curriculum followed. Required in Mechanical Engineering (junior year) and in Forestry and Logging Engineering and Industrial Arts (senior year); elective in Electrical Engineering (senior year); first term; 3 credits; 1 lecture; 6 hours laboratory work. Fee $3.00. Text: Moore, Materials of Engineering.

ExE 312. **Materials of Construction.** A course similar to the preceding but including highway materials and some work on reinforced concrete.

Prerequisites: Same as for ExE 311. Required in Civil Engineering; junior year; first term; 4 credits; 2 lectures; 6 hours laboratory work. Fee $3.00. Text: Moore, Materials of Engineering.

ExE 313. **Materials Testing Laboratory.** A course designed especially for students in Chemical Engineering, and for others desiring a general course dealing with a wide range of materials, methods, and equipment. The purpose is to cover those tests on materials which the industrial chemist in a commercial or city testing laboratory is required to make. Methods standardized by the American Society for Testing Materials and other recognized organizations are used throughout. The work includes tests on cement, bituminous and non-bituminous road materials, structural materials, lubricating oils, and fuels.

Required in Chemical Engineering; junior year; first term; 2 credits; 1 three-hour laboratory period. Fee $3.00.

ExE 426. **Highway Materials Laboratory.** Designed particularly for those specializing in Highway Engineering. Different road 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.

Required in Highway Engineering; senior year; second term; 3 credits; 1 lecture period; 2 laboratory periods. Fee $3.00. Text: Hubbard, Laboratory Manual of Bituminous Materials. Assigned references.

ExE 427. **Structural Laboratory.** An advanced laboratory course on plain and reinforced beams and columns to study methods of reinforcing and to determine the value of the materials available; tests on the relative permeability of different mixtures, both plain and when treated with various water-proofing processes; on thermal conductivity of concrete; study of stresses in structures by strain gauge.

Prerequisites: To be approved. Required in Civil Engineering (Structional Option); senior year; third term; 3 credits; 9 hours laboratory work. Fee $3.00.

ExE 331. **Power Laboratory.** Operation and testing of steam and gas machinery. Indicator practice, valve setting, mechanical efficiency, and economy tests.

Prerequisites: The completion of the required courses in Physics and Mathematics preceding. Required in Civil Engineering (junior year); elective in Electrical Engineering (senior year); second term; 3 credits; 1 recitation; 6 hours laboratory work. Fee $3.00. Text: Moyer, Power Plant Testing.

ExE 332. **Hydraulic Laboratory.** A continuation of ExE 331, but with reference to water measurement, pumps, hydraulic power, and air machinery.

Prerequisite: ExE 331. Required in Civil Engineering (junior year); elective in Electrical Engineering (senior year); third term; 3 credits; 1 recitation; 6 hours laboratory work. Fee $3.00.

ExE 334. **Power Laboratory.** Similar in aim and scope to ExE 331; adapted to the needs of students in Chemical Engineering.

Prerequisites: As for ExE 331. Required in Chemical Engineering; junior year; second term; 2 credits; 6 hours laboratory work. Fee $3.00. Text: Moyer, Power Plant Testing.

ExE 335. **Hydraulic Laboratory.** Continuation of ExE 334, and similar in scope to ExE 332.

Prerequisite: ExE 334. Required in Chemical Engineering; junior year; third term; 2 credits; 6 hours laboratory work. Fee $3.00. Text: Moyer, Power Plant Testing.

ExE 338. **Power and Hydraulic Laboratory.** A general introductory course made up of selected exercises from ExE 331 and 332.

Prerequisites: As for ExE 331. Required in Mining Engineering and Logging Engineering; junior year; second term; 3 credits; 1 recitation; 6 hours laboratory work. Fee $3.00. Text: Moyer, Power Plant Testing.

ExE 341. **Hydraulic Laboratory.** A comprehensive study of water measurement and flow, pumping and hydraulic power development, and allied topics.

Prerequisites: Courses in Mathematics and Theoretical Hydraulics as prescribed in the Mechanical Engineering curriculum. Required in Mechanical Engineering; junior year; third term; 3 credits; 9 hours laboratory work. Fee $3.00. Text: Carpenter and Diederichs, Experimental Engineering.

ExE 446. **Hydraulic Laboratory.** A brief course affording practical work in the study of hydraulic problems, particularly those relating to water flow and measurement and pumping.

Elective in Soils; senior year; second term; 2 credits; 6 hours laboratory work. Fee $3.00. Text: Daugherty, Hydraulics, for reference.

ExE 451. **Steam Laboratory.** A detailed study of steam power-plant equipment by the method of laboratory tests and analysis of test results. Various types of engines, boilers, pumps, and other steam equipment.

Prerequisites: Mathematics and Thermodynamics preceding this course in the Mechanical Engineering curriculum. Required in Mechanical Engineering; senior year; first term; 3 credits. Fee $3.00. Text: Carpenter and Diederichs, Experimental Engineering.

ExE 461. **Gas Engine Laboratory.** A continuation of ExE 451 extending the field of study into gas power and pneumatic equipment. The types of engines tested include stationary and automobile gasoline engines, kerosene and oil engines, and semi-Diesel heavy oil engines. Fans and air compressors are also covered in this course.

Prerequisite: ExE 451. Required in Mechanical Engineering; senior year; second term; 3 credits; 9 hours laboratory work. Fee $3.00. Text: Carpenter and Diederichs, Experimental Engineering.

ExE 371. **Automotive Laboratory.** A course designed for students interested in the principles, operation, and adjustment of automotive equipment. A study is made of auto engines, transmissions, drives, rear axles, steering gears, suspensions, etc., together with engine accessories such as carburetor, ignition systems, starting, lighting, and generating systems.

Elective; first or second term; 3 credits; 2 recitations or lectures; 1 three-hour laboratory period. Fee $3.00. Text: Hobbs and Elliott, The Gasoline Automobile.

ExE 372. **Automotive Testing Laboratory.** A continuation of the preceding course giving more thorough consideration to valve timing, carburetor, and ignition adjustments, and including tests on automobile and truck power plants, generators, starting motors, storage batteries, etc.

Prerequisite. ExE 371. Elective; second or third term; 3 credits; 2 recitations or lectures; 1 three-hour laboratory period. Fee $3.00. Text: Hobbs and Elliott, The Gasoline Automobile.

ExE 481. **Metallography and Pyrometry.** 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; taking 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.

Required in Chemical Engineering; elective to other suitably prepared students; senior year; third term; 3 credits; 2 lectures; 1 three-hour laboratory period. Fee $3.00. Text: Sauveur, Metallography and Heat Treatment of Iron and Steel.

ExE 691, 692, 693. **Experimental Research Problems.** An opportunity is given for suitably prepared students interested in engineering research to work out original problems. These may be either of their own choosing, or suggested by the department, and may cover any subject within the scope of the department laboratories.

Prerequisites: Must be approved in each case, and will vary according to the work proposed. Elective to senior and graduate students; three terms; 3 credits each term; 9 hours laboratory work. Fee to be announced.

INDUSTRIAL ARTS

There is a steadily increasing demand for competent, trained teachers of the Industrial Arts subjects, at salaries ranging from $1200 to $2000, to teach in elementary, secondary, and vocational schools of Oregon and other states. The manual instruction for boys and girls below the seventh grade is generally given by the regular grade teachers, but the supervisor and special teacher of manual training should be able to organize this work and correlate it with other school subjects and with the later formal courses in manual arts. For boys, this work will take the form of instruction in woodworking, blacksmithing, auto repairing, cement work, and vocational work in the various trades. Where the work is highly specialized along some trade line it is partly financed by the Federal Government.

A degree curriculum of the same general standard as the other B. S. curricula is provided in order that the young man who specializes in this field may receive preparation that will place him upon a par with high school teachers of other branches. The Industrial Arts department is a part of the School of Engineering and has under its supervision all the shop courses offered in the other departments of the College.

Equipment. This department provides the necessary equipment for carrying on the different lines of shop work in the degree and vocational curricula.

The Wood Shop, supplied with the best machines and tools the market affords, contains twenty-four double benches of modern design, accommodating forty-eight students. Each bench is provided with patent rapid action vises for holding the work, and is furnished with two sets of hand tools, consisting of ripsaws, cutoff saws and backsaws, planes, chisels, marking gauges, try-squares, hammers, dividers, and oilstones. The machine equipment of this shop consists of fifteen wood-turning lathes, each furnished with a set of tools; one iron saw-table with rip and cut-off saws, one hand saw, one jig-saw, 24-inch surface planer, 16-inch glue joiner, one hollow chisel mortiser and one belt sander, built by the students, and two grindstones. There are also two glue tables with clamps of various sizes, two electric glue heaters. The power is furnished by two three-phase induction motors of 15 and 5 horse-power.

The Forge Shop contains forty-two down-draught forges of the most approved pattern. Blast is furnished by a steel pressure blower driven by a 10-horse-power induction motor, and the smoke and gases are removed by an 80-inch exhaust fan, driven by a 20-horse-power motor. Each forge is provided with an anvil, hammers, hardies, tongs, and other small tools. An emergency grinder, built by students, has been added to the equipment. There are also swedge blocks and vises at convenient points in the room for general use. A power hammer has recently been added.

The Machine Shop contains one 24x24-inch iron planer, one 15-inch shaper, one 12-inch shaper, one universal milling machine, one universal tool grinder, one wet tool grinder, one radial drill, one 20-inch drill press, one sensitive drill press, one 20-inch engine lathe, one 16-inch engine lathe, one 16-inch universal turret lathe, one 14-inch modern geared lathe, five 14-inch engine lathes, two 10-inch speed lathes, one shop saw, one automatic knife grinder, and twelve bench vises. A 20-horse-power induction motor furnishes the power. A tool room adjacent contains the small tools, such as twist drills, taps, dies, reamers, calipers, gauges, and scales. These tools are given out to the student on the check plan.

The Plumbing and Steam Fitting Shop is equipped with all of the hand tools necessary for cutting, threading, and general pipe work, as well as gasoline torches, soldering outfits, and other apparatus for making lead-pipe connections and wiped joints.

The Foundry contains a 22-inch Colliau cupola having a capacity of two tons per hour, one 1200-pound crane ladle, one 800-pound crane ladle, bull ladles, and hand ladles, one 16-inch brass furnace, brass molder's tub, crucibles, one large core-oven, one portable core-oven, one two-ton jib crane, one wall crane for charging floor, one Delano pulley moulding machine No. 2, besides shovels, rammers, and small tools to accommodate twenty students at one time. An emery grinder, built by the students, has been added.

The Auto Mechanics Building, a temporary wooden structure, well-lighted and conveniently located, is equipped with all the standard tools usually found in a modern commercial garage. Among the tools are speed wrenches, special wrenches, standard reamers, taps and dies, valve-seating tools, electric drill, jacks, and pliers. The general equipment includes two portable cranes,

a twin jack, motor generator set, vulcanizing outfit, 5-horsepower motor, line shafting, emery grinder, drill press, and battery-repairing tools. A Ford car and a Maxwell truck, used in towing cars and for general utility purposes, together with various parts of cars for instructional purposes, are also elements of the Auto Mechanics equipment.

COURSES

IA 111. **Manual Training.** Designed to meet the needs of those students who desire to teach manual training in the sixth, seventh, eighth, and ninth grades of the public schools. A course in wood construction and design; theory and practice in the proper use of tools; growth and structure of woods; shrinkage, warpage, and seasoning of timber; staining and finishing; study of shop methods, equipment, and courses of study.

Required in Industrial Arts; freshman year; any term; 3 credits; 1 lecture; 2 three-hour laboratory periods. Fee $4.00. Deposit $1.00.

IA 112. **Manual Training.** Continuation of IA 111. Problems requiring more technical skill and more knowledge of design and tool processes are taken up.

Required in Industrial Arts; freshman year; second or third term; 3 credits; 1 lecture; 2 three-hour laboratody periods. Fee $4.00. Deposit $1.00.

IA 113. **Manual Training.** Intended to familiarize those students who wish to teach manual training in the high school with commercial methods in wood-working such as are used in the average jobbing shop and with such machinery as is found in the better equipped high school. Well-designed pieces of furniture are made and finished.

Prerequisites: IA 111, 112. Required in Industrial Arts; freshman year; third term; 3 credits; 1 lecture; 2 three-hour laboratory periods. Fee $4.00. Deposit $1.00.

IA 114. **Cabinetwork.** Designing and construction of furniture according to the ability of the individual student; mixing of stains, fillers, and various finishes, with their application; study of the design and construction of drawers and panel work; primary upholstering.

Elective; any term; 2 credits; 2 laboratory periods. Fee $4.00. Deposit $1.00.

IA 212. **Pattern Making.** Exercises with the common bench tools, emphasizing draft, shrinkage of metals and its effect upon the warpage of castings, etc.; construction of parts of machinery; construction of patterns and core boxes of different types; lumber suitable for pattern making; glue and metal fastenings; methods of marking; storing of patterns; estimating the weight of castings.

Required in Mechanical Engineering; any term; 2 credits; 2 three-hour laboratory periods. Fee $4.00. Deposit $1.00.

IA 213. **Patternmaking.** Principles of wood turning and their application to the useful arts; lectures and recitations upon selection of material, fastenings and joints, shrinkage of wood, allowance for shrinkage of metal, etc.

Required in Industrial Arts; sophomore year; first term; 3 credits; 1 lecture; 2 three-hour laboratory periods. Fee $4.00. Deposit $1.00. Text: International Correspondence School pamphlets.

IA 121. **Woodwork.** A series of construction exercises in joinery and carpentry accompanied by lectures dealing with care and use of bench tools; uses of the steel square in building construction; and the design and construction of trusses, trussed roofs, and timber bridges.

Required in Forestry, Logging Engineering, and Electrical Engineering; freshman year; any term; 2 credits; 2 three-hour laboratory periods. Fee $4.00. Deposit $1.00.

IA 222. **Carpentry.** Deals with the correct use of the steel square in laying out practical carpenter work, window-sills and door sills, bay and circular windows, steps, stairs, etc., detailed construction of window and door frames; sills, caps, weights, and fastenings in relation to the rough framework and the exterior and interior finish of the building; construction of cornices; gutters, brackets, columns, and newel posts; problems involving original design and construction; practice in reading plans, filling out material bills, and estimating cost of material and labor.

Required in Industrial Arts and elective in other curricula; sophomore year; third term; 3 credits; 1 lecture; 2 laboratory periods. Fee $4.00. Deposit $1.00.

IA 132. **Patternmaking.** Offered to students having two-credit course in patternmaking or equivalent. Construction of the more complicated patterns and core boxes necessary for the building of steam and gas engines or other machine parts.

Elective; first or second term; 2 credits; 2 three-hour laboratory periods. Fee $4.00. Deposit $1.00.

IA 333. **Wood Turning.** A series of exercises in wood turning intended to familiarize the student with the various uses of lathe tools; methods of centering and houcking; segment work; staining and polishing. Small pieces of furniture such as vases, bowls, rings, trays, tables, and stools are worked out.

Required in Industrial Arts; elective in other curricula; junior year; second term; 2 credits; 2 three-hour laboratory periods. Fee $4.00. Deposit $1.00.

IA 141. **Foundry Practice.** Includes a study of foundry equipment; care and management of cupolas; mixing and melting of iron; molding in green and dry sand; preparation of cores; casting in iron and brass.

Required in Mechanical Engineering; freshman year; any term; 2 credits; 2 three-hour laboratory periods. Fee $4.00.

IA 142. **Advanced Foundry Practice.** Elective; freshman year; any term; 2 credits; 2 three-hour laboratory periods. Fee $4.00.

IA 242. **Foundry Practice.** More comprehensive than IA 141.

Required in Industrial Arts; sophomore year; second term; 3 credits; 1 lecture; 2 three-hour laboratory periods. Fee $4.00.

IA 152. **Blacksmithing.** The student is taught to make and manage a forge fire; to shape iron by bending, upsetting, drawing and welding. Many useful articles are made including hooks, staples, rings, clevises, and chains.

Required in Mechanical Engineering (freshman year, third term) and in Electrical Engineering (sophomore year, second term); 2 credits; 2 three-hour laboratory periods. Fee $4.00.

IA 252. **Advanced Blacksmithing.** Continuation of IA 152 or equivalent for those who wish to take another term of blacksmithing.

Elective; sophomore year; any term; 2 credits; 2 three-hour laboratory periods. Fee $4.00.

IA 253. **Forging and Tool Dressing.** After a minimum amount of preliminary work in forging iron the remainder of the term is devoted to making, tempering, and dressing chisels, drills, and other tools.

Required in Mining Engineering and Chemical Engineering; sophomore year; third term; 2 credits; 2 three-hour laboratory periods. Fee $4.00.

IA 254. **Tool Making and Tempering.** Devoted to the study of the heat treatment of steel as exemplified in the making and tempering of springs, machine tools, and other articles of steel.

Prerequisite: IA 152 or equivalent. Required in Mechanical Engineering; sophomore year; first term; 2 credits: 2 three-hour laboratory periods. Fee $4.00.

IA 351. **Forging.** Deals with the equipment of the blacksmith shop; exercises in bending, shaping, upsetting, and welding iron; instruction in hardening and tempering steel; brazing; lectures on the management of a shop, instruction, and shop equipment.

Required in Industrial Arts; junior year; first term; 3 credits; 3 three-hour laboratory periods. Fee $6.00.

IA 352. **Hammered Metal Work.** Consists of hand-wrought metal work, including hard and soft soldering, the formation of bowls, trays, boxes, lamp shades, and the design and construction of furniture fittings.

Required in Industrial Arts; junior year; second term; 3 credits; 3 three-hour laboratory periods. Fee $6.00.

IA 262. **Machine Shop.** Both bench and machine work involving principles of chipping, filing, and hand finishing; exercises on lathe, shaper, planer, drill press, and milling machine; lectures on the proper uses of machine tools; cutting speeds; and labor and time-saving methods.

Required in Mechanical Engineering (sophomore year, second term) and in Electrical Engineering (freshman year, third term); 2 credits; 2 three-hour laboratory periods. Fee $4.00. Deposit $1.00.

IA 263. **Machine Shop.** Continuation of IA 262. Considerable time is given to shop and factory management and to labor-saving devices in rapid production work.

Required in Mechanical Engineering (sophomore year, third term) and in Electrical Engineering (sophomore year, first term); 2 credits; 2 three-hour laboratory periods. Fee $4.00. Deposit $1.00.

IA 461. **Machine Shop.** Includes both hand processes of chipping, filing and polishing, and practical work on the lathe, drill press, planer, and shaper, taught by carefully planned exercises. The lectures and instructional work cover the proper use of tools, selection, care, and use of machine tools, and methods of instruction.

Required in Industrial Arts; senior year; first term; 3 credits; 3 three-hour laboratory periods. Fee $6.00. Deposit $1.00.

IA 462. **Machine Shop.** Continuation of IA 461, in which the student becomes familiar with the milling machine, oxyacetylene welding, and general machine shop practice. Considerable attention is given to factory methods, and to processes of rapid production.

Required in Industrial Arts; senior year; second term; 3 credits; 3 three-hour laboratory periods. Fee $6.00. Deposit $1.00.

IA 363. **Machine Shop.** Includes both bench and machine work, taught by a series of exercises in chipping, filing, and finishing; machine work on lathe, shaper, planer, drill press, and milling machine.

Required in Logging Engineering; junior year; third term; 3 credits; 3 three-hour laboratory periods. Fee $6.00. Deposit $1.00.

IA 373. **Plumbing.** Care and practice in the handling of tools; in working with fittings, traps, valves, and faucets; in the laying out and constructing of plumbing for dwellings and schools; range boiler and other hot-water connections; care and upkeep of the plumbing of residences and schoolhouses.

Required in Industrial Arts; junior year; third term; 3 credits; 3 three-hour laboratory periods. Fee $6.00.

IA 171. **Plumbing.** Briefer course than IA 373.

Elective; any term; 2 credits; 2 three-hour laboratory periods. Fee $4.00.

IA 473. **Dairy Mechanics.** A brief course in cutting and threading of pipe; pipe fitting; care of boilers and heaters; re-

pairing of valves and faucets; soldering and repairing of cores; operation of refrigerating machinery; replacement of coils; packing of joints; and other repairing.

Required in Dairy Manufactures; senior year; third term; 2 credits; 2 three-hour laboratory periods. Fee $4.00.

IA 181. **Auto Mechanics.** Intended for owners and drivers of cars, emphasizing adjustment, maintenance and ordinary running repairs of the various parts and units of the automobile; lubrication; cleaning; care of batteries and electrical systems; various types of construction as employed in machines of different manufactures; actual inspection of different types of cars afforded by cars that are being overhauled in the shop.

Elective; any year; any term; 2 credits; 2 three-hour laboratory periods. Fee $4.00.

IA 182. **Auto Mechanics.** More thorough course than IA 181.

Required in Industrial Arts; senior year; any term; 3 credits; 3 three-hour laboratory periods. Fee $6.00.

IA 191. **Shop Drawing.** For those students who plan to teach manual training. The elements of drawing; use of drawing instruments; lettering; general construction; methods of representation; free-hand sketching; considerable attention to drawings of pieces of furniture and constructions in wood that may be worked out in the shop.

Required in Industrial Arts; freshman year; first term; 2 credits; 2 three-hour laboratory periods. Fee $0.50.

IA 192. **Shop Drawing.** Continuation of IA 191.

Required in Industrial Arts; freshman year; second term; 2 credits; 2 three-hour laboratory periods. Fee $0.50.

IA 193. **Shop Drawing.** Continuation of IA 192, in which the problem of furniture design receives considerable attention.

Freshman year; third term; 2 credits; 2 three-hour laboratory periods. Fee $0.50.

MECHANIC ARTS

The purpose of these courses is to assist those who expect to make their way in the world by their manual skill in some line of industrial activity, and who, though unable to take the degree curriculum of the College, desire vocational training in special lines

and at the same time the broadening influence of education in English, mathematics, and elementary science.

The shops are equipped with the latest approved machinery suited to carry on these practical courses.

The work is open to students over 16 years of age who have completed the eighth grade course of study or equivalent. Applicants more than 21 years of age who have not completed the eighth grade are admitted upon proof that they are able to carry the work that they may desire to take.

A student who has completed one year of work as outlined on page 168 is entitled to a certificate. Eighteen credits must be in one of the following subjects: Woodworking (Pattern Making, Carpentry, or Cabinetmaking), Machine Shop Practice, Blacksmithing, Foundry Practice, Plumbing, Auto Mechanics.

COURSES

IA 21. **Carpentry and Cabinet Construction.** The elements of joining as applied to cabinetmaking and the building trades, including tool operations, design, and construction; growth of woods, strength, warpage, and seasoning of timber; staining and polishing.

Vocational Curriculum in Mechanic Arts; first term; 6 credits; 18 hours shopwork. Fee $10.00.

IA 22. **Carpentry and Cabinet Construction.** Continuation of IA 21. Considerable attention is given to the making of working drawings of simple pieces of furniture which are built in the shop.

Vocational Curriculum in Mechanic Arts; second term; 6 credits; 18 hours shopwork. Fee $10.00. Deposit $1.00.

IA 23. **Carpentry and Cabinet Construction.** Continuation of IA 22. Study of the steel square and its uses as applied to brace and roof construction; carpentry work developed through the construction of parts of houses, barns, roofs, and bridges; construction of cornices, gutters, brackets, columns, window frames, and stairways; lectures on measurements of lumber and other materials of construction; the use of handbooks in calculating roofs, bridges, and trusses; practice in making estimates and working of problems taken from plans and specifications of houses.

Vocational Curriculum in Mechanic Arts; third term; 6 credits; 18 hours shopwork. Fee $10.00. Deposit $1.00.

IA 24. **Carpentry and Cabinetmaking.** Briefer course than IA 24.

Vocational Curriculum in Mechanic Arts; elective; any term; 3 credits; 3 three-hour laboratory periods. Fee $6.00. Deposit $1.00.

IA 26. **Woodworking.** Care and use of bench tools; use of the steel square; exercises in brace and rafter cutting and roof framing; lectures on various types of barn constructions; practical work in construction of models of roofs, trusses, buildings, and parts of buildings reduced in scale.

Vocational Curriculum in Agriculture; first term; 2 credits; 2 three-hour laboratory periods. Fee $4.00. Deposit $1.00.

IA 31. **Pattern Making.** Emphasizes the necessity of draft, use of core prints and core boxes; allowance for shrinkage of iron and other metals and its effect upon different shapes and thickness of castings; distortion of patterns; use of segments, staves, ribs, etc.; operation and repair of power machinery; how to select materials such as glue, lumber, shellac, and fasteners. Much of the work is on patterns of machines that are being made in the College shops.

Vocational Curriculum in Mechanic Arts; first term; 3 credits; 18 hours shopwork. Fee $10.00. Deposit $1.00.

IA 32. **Pattern Making.** Briefer course than IA 31.

Vocational Curriculum in Mechanic Arts; any term; 3 credits; 3 three-hour laboratory periods. Fee $6.00. Deposit $1.00.

IA 41. **Foundry.** Lectures and practice in uses of tools; characteristics of molding sand; problem of joints; parting lines; follow boards; match plates; gates for molds; pouring basins; shrinkage gates; supporting copes; uses of gaggers; facings; sea coal; plumbago; talc; charcoal; preparation of facing mixtures; molding with good patterns; with broken patterns; broken castings; skeleton patterns; sweeps; moulding of sheaves; pulleys; brackets; gas-engine cylinders; and other modern types of construction; core making by core boxes, core arbors, core rods; method of venting, baking, and painting of cores.

Vocational Curriculum in Mechanic Arts; any term; 6 credits; 18 hours shopwork. Fee $10.00.

IA 42. **Foundry.** Continuation of IA 41.

Vocational Curriculum in Mechanic Arts; second term; 6 credits; 18 hours shopwork. Fee $10.00.

IA 43. **Foundry.** Continuation of IA 42.

Vocational Curriculum in Mechanic Arts; third term; 6 credits; 18 hours shopwork. Fee $10.00.

IA 44. **Foundry.** Briefer course than IA 41.

Elective; any term; 3 credits; 3 three-hour laboratory periods. Fee $6.00.

IA 51. **Forging.** Principles of forging as applied to the average jobbing shop; method of building fires; use of tools in working out of nuts, bolts, bending of eyes, forging of staples, hooks, chains, and rings, clevises, and parts of farm machinery; forging of tools in high carbon steel and speed steel such as chisels, hammers, knives, and other tools; lectures on composition of iron and various low and high speed steels and the treatment especially adapted for each grade to annealing, tempering, and case hardening.

Vocational Curriculum in Mechanic Arts; any term; 6 credits; 18 hours shopwork. Fee $10.00.

IA 52. **Blacksmithing.** Continuation of IA 51.

Vocational Curriculum in Mechanic Arts; any term; 6 credits; 18 hours shopwork. Fee $10.00.

IA 53. **Tool Making and Tempering.** Study of the heat treatment of steel as exemplified in making and tempering tools, springs, knives, and machine tools.

Prerequisite: IA 51 or equivalent. Vocational Curriculum in Mechanic Arts; third term; 6 credits; 18 hours shopwork. Fee $10.00.

IA 54. **Blacksmithing.** Work having direct application to farming, such as the making and mending of farm implements, chains, clevises, and hooks; the ironing of whiffletrees and neckyokes; repairing and sharpening of plows and other farm machinery; short talks on the method of building fires; descriptions of fans and forges; study of the proper means of heating and treating materials to be used.

Vocational Curriculum in Agriculture; second term; 2 credits; 2 three-hour laboratory periods. Fee $4.00.

IA 55. **Forging.** Briefer course than IA 51.

Vocational Curriculum; elective; any term; 3 credits; 3 three-hour laboratory periods. Fee $6.00.

IA 61. **Machine Shop.** Intended for students who wish to specialize in Machine Shop Practice. Chipping and filling straight and plane surfaces; filing two pieces to fit; instruction in laying out and drilling; turning of various kinds of materials at different speeds and estimating of time and cost of work done by using different methods, such as without and with gauges, micrometers, and calipers.

Vocational Curriculum in Mechanic Arts; first term; 6 credits; 18 hours shopwork. Fee $10.00. Deposit $1.00.

IA 62. **Machine Shop.** Continuation of IA 61. Work on planer, shaper, grinder, and milling machine; practical construction of machinery such as lathes, gas engines, emery grinders; general repair work.

Vocational Curriculum in Mechanic Arts; second term; 6 credits; 18 hours shopwork. Fee $10.00. Deposit $1.00.

IA 63. **Machine Shop.** Continuation of IA 62, in which emphasis, by means of lectures, is placed upon speed production, construction of gigs, dies, and special tools, and problems relating to tool making.

Vocational Curriculum in Mechanic Arts; third term; 6 credits; 18 hours shopwork. Fee $10.00. Deposit $1.00.

IA 64. **Machine Shop.** Briefer course than IA 61.

Vocational Curriculum in Mechanic Arts; any term; 3 credits; 3 three-hour laboratory periods. Fee $6.00. Deposit $1.00.

IA 71. **Plumbing.** Intended to meet the needs of the students who wish to become plumbers, consisting of instruction and practice in care and handling of tools; in working with fittings, traps, valves, faucets, etc.; in working with sewer soil, waste water, and gas lines; in cutting and threading water pipe to measurements; using different fittings; in laying out and constructing plumbing; in making range, boiler, and hot-water connections; and in the practical uses of the soldering iron.

Vocational Curriculum in Mechanic Arts; any term; 6 credits; 18 hours shopwork. Fee $10.00.

IA 72. **Plumbing.** Continuation of IA 71.

Vocational Curriculum in Mechanic Arts; second term; 6 credits; 18 hours shopwork. Fee $10.00.

IA 73. **Plumbing.** Continuation of IA 72.

Vocational Curriculum in Mechanic Arts; third term; 6 credits; 18 hours shopwork. Fee $10.00.

IA 74. **Plumbing.** Briefer course than IA 71.

Vocational Curriculum in Mechanic Arts; any term; 3 credits; 3 three-hour laboratory periods. Fee $6.00.

IA 81. **Auto Mechanics.** Lectures and practice on care and repair of frame, wheels, steering gear, brakes, axle, transmission, and simple engine adjustments; repair of different types of automobiles.

Vocational Curriculum in Mechanic Arts; first term; 6 credits; 18 hours shopwork. Fee $10.00.

IA 82. **Auto Mechanics.** Continuation of IA 81. Lectures and repair work on modern auto gas engines; general overhauling of engines; bearing fitting; cylinder and piston lapping; ring fitting; general assembly and timing of engines.

Vocational Curriculum in Mechanic Arts; second term; 6 credits; 18 hours shopwork. Fee $10.00.

IA 83. **Auto Mechanics.** Continuation of IA 82. Study of auto electrical equipment; maintenance; repair of starting, lighting, and ignition systems; repair of batteries; systematic location of troubles; and road repair.

Vocational Curriculum in Mechanic Arts; third term; 6 credits; 18 hours shopwork. Fee $10.00.

IA 84. **Auto Mechanics.** Briefer course than IA 81.

Vocational Curriculum in Mechanic Arts; any term; 3 credits; 3 three-hour laboratory periods. Fee $6.00.

MECHANICAL ENGINEERING

The curriculum in Mechanical Engineering has for its purpose the preparation of young men for positions of usefulness and responsibility in the industrial life of the country. Instruction is given by means of lectures, recitations, and laboratory exercises. The scientific principles involved in machines, mechanical movements, and machine design are investigated and studied by solving numerous problems in class room and laboratory. The study of transformation of heat energy into power is taken up early in the course when the student becomes familiar with the various types of engines by actual contact in the laboratory. At the same time the physical laws governing the principles of operation of engines and transformation of heat energy are explained in lectures and illustrated by problems.

As the courses advance, the financial side of engineering is made the subject of special study and investigation and finally in the senior year the principles of efficiency and economy are embodied in the design of complete power plants.

Other technical subjects such as mechanics, surveying, hydraulics, and electrical machinery are included in the curriculum to give the student a general knowledge of engineering.

The basic courses of mathematics, English, chemistry, and physics are required, as well as such subjects as economics, political science, and business organization, in order that students may be prepared for useful citizenship as well as for engineering.

Eqipment. The laboratory equipment of this department in mechanics and power measurement, is described under Experimental Engineering. The shops are under the supervision of the department of Industrial Arts. In addition to equipment listed under these two departments there are two drafting rooms, each with 40 drawing tables and drawing boards, and a fully equipped blueprint room.

COURSES

ME 101. **Engineering Survey.** The purpose of this course is to acquaint the student with the general field of activities in mechanical engineering. Attention is directed to methods of study and economical use of time in college work.

Required in Mechanical Engineering; freshman year; second term; 1 credit; 1 lecture period.

ME 111. **Mechanical Drawing.** Use of instruments and elementary principles of mechanical drawing taught by a series of problems, emphasizing the following topics: types and methods of lettering; free-hand sketching and pictorial representation; orthographic projection; use of auxiliary and sectional views; development of surfaces and intersections.

Required in Electrical, Mechanical, Mining, and Chemical Engineering; first term; freshman year; 2 credits; 2 three-hour laboratory periods. Fee $0.50. Text: French, Engineering Drawing.

ME 112. **Mechanical Drawing.** Theory and problems on the conventional representation of bolts, nuts, screws, and other machine parts; free-hand sketches; detail and assembly drawings of machines; methods of dimensioning and checking; and drawing of spur and bevel gears.

Required in Electrical, Mechanical, Mining, and Chemical Engineering; second term; freshman year; 2 credits; 2 three-hour laboratory periods. Fee $0.50. Text: French, Engineering Drawing.

ME 113. **Descriptive Geometry.** 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 relation to mechanical drawing and drafting-room problems.

Required in Electrical, Mechanical, and Chemical Engineering; third term; freshman year; 3 credits; 2 three-hour laboratory periods; 1 lecture. Fee $0.50. Text: Ferris, Elements of Descriptive Geometry.

ME 311. **Mechanism.** A study of mechanical movements, including velocity, ratios, transmission of motion by link work, gearing, cams, and belting.

Required in Mechanical Engineering; junior year; first term; 3 credits; 1 recitation; 2 three-hour laboratory periods. Fee $0.50. Text: Keown, Elements of Mechanism. Associate Professor Phillips.

ME 312. **Machine Design.** Application of the principles discussed in Mechanism and in Mechanics to the design of machine parts; study of screws; shafting; belting; gearing; fly wheels; machine frames.

Required in Mechanical Engineering; junior year; second term; 3 credits; 2 recitations; 1 three-hour laboratory period. Fee $0.50.

Text: Kimball and Barr, Machine Design. Associate Professor Phillips.

ME 313. **Machine Design.** This course supplements and is directly dependent upon the work of ME 311 and 312. The work is taken up from a practical point of view and applies such theory as is consistent with the approved methods of design. Design and complete working drawings are made of machines.

Required in Mechanical Engineering; junior year; third term; 3 credits; 1 recitation; 2 three-hour laboratory periods. Fee $0.50. Associate Professor Phillips.

ME 315. **Advanced Mechanical Drawing.** A course in elementary machine design dealing with the design of simple installations and parts of machinery by means of standard handbooks and empirical formulas.

Required in Industrial Arts; senior year; second term; 3 credits; 3 laboratory periods. Associate Professor Phillips.

ME 412. **Power Plant Design.** The complete design and layout of power and refrigeration plants; coal-handling machinery; foundations and buildings, alone and in combination with other machinery, in accordance with best practice and from blue prints of actual power-plant machinery as built by the best American manufacturers.

Required in Mechanical Engineering; senior year; first term; 2 credits; 2 three-hour drawing periods. Professor Goldman.

ME 413. **Power Plant Design.** Continuation of ME 412.

Required in Mechanical Engineering; senior year; second term; 2 credits; 2 three-hour drawing periods. Professor Goldman.

ME 414. **Power Plant Design.** Continuation of ME 413.

Required in Mechanical Engineering; senior year; third term; 3 credits; 3 three-hour drawing periods. Professor Goldman.

ME 121. **Elements of Heat Engineering.** An introductory course in the fundamental principles of heat engineering as applied to the conversion of heat energy into mechanical energy, by means of expansion of vapors and gases; a study of fuels and combustion; laboratory practice in maintenance of engines and their repair.

Required in Mechanical Engineering; freshman year; first term; 3 credits; 2 recitations; 1 three-hour laboratory period. Fee $1.50.

ME 122. **Steam Engines.** The elements of fuels; combustion; boilers and boiler auxiliaries; steam engines and turbines; flue-gas analysis and its application; practice in the operation of steam machinery; its adjustment and the diagnosis and correction of steam troubles; solution of problems in steam technic.

Required in Mechanical Engineering; freshman year; second or third term; 3 credits; 2 recitations; 1 three-hour laboratory period. Fee $1.50.

ME 124. **Gas Engines.** Gas engine fuels; their combustion; construction of the various types of engines; carburetors and ignition systems; practice in the operation of gas engines; their adjustment; diagnosis and correction of engine troubles.

Required in Mechanical Engineering; freshman year; second or third term; 3 credits; 2 recitations; 1 three-hour laboratory period. Fee $1.50.

ME 224. **Gas Engines.** The technic and practice of gas engines; including a study of the various types of gas-engine construction; their adaptability to practice; carburetors; ignition systems; liquid and gaseous fuels; combustion; practice in the maintenance and operation of gas engines; their adjustment and the correction of engine troubles.

Required in Electrical Engineering; sophomore year; first term; 3 credits; 2 recitations; 1 three-hour laboratory period. Fee $1.50.

ME 221. **Heat Engineering.** An advanced course in the study of the laws of transmission and transformation of heat; combustion; steam generation; gases and gas-engine cycles; vapors and vapor cycles; determination of cycle efficiencies; construction of boilers; engines; draft apparatus; condensers; turbines; valve gear; and governors; laboratory practice in operation of power systems; their adjustment and the diagnosis and correction of power system troubles.

Required in Mechanical Engineering; sophomore year; second term; 3 credits; 2 recitations; 1 three-hour laboratory period. Fee $1.50. Professor Goldman.

ME 222. **Heat Engineering.** Continuation of ME 221.

Required in Mechanical Engineering; sophomore year; third term; 2 recitations; 1 three-hour laboratory period. Fee $1.50. Professor Goldman.

ME 228. **Steam Machinery.** A study of solid fuels; their combustion; boilers and auxiliaries; simple, compound, and uniflow engines; care and operation of steam machinery; its adjustment; flue-gas analysis and its application to practice.

Required in Electrical Engineering; sophomore year; second term; 3 credits; 2 recitations; 1 three-hour laboratory period. Fee $1.50.

ME 329. **Steam Turbines.** Study of the various commercial types of impulse; reaction and mixed-flow turbines; turbo-generators; their method of governing; theory, efficiency, and construction; laboratory practice in their operation and adjustment, with especial reference to the requirements of the electrical engineer.

Required in Electrical Engineering; junior year; second term; 3 credits; 2 recitations; 1 three-hour laboratory period. Fee $1.50, Professor Goldman.

ME 421, 422. **Power Plant Engineering.** A course in the choice and coordination of power plant machinery and its assembly; foundations; buildings; elevating and conveying machinery used in power plants; water-treating systems; the economics of power plants.

Required in Mechanical Engineering; senior year; first and second terms; 2 credits each term; 2 recitations. Professor Goldman.

ME 425. **Refrigeration.** Study of the laws of vapors and gases as applied to refrigeration; their cycles; construction and operation of refrigeration systems and structures; the economics of refrigeration systems.

Required in Mechanical Engineering; senior year; third term; 2 credits; 2 recitations. Professor Goldman.

ME 335. **Financial Engineering.** A course in cost segregation and cost analysis; determination of total annual production and true unit cost; analysis of system economy; determination of size and type of a system and number of units in a plant for best financial efficiency; determination of the comparative value of various types of equipment.

Required in Mechanical Engineering; junior year; second term; 3 credits; 3 recitations. Professor Goldman.

ME 336. **Financial Engineering.** Continuation of ME 335.

Required in Mechanical Engineering; junior year; third term; 3 credits; 3 recitations. Professor Goldman.

ME 339. **Steam Power Plants.** A study of the composite steam-power plant, covering the assembly and coordination of the various units, coal handling machinery for power plants, etc., with especial reference to their use in electrical generating and distributing systems, together with preliminary estimates and layout of such plants.

Required in Electrical Engineering; junior year; third term; 3 credits; 2 recitations; 1 three-hour drawing period. Professor Goldman.

ME 351. **Mechanics.** 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 movements of inertia and their practical applications; numerous problems having engineering application.

Prerequisite: Differential and Integral Calculus. Required in Mechanical, Electrical, Civil, and Mining Engineering; junior year; first term; 3 credits; 3 recitations. Text: Hancock, Applied Mechanics for Engineers. Dean Covell.

ME 352. **Mechanics.** A continuation of ME 351 dealing with principles and problems in Kinetics; force as a factor causing motion; work, energy, friction, and impact studied and illustrated by means by numerous problems.

Prerequisite: ME 351. Required in Mechanical, Electrical, Civil, and Mining Engineering; junior year; second term; 3 credits; 3 recitations. Text: Hancock, Applied Mechanics for Engineers. Dean Covell.

ME 353. **Strength of Materials.** In this course the general principles of mechanics are applied to the elements of engineering structures to determine their strength and fitness. Some of the features are 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 tension to shafts in transmission of power. Students are required to work and hand in problems.

Prerequisite: ME 352. Required in Mechanical, Electrical, Civil, and Mining Engineering; junior year; third term; 3 credits; 3 recitations. Text: Boyd, Strength of Materials. Dean Covell.

ME 465. **Heating and Ventilating.** Study of modern methods of heating and ventilation; 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.

Required in Mechanical Engineering; senior year; 3 credits; 1 recitation; 2 three-hour laboratory periods. Text: Hoffman, Heating and Ventilating. Fee $0.50. Associate Professor Phillips.

ME 481, 482, 483. **Seminar.** Practice in effective writing and speaking on engineering and allied subjects. Preference is given to the discussion of any new developments in the field of Mechanical Engineering.

Required in Mechanical Engineering; senior year; 1 credit each term; 1 recitation. Professor Goldman.

ME 11. **Vocational Drawing.** Course ME 111 simplified for those students who have not had high school drawing.

Required in Vocational Curriculum in Mechanic Arts; first term; 2 credits; 2 three-hour laboratory periods. Fee $0.50. Text: French, Engineering Drawing.

ME 12. **Vocational Drawing.** Theory and problems in conventional representation of bolts, nuts, screws, and other machine parts; drawings of simple machines.

Required in Vocational Curriculum in Mechanic Arts; second term; 2 credits; 2 three-hour laboratory periods. Fee $0.50. Text: French, Engineering Drawing.

ME 13. **Vocational Drawing.** Practical machine drafting including free-hand drawing, assembly and detail drawings of machines such as are built at the College shops; methods of dimensioning and checking. Advanced students will have work in gearing.

Required in Vocational Curriculum in Mechanic Arts; third term; 2 credits; 2 three-hour laboratory periods. Fee $0.50.

SCHOOL OF FORESTRY

WILLIAM JASPER KERR, D.Sc., President of the College
GEORGE WILCOX PEAVY, M.S.F., Dean of the School of Forestry
CARRIE BAILEY, Secretary to the Dean

EDWARD MARTIN BUOL, C.E., Assistant Professor of Logging Engineering
HAROLD STEPHENSON NEWINS, M.F., Associate Professor of Forestry

Since Oregon is the foremost timber state in the Union, having one-fifth of the uncut timber of the country, a distinct responsibility rests upon the commonwealth to see to it that the great timber wealth is conservatively managed and harvested.

The work of the School of Forestry is divided into two distinct branches. One deals with the production and protection of the forest crop, while the other deals with harvesting the mature timber.

Technical Forestry. Within the past decade the American forester has won notable recognition, and the profession of Forestry has made a wonderful growth. The Federal Government has set aside one hundred fifty-six million acres of forest land to be permanently devoted to growing timber. In Oregon an area of thirteen million acres lies within the National Forests, while an area of eleven million acres is privately owned. Since it is suited only to growing timber, much of the privately owned land will eventually be brought under some form of management so that it can be made permanently productive. This indicates the field of the technical forester. His business is to see to it that this vast area is brought to its highest degree of productiveness and kept there.

Logging Engineering. The logging engineer is a recent development of the Pacific Northwest. In the past, low prices for standing timber, easy logging, and high prices for lumber have made profits to the lumberman sure, and these same conditions have not demanded economy in operation. With high-priced stumpage, timber difficult of access, and low prices for lumber, a revolution in the entire lumber industry is being forced. It has

become a case of economy in operation or financial failure. Bringing the logs over rough country to the mill involves many engineering problems. Among these are the construction of logging railroads, the installation of efficient sky-line and ground-logging devices, and the operation of special steam and electrical logging equipment. The curriculum in Logging Engineering is designed to equip young men to be of use in this field. The curriculum as outlined in this catalogue was prepared under the direction of some of the ablest timbermen in the Pacific Northwest, and the strictly technical subjects in the curriculum are taught by men who have had practical experience in some of the most progressive logging operations in the country.

Equipment. The School of Forestry is now provided with suitable space in which to do its work. A three-story building, eighty feet wide and one hundred and thirty-six feet long, has been constructed to house the work in Forestry. This building contains roomy laboratories for work in silviculture, dendrology, mensuration, forest protection, timber technology, drafting, timber grading, and logging devices and equipment. Through the kindness of the manufacturers of logging equipment and lumber manufacturing concerns, much valuable material has been assembled for demonstration purposes. In addition to the laboratories, class rooms, and offices, space is devoted to a collection of manufactured wood products, designed to show the various uses to which wood may be put, and to educate students in the proper utilization of Oregon's greatest natural resources. All available publications dealing with general forestry, logging, or lumber manufacture are provided for the use of students.

DEGREE CURRICULUM IN GENERAL FORESTRY

The following courses are recommended for freshman and sophomore students who desire to work for a degree either in General Forestry or in Logging Engineering. For graduation the College requires the student to complete 201 credits. The student is expected to complete the professional work as outlined below. Other subjects may be substituted only upon the approval of the Dean. Freshman and sophomore requirements are modified only in exceptional cases.

Freshman Year

	Term 1st	2d	3d
General Forestry (For 111, 112)	4	3	
Elementary Mensuration (For 123)			4
English (Eng 101, 102)	3	3	
Mathematics (Math 111, 131, 132)	4	4	4
* General Chemistry (Chem 101, 102, 103)	3	3	3
Plane Surveying (CE 124, 125)		2	4
Hygiene (PhEdM 121)	1		
Gymnasium (PhEd M 111, 112, 113)	½	½	½
Military Science and Tactics	1	1	1
	16½	16½	16½

Sophomore Year

Mensuration (For 221)	4		
Advanced Mensuration (For 222)		4	
Tree Identification (For 253)			4
Forest Mapping (For 224)		3	
Introduction to Economics (ES 203)	3		
Labor Problems (ES 301)			3
Woodwork (IA 121)			2
Engineering Physics (Phys 111, 112, 113)	3	3	3
Topographic Surveying (CE 224)	5		
Railroad Surveying (CE 225)		5	
English (Eng 251)			3
Military Science and Tactics	1	1	1
Gymnasium (PhEd M 211, 212, 213)	½	½	½
	16½	16½	16½

* Students in General Forestry may elect Botany 101, 102, in place of Chemistry 101, 102, 103.

The following courses are recommended for junior and senior students who are working for a degree in General Forestry.

Junior Year

	Term		
	1st	2d	3d
Identification of Woods (For 331)	4		
Forest Administration (For 311)	3		
Silviculture (For 342, 343)		4	4
Uses of Wood (For 332)		3	
Forest Appraisals (For 313)			5
Adv. Business Law (PS 201, 202)	4	4	
Forestry Accounting (BA 231)			3
Comparative Government (PS 401)	4		
Forest Entomology (Ent 321)		4	
Advanced Forest Mapping			3
Military Science and Tactics	2	2	2
	17	17	17

Senior Year

Forest Finance (For 411, 412)	5	5	
Economics of Lumber Industry (For 413)			5
Dendrology (For 451, 452)	5	5	
Forest Management (For 416)			5
Timber Technology (For 431, 432)	4	3	
Forest Engineering (For 473)			5
Log Scaling (For 421)	3		
Seminar (For 462, 463)		1	2
Materials of Engineering (ExE 311)		3	
	17	17	17

DEGREE CURRICULUM IN LOGGING ENGINEERING

Freshman and Sophomore Years

The work for these years is the same as that for the corresponding years in General Forestry.

The following courses are recommended for junior and senior students who are working for a degree in Logging Engineering.

Junior Year

	Term		
	1st	2d	3d
Logging Railroads (LE 371, 372)	4	4	
Forest Appraisals (For 313)			5
Identification of Woods (For 331)	3		
Uses of Wood (For 332)		4	
Efficiency Systems (For 316)			4
Advanced Business Law (PS 201, 202)	4	4	
Machine Shop (IA 363)			3
Comparative Government (PS 401)	4		
Steam Machinery (ME 228)		3	
Forestry Accounting (BA 231)			3
Military Science and Tactics	2	2	2
	17	17	17

Senior Year

Forest Finance (For 411, 412)	5	5	
Economics of Lumber Industry (For 413)			5
Topographic Logging Plans (LE 471, 472)	5	5	
Logging Dev. and Equipment (LE 481, 482)	4	3	
Logging Machine Design (LE 483)			5
Log Scaling (For 421)	3		
Materials of Engineering (ExE 311)		3	
Logging Methods (LE 493)			3
Lumber Manufacture (LE 496)			3
Seminar (For 462, 463)		1	1
	17	17	17

GENERAL FORESTRY

COURSES

For 111. **General Forestry.** Preliminary survey of the whole field of Forestry; origin and progress of scientific Forestry; economic necessity of Forestry; present forest wealth and possibilities of increasing it; forest ownership, private, state, and national; preliminary survey of state and national forest laws and policies; outline of national forest organization.

Required in Forestry and Logging Engineering; freshman year; first term; 4 credits; 4 lectures and recitations. Reference text: Moon and Browne, Elements of Forestry. Dean Peavy.

For 112. **General Forestry.** Responsibility of civilized man for the conservation of natural resources; vital interests of this nation in its timber, coal, iron, oil, water, etc.; methods of insuring longest and best use of natural resources; conservation legislation.

Required in Forestry and Logging Engineering; freshman year; second term; 3 credits; 3 lectures and recitations. Reference text: Van Hise, Conservation of Natural Resources. Dean Peavy.

For 311. **Forest Administration.** Federal forests; Forest Service organization; national supervision; the district; the forest as an administrative unit; administration of state forests; private forests; discussion of fire prevention and control methods.

Required in Forestry; junior year; first term; 3 credits; 3 lectures and recitations.

For 313. **Forest Appraisals and Reports.** Commercial timber land examinations as made by commercial cruising companies; cruising methods required by bonding companies, bankers, purchasers, and operators; reports on such examinations; cruising methods and their relative merits; field work and report on a problem of practical value to some logging concern.

Required in Forestry and Logging Engineering; junior year; third term; 5 credits; 3 lectures; 2 three-hour field or laboratory periods. Fee $3.00. Assistant Professor Buol.

For 316. **Efficiency Systems.** General discussion of efficiency systems; special application to lumber industry; cost-keeping systems and their comparative values; organization; cost keeping

versus bookkeeping; bonus, merit, profit-sharing, and piece systems; labor problems as applied to logging industry; present-day labor management as practiced in modern logging operations.

Required in Logging Engineering; junior year; third term; 5 credits; 5 lectures. Fee $4.00. Assistant Professor Buol.

For 411, 412. **Forest Finance.** Investments and costs in forest production; value of forest 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.

Required in Forestry and Logging Engineering; senior year; first and second terms; 5 credits each term; 5 lectures and recitations. Reference text: Chapman, Forest Valuation. Dean Peavy.

For 413. **Economics of the Lumber Industry.** Brief history of lumbering in the United States; stumpage prices; prices of manufactured lumber; shifting centers of production; transportation; freight rates; the Interstate Commerce Commission and the lumber industry; substitutes and their effects; lumbermen's associations; present rate of consumption and the future supply; function of the Government in the future of the industry.

Required in Forestry and Logging Engineering; senior year; third term; 5 credits; 5 lectures and recitations. Dean Peavy.

For 416. **Forest Management.** Business considerations underlying management of forests; reconnaissance methods used in securing data on forest resources as a basis for working plans; regulating the cut; plans adapted to American conditions for securing utilization of forest resources and obtaining the objects of management; complete working plan for definite forest area.

Required in Forestry; senior year; third term; 5 credits; 4 lectures; 1 two-hour laboratory period.

For 123. **Elementary Mensuration.** Federal survey system; identification of corners and lines; methods of covering the ground in timber cruising; pacing; instruments and devices used in measuring diameters and heights of trees; units of timber measurement; contents of felled timber; scale rules; simple plane table work.

Required in Forestry and Logging Engineering; freshman year; third term; 4 credits; 3 recitations; 1 three-hour laboratory

period. Fee $2.00. Reference text: U. S. Manual of Public Land Surveys.

For 221. **Mensuration.** Topographic surveying of forested areas as basis for timber appraisal; keeping field notes; traversing; practice in surveying with aneroid barometer with the use of barograph as a checking instrument; execution of public land surveys; retracing surveyed lines in timber; section subdivisions.

Required in Forestry and Logging Engineering; sophomore year; first term; 4 credits; 3 recitations; 1 three-hour field or laboratory period. Fee $2.00.

For 222. **Advanced Mensuration.** Volume tables and form factor tables for timber estimating; growth studies; yield tables; complete valuation surveys including application of methods; comparison between values derived in logging and mill cuts and estimates of standing timber; field work at the mills and in the woods; complete valuation survey and report on a given piece of timber; advanced work in the execution of topographic surveys on timbered areas; costs.

Required in Forestry and Logging Engineering; sophomore year; second term; 4 credits; 3 recitations; 1 three-hour field period. Fee $2.00. Reference text: Graves, Forest Mensuration.

For 224. **Forest Mapping.** Drill in detail of forest mapping; lettering and conventional signs; crayon and ink colorings in Forest Service and other standard legend; making of final reconnaissance and land classification maps; finishing maps; relief maps from topographic data; free-hand field sketching.

Required in Forestry and Logging Engineering; sophomore year; second term; 3 credits; 3 two-hour laboratory periods. Fee $2.00.

For 421. **Log Scaling.** Log Scaling in the United States generally and in Pacific Northwest and British Columbia in particular; theory of board measure; merits and demerits of scale rules; allowances for log defect; records; scaling with reference to log grades as practiced on the Pacific Coast in different kinds of timber; rules governing the scale of logs in different districts; rules of log scaling and grading bureaus; scaling at mills and logging camps; laws governing scaling.

Required in Forestry and Logging Engineering; senior year; first term; 3 credits; 2 lectures; 1 three-hour field period. Fee $2.00. Assistant Professor Buol.

For 331. **Identification of Woods.** Identification of important commercial woods. Physical and structural properties. Study of standard commercial grading rules. Practical work in grading manufactured lumber.

Required in Forestry and Logging Engineering; junior year; first term; 4 credits; 2 lectures; 2 two-hour laboratory periods. Fee $2.00. Reference text: Record, Economic Woods.

For 332. **Uses of Wood.** Study of wood structure; 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, pulp, fiber, board, etc.; by-products.

Required in General Forestry and Logging Engineering; junior year; second term; 3 credits; 2 lectures; 1 two-hour laboratory period. Fee $2.00. Reference text: Kellogg, Lumber and Its Uses.

For 334. **Commercial Woods.** Designed primarily to meet requirements of the woodworker in choosing species of wood best adapted to his needs, and in identifying woods commonly used; macroscopic and microscopic identification of different species; dendrology and its significance in wood technology; taxonomy, showing how trees are classed.

For 431. **Timber Technology.** Fundamental principles underlying seasoning and kiln drying of woods; kiln drying methods and their relative merits; effect of kiln drying upon wood structure; preservative treatment of timber, methods and results; manufacture of alcohol, turpentine, resin, tar, and other chemical products from wood; closer utilization of wood waste.

Required in Forestry; senior year; first term; 4 credits; 2 lectures; 2 two-hour laboratory periods. Fee $3.00.

For 432. **Timber Technology.** A continuation of For 431.

Required in Forestry; senior year; second term; 3 credits; 2 lectures; 1 two-hour laboratory period. Fee $2.00.

Required in Industrial Arts; junior year; third term; 3 credits; 1 lecture; 2 two-hour laboratory or field periods. Fee $2.00. Reference texts: Noyes, Wood and Forest. Kellog, Lumber and Its Uses.

For 342. **Silviculture.** Art of establishing, developing, and reproducing trees; forest description; silvicultural system of cutting; marking trees for cutting; silvicultural management; improvement of woodlands; protection as related to Silviculture; natural and artificial regeneration; nursery practice; planting.

Required in Forestry; junior year; second term; 4 credits; 3 recitations; 1 two-hour laboratory period. Fee $2.00. Reference texts: Graves, Handling of Woodlands. Toumey, Seeding and Planting.

For 343. **Advanced Silviculture.** Practice of Forestry in silvicultural regions of the United States; forest ecology; silvics, including the measure of tolerance, study of sample plots, economic possibilities of species, and reproduction characteristics; detailed silvical study of some definite forest tract.

Required in Forestry; junior year; third term; 4 credits; 3 recitations; 1 two-hour laboratory period. Fee $2.00. Reference text: Toumey, Seeding and Planting.

For 451, 452. **Dendrology.** Classification and identification of forest trees, including study of forest ecology and taxonomy; silvical characteristics and commercial species; life-history and requirements of trees.

Required in Forestry; senior year; first and second terms; 5 credits each term; 3 recitations; 2 two-hour laboratory periods. Fee $2.00 each term. Reference texts: Sudworth, Trees of the Pacific Slope. Sargent, Trees of North America.

For 253. **Tree Identification.** Field characteristics and classification of timber trees of United States; their commercial range, local occurrence, size, growth, form, climate, soil, and moisture requirements; resistance; relative tolerance and reproduction. The fundamental purpose is to teach the student to identify commercial timber trees.

Required in Forestry and Logging Engineering; sophomore year; third term; 4 credits; 2 lectures; 2 three-hour laboratory or field periods. Fee $2.00. Reference text: Sudworth, Trees of the Pacific Slope.

For 462. **Seminar.** Preparation and discussion of reports of special subjects; current forestry and lumbering literature; labor problems. Each student is required to prepare a report on some assigned subject.

Required in Forestry and Logging Engineering; senior year; second term; 1 credit; 1 two-hour conference period. Dean Peavy.

For 463. **Seminar.** Continuation of For 462.

Required in Forestry and Logging Engineering; senior year; third term; 2 credits; 2 two-hour conference periods. Dean Peavy.

For 37X. **Field Work.** Based upon practical work performed by the student between the sophomore and junior years or between the junior and senior years. Work must be done on some modern logging operation or in connection with some technical forestry work carried on by the State or by the Forest Service. A report based upon an approved outline must be submitted.

Elective in Forestry and Logging Engineering; junior or senior year; 1 to 6 credits.

For 473. **Forest Engineering.** Trail and road construction under forest conditions; telephone systems adapted to forest administration rangers' buildings; lookout stations; fire-finding appliances; advanced problems in topographic and relief map construction.

Required in Forestry; senior year; third term; 5 credits; 4 lectures; 1 two-hour laboratory period. Fee $3.00.

LOGGING ENGINEERING

COURSES

LE 371, 372. **Logging Railroads.** Railroads adapted to logging operations; difference between logging railroads and common carrier railroads; grades; alignment; railroad operation as applied to logging railroads; economic theory of location and construction; structures and materials used in logging railroads; costs of surveys, construction, operation, and maintenance; bridge and tunnel construction; economics of construction and operation; financing and management.

Required in Logging Engineering; junior year; first and second terms; 4 credits each term; 2 lectures; 2 three-hour laboratory periods. Fee $4.00 each term. Reference text: Wellington, Economic Theory of Railway Location. Assistant Professor Buol.

LE 37X. **Field Work.** Same as For 37X.

LE 471, 472. **Topographic Logging Plans.** Plans for logging operations; making topographic map of timbered area; timber cruised and complete set of plans worked out, showing proper location of main-line logging railroads, railroad spurs, rollways or landings, pole roads, swing settings, logging area lines; estimates of costs.

Required in Logging Engineering; senior year; first and second terms; 5 credits each term; 3 recitations; 2 three-hour field periods. Fee $5.00 each term. Assistant Professor Buol.

LE 481. **Logging Devices and Equipment.** Flume and chute construction; rigging; types of railroad locomotives, logging cars, and trucks; donkey engines; skidding and loading devices; camp buildings, shops, dwellings; machine-shop machinery and tools; woods tools; railroad-track equipment and fixtures; oil, grease, packing, and waste; water-supply systems; explosives; construction equipment; boilers, aerial tramways, snubbing devices; incline railroads; blocks and hooks, wire rope, logging dams, electrical machines used in logging; detailed investigation of costs and makes of equipment; aerial and high lead systems; economic value of using efficient equipment.

Required in Logging Engineering; senior year; first term; 4 credits; 2 lectures; 2 three-hour laboratory periods. Fee $4.00. Assistant Professor Buol.

LE 482. **Logging Devices and Equipment.** A continuation of LE 481.

Required in Logging Engineering; senior year; 3 credits; 2 lectures; 1 two-hour laboratory period. Fee $3.00. Assistant Professor Buol.

LE 483. **Logging Machine Design.** Designing logging equipment and rigging and tools; instruction in preparation of working plans for machine shop and foundry construction; making drawings of standard woods tools and railroad equipment constructed in mill and camp shops.

Required in Logging Engineering; senior year; third term; 5 credits; 2 lectures; 3 two-hour laboratory periods. Fee $4.00. Assistant Professor Buol.

LE 493. **Logging Methods.** Yarding, skidding, and loading of logs by all known methods; falling and bucking; relative merits of various methods; all known methods of handling timber from the standing tree to the mill.

Required in Logging Engineering; senior year; third term; 3 credits; 3 lectures. Assistant Professor Buol.

LE 496. **Lumber Manufacture.** Discussion of various types of modern mills; manufacture of secondary products; electrical versus steam mills; lumber handling devices; examinations of up-to-date mills and reports on them.

Required in Logging Engineering; senior year; third term; 3 credits; 2 lectures; 1 two-hour laboratory period.

SCHOOL OF HOME ECONOMICS

WILLIAM JASPER KERR, D.Sc., President of the College
AVA BERTHA MILAM, Ph.B.,A.M., Dean of the School of Home Economics
ZELTA FERN FEIKE, B.S., Secretary to the Dean

JESSIE BILES, A.B., Instructor in Household Science
*LAURA JEAN CHENEY, B.S.,M.A., Instructor in Household Science
WINNONA ETHEL CRUISE, B.A.,A.M., Instructor in Household Science
HATTY ROSELLE DAHLBERG, B.S.,A.M., Associate Professor of Home Economics Education
BERTHA DAVIS, M.S., Professor of Home Economics Education
HELEN LEE DAVIS, A.B.,B.S., Professor of Household Art
ALMA CATHERINE FRITCHOFF, A.B., Instructor in Household Art
SIBYLLA HADWEN, Instructor in Household Science
KATHERINE BARBARA HAIGHT, R.N., Instructor in Household Administration
ALMA GRACE JOHNSON, B.S., Professor of Household Administration
LURA AMELIA KEISER, B.S., Instructor in Home Economics Education
MARY KIEFFER, B.S., Instructor in Household Science
MARY ELIZABETH KOLL, B.S., Instructor in Household Science
SARAH LOUISE LEWIS, B.S., Professor of Household Science
KATHERINE McFARLAND, B.S., Instructor in Household Science
HELEN McFAUL, B.A., Instructor in Household Art
LULU LITTEN MAY, B.S., Instructor in Household Art
MARGARET MOREHOUSE, B.S., Instructor in Household Art
LILA MORRIS O'NEALE, A.B., B.S., Assistant Professor of Household Art
SARA WATT PRENTISS, B.S., Instructor in Household Administration
LOUISE ALBERT SCHNEIDER, Instructor in Household Art
MARY VAN KIRK, Instructor in Household Art
EMMA SKINNER WELD, Ph.,B., Instructor in Household Administration

The School of Home Economics offers the following curricula: two four-year curricula each leading to the degree of Bachelor of Science, with majors in Household Science, Household Art, Household Administration, Institutional Management, Applied Design, and Home Economics Education; a graduate curriculum leading to the degree of Master of Science; a one-year curriculum for dietitians; a one-year homemakers' curriculum; and six-week courses for teachers, offered in the Summer School.

---

*On leave of absence.

Fundamentally, the young women in the School of Home Economics are offered such training as will help them to adjust themselves readily to their environment. That the young women completing this work may be good citizens as well as good homemakers, the curricula in the School of Home Economics have been planned to give a liberal as well as a technical education.

Opportunities for teaching Home Economics in high schools and colleges; in the grade schools of cities; in the consolidated community schools of progressive rural communities; and in Smith-Hughes full-time, part-time, and continuation schools, are constantly increasing and becoming more desirable. Facilities for specializing in this work at the College are therefore given special attention. Many opportunities are open to mature women capable of solving the problems of good food service for large numbers of people, and for experts in the management of large institutions. Equally attractive opportunities are available for the expert needlewoman, the tasteful designer of gowns, the competent dressmaker or milliner, the ladies' tailor, buyers and testers of textile materials, and the woman with artistic resources as a household decorator and furnisher.

More and more the life of the modern community is dependent upon institutions. Women are rapidly entering upon service as executive and administrative leaders in the important functions of these institutions. Hospitals, institutional homes, educational institutions, and social centers are increasingly demanding the services of mature women of skilled technical accomplishments. There is a growing demand for dietitians in hospitals and large institutions, in the Red Cross service, and as managers of cafeterias and tea rooms. The training in dietetics, catering, and management offered the young women at the College through the School of Home Economics, gives both liberal and practical preparation for this employment. The textile and clothing courses, together with art and science training, give a good foundation for various lines of laboratory, research, testing, buying, and inspecting work.

With the establishment of the College Practice House, House Administration is being more effectively taught than was formerly possible. Institutional Management is being developed by practical work given in tea-room management, catering, and dormitory practice.

Quartered in a new building, provided with a thoroughly modern heating, ventilating, and sanitary system, and equipped with the most approved facilities for conducting the work of the various departments, the School of Home Economics is in a very fortunate position for making its courses of the utmost value, not only to its resident students, but to the communities of the State at large wherever its extension activities may penetrate.

Requirements for Graduation. In order to secure the degree in Home Economics, a minimum of 192 college credits must be completed. The subjects required in the freshman and sophomore years are prescribed. The subjects for the junior and senior years are in part prescribed, the remaining credits being elective.

Degree Curricula in Home Economics. The School of Home Economics offers two main curricula leading to the bachelor's degree:

I. A Professional Curriculum, including principally technical courses, for those desiring not only preparation for home-making, but also to qualify for positions as teachers of Household Science and Household Art, extension workers, or institutional managers. The first two years, as prescribed, give the necessary foundation for any one of these occupations; the junior and senior years are in part elective, making possible specialization in any one of these departments. The required and elective courses are so adjusted that the student may obtain thorough technical preparation and at the same time benefit by the broad training which any undergraduate course of study should afford. This curriculum fulfills the requirements of the State Board of Vocational Education for the training of Smith-Hughes teachers.

II. A General Curriculum, less severely technical, and allowing for liberal electives, for those desiring preparation in the problems of home-making, together with considerable freedom in electing courses in other fields.

Dietitians' Curriculum. This one-year curriculum is intended for women who desire adequate training for positions as dietitians in hospitals; in other institutions under state, county, charitable, or private management where large numbers of people are housed and fed; or under military or Red Cross auspices. Students matriculating for this course must be at least twenty-five years of age, and

graduates of a four-year high-school course of study or its equivalent. To secure a dietitian's certificate fifty-one credits are required, including three months of practical field work.

Homemakers' Curriculum. The one-year Homemakers' Curriculum, established 1914, is provided especially for those women whose schooling may not qualify them to enter the degree curricula, or whose duties demand that they content themselves with a brief period of training for their life work, or whose aim in seeking training at the College is exclusively practical. The purpose of the other short courses in Home Economics is quite similar to this: to provide, in the short time assigned to the particular courses, the fullest and most fruitful training that it is possible to offer with the facilities of a thoroughly modern School of Home Economics; and to present this training in such a way that it shall be most immediately and constructively helpful to the particular patrons of the given courses. The detailed outlines of short courses in Home Economics other than the one-year Homemakers' Curriculum are presented in the special bulletins issued for the Winter Short Course and the Summer School.

Admission to any of the Homemakers' courses demands the educational qualification of an eighth grade or common-school course; in cases of mature persons, otherwise capable of carrying on the work, even this qualification may be waived.

PROFESSIONAL CURRICULUM IN HOME ECONOMICS

Freshman Year	Term 1st	2d	3d
General Chemistry (Chem 101, 102,103)	3	3	3
Textiles and Clothing (HA 111, 112, 113)	4	4	4
English (Eng 101, 102, 103)	3	3	3
Art (A 110, 120, 130)	4	4	4
Hygiene (PhEdW 121)	1		
Introduction to Home Economics (HAd 100)		1	
Library Practice (Lib 100)			1
Gymnasium (PhEdW 111, 112, 113)	1	1	1
	16	16	16

Sophomore Year

	Term 1st	2d	3d
Organic Chemistry (Chem 221)	5		
Chemistry of Foods (Chem 222)		5	
Household Physics (Phys 200)			5
Botany (Bot 201)	3		
Household Bacteriology (Bact 205)		3	3
Foods and Cookery (HS 211, 212, 213)	4	4	4
* English or Modern Language	3	3	3
Gymnasium (PhEdW 211, 212, 213)	1	1	1
	16	16	16

Junior Year

Vocational Psychology (Psy 312)	3		
Physiology (Zool 321)	5		
Housewifery (HAd 310)	3		
Costume Design (HA 331)	3		
Principles of Economics (ES 391)		3	
Textiles and Clothing (HA 311)		5	
House Sanitation (HAd 300)		3	
Mothercraft (H Ad 320)			3
Dietetics (HS 320)			5
Business Management (BA 371)			3
Electives	2	5	5
	16	16	16

Senior Year

Sociology (ES 393)	3		
Home Nursing (HAd 430)	3		
National Government (PS 301)		3	
House Decoration (HA 431)		3	
Ethics (Eth 482)			3
Electives	10	10	13
	16	16	16

* If Modern Language is chosen, two years of one language will be expected.

Students training for extension work should elect Rural Sociology, Public Speaking, Methods of Demonstration, Vegetable Gardening, Poultry Raising, etc.

Twenty-two credits in Education are required for a teaching certificate in Oregon. Students planning to teach in Smith-Hughes schools must have 12 instead of 6 weeks of practice teaching.

SUGGESTED DEPARTMENTAL COMBINATIONS

Household Art

Major		Minor	
HA 111	Clothing and Textiles..4	HA 111	Clothing and Textiles..4
HA 112	Clothing and Textiles..4	HA 112	Clothing and Textiles..4
HA 113	Clothing and Textiles..4	HA 113	Clothing and Textiles..4
HA 311	Adv. Clothing and Textiles 5	HA 311	Adv. Clothing and Textiles 5
HA 316	Advanced Textiles.....3	HA 316	Advanced Textiles.....3
HA 321	Beginning Millinery....3	HA 331	Costume Design.....3
HA 331	Costume Design.....3		23
HA 411	Dress Design.....5		
HA 416	Tailoring 3		
HA 431	House Decoration.....3		
Arch 320	House Construction 2		
	39		

Household Science

Major

HS 211 Foods and Cookery.....4
HS 212 Foods and Cookery.....4
HS 213 Foods and Cookery.....4
HS 320 Dietetics 5
HS 420 Diet in Disease.....2
HS 430 Methods of Demonstration 1
HS 435 Experimental Cookery 2
HS 440 Catering 2
HS 447 Tea Room Management 5
HAd 440 Household Management 3
HAd 450 Practice Housekeeping 4

—
36

Minor

HS 211 Foods and Cookery.....4
HS 212 Foods and Cookery.....4
HS 213 Foods and Cookery.....4
HS 320 Dietetics 5
HAd 440 Household Management 3

—
20

Household Administration

Major

HAd 100 Intro. to H. Econ.....1
HAd 300 House Sanitation.....3
HAd 310 Housewifery 3
HAd 320 Mothercraft 3
HAd 430 Home Nursing 3
HAd 440 Household Management 3
HAd 450 Practice Housekeeping 4
HS 211 Foods and Cookery.....4
HS 212 Foods and Cookery.....4
HS 212 Foods and Cookery.....4
HS 320 Dietetics 5
HA 431 House Decoration.....3

—
40

Minor

HAd 100 Intro. to H. Econ.....1
HAd 300 House Sanitation.....3
HAd 310 Housewifery 3
HAd 320 Mothercraft 3
HAd 430 Home Nursing.....3
HAd 440 Household Management 3
HAd 450 Practice Housekeeping 4

—
20

GENERAL CURRICULUM IN HOME ECONOMICS

Freshman Year	Term 1st	2d	3d
English	3	3	3
Mathematics or Science	4	4	4
Modern Language or Science	3	3	3
Hygiene (PhEdW 121)	1		
Library Practice (Lib 100)		1	
Gymnasium (PhEdW 111, 112, 113)	1	1	1
Electives	4	4	5
	16	16	16
Sophomore Year			
English	3	3	3
Modern Language or Science	3	3	3
History or Economics	3	3	3
Gymnasium (PhEdW 121, 122, 123)	1	1	1
Electives	6	6	6
	16	16	16

Junior and Senior Years

If a modern language is chosen, at least two consecutive years of that language must be completed. Two elementary language courses may not be taken in the same year.

For a degree in Home Economics 36 credits in the School of Home Economics are required. The following courses are recommended to make up this requirement:

	Credits
HA 111, 112, 113 Clothing and Textiles	12
HA 211, 212, 213 Foods and Cookery	12
H Ad 310 Housewifery	3
H Ad 320 Mothercraft	3
H Ad 440 Household Management	3
H Ad 430 Home Nursing	3
	36

Minor in Commerce

Students in Home Economics who wish a minor in Commerce should take the following courses as suggested by the Dean of the School of Commerce:

Freshman Year

	Term		
	1st	2d	3d
Accounting (BA 101, 102, 103)	3	3	3
or			
Stenography (OT 101, 102, 103) and Typing (OT 151, 152, 153)	5	5	5

Sophomore Year

Accounting (BA 201, 202, 203)	3	3	3
or			
Typing (OT 151, 152, 153)	2	2	2
or			
Accounting (BA 201, 202, 203)	3	3	3
or			
Advanced Stenography and Typing (OT 201, 202, 203)	5	5	5

The regulations require a minimum of 18 credits for a minor and 36 for a major.

ONE-YEAR DIETITIANS' CURRICULUM

Science Option	4	4	4
Foods and Cookery (HS 11)	4		
Vocational Psychology (Psy 312)	4		
Household Management (HAd 440)	3		
Elementary Dietetics (HS 220)		4	
Methods of Demonstration (HS 430)		1	
Business Management (BA 371)		2	
Foods and Cookery (HS 12)		4	
Diet in Disease (HS 420)			2
Dormitory Management (HS 444)			5
Tea Room Management (HS 447)			5
Meat Judging (AH 475)			1
Electives	2	2	
	17	17	17

ONE-YEAR HOMEMAKERS' CURRICULUM

	Term		
	1st	2d	3d
Foods and Cookery (HS 11, 12, 13)	4	4	4
Textiles and Clothing (HA 11, 12, 13)	4	4	4
Home Management (HAd 11)	2		
Hygiene (Ph Ed W 121)	1		
House Decoration (HA 31)		3	
Care of Children (HAd 22)		2	
Millinery (HA 321)			3
Gymnasium (Ph Ed W 111, 112, 113)	1	1	1
Electives 4 or	5	3	5
	17	17	17

HOUSEHOLD ADMINISTRATION

Equipment. The department of Household Administration has one large laboratory, fully equipped. Recitation and lecture courses are given both in the Home Economics building and in the new Library. A well-equipped and self-supporting Practice House is located on the College campus. Advanced students reside in this house for a period of six weeks and are given an opportunity to study concrete problems in home management under the supervision of a member of the Household Administration faculty.

COURSES

HAd 100. **Introduction to Home Economics.** A course for beginning students. Purpose, value, and scope of Home Economics.

Required in Home Economics; freshman year; second term; 1 credit; 1 lecture. Dean Milam.

HAd 300. **House Sanitation.** Investigation of sanitary principles and conditions from the practical and scientific standpoint with special reference to the needs of the household, the school, and the community.

Prerequisites (or parallel): Bact 205, Phys 200. Required in Home Economics; junior year; any term; 3 credits; 3 recitations. Miss Weld.

HAd 310. **Housewifery.** An application of Chemistry, Physics, and Economics to the care of the house and its furnishings.

Prerequisite: Chem 103. Required in Home Economics; junior year; any term; 3 credits; 2 three-hour laboratory periods. Fee $0.50. Miss Weld.

HAd 320. **Mothercraft.** Development of the child from the time of conception, through infancy, childhood, and adolescence; eugenics, parental care, habit formation; proper feeding; responsibility of parenthood.

Prerequisites (or parallel): Zool 321, HS 201. Required in Home Economics; junior year; any term; 3 credits; 3 lectures. Mrs. Prentiss.

HAd 430. **Home Nursing.** Care of the patient under home conditions; symptoms; first aid; management of communicable diseases.

Prerequisites: Zool 321, Bact 205. Required in Home Economics; senior year; any term; 3 credits; 3 recitations. Fee $0.50.

HAd 440. **Household Management.** (Parallel with Practice House HAd 450.) An application of the principles of scientific management to the home; study of the management of household operations and finances; family and community relationships.

Prerequisite: ES 391. Elective in Home Economics; junior or senior year; any term; 3 credits; 3 recitations. Professor Johnson.

HAd 450. **Practice Housekeeping.** (Parallel with HAd 440.) A course dealing with the problems of the homemaker. Students live in the College Practice House for six weeks and put into practice the training received in all other Home Economics or related courses.

Prerequisites: HS 211, 212, 213, or equivalent. Elective in Home Economics; junior or senior year; any term; 4 credits; 3 hours work daily. Fee $6.00 a week for living expenses. Professor Johnson.

HAd 691, 692, 693. **Modern Problems in Household Administration.** Chemical, physiological, bacteriological, economic, or sociological topics, according to the preference and training of the individual students.

Prerequisite: HAd 440. Elective in Home Economics; senior or graduate year; three terms; credits and hours to be arranged.

HAd 11. **Household Management.** A study of home problems, including the division of the income, choice of site for the house, construction, care of house, and its furnishings.

Required in Homemakers' Curriculum; first or second term; 2 credits; 2 lectures. Fee $0.25. Miss Weld.

HAd 22. **Care of Children.** Brief study of development and care of child through infancy, childhood, and adolescence; parental care, habit formation, proper feeding.

Required in Homemakers' Curriculum; second term; 2 credits; 2 lectures. Mrs. Prentiss.

HAd 33. **Home Nursing.** Observation of symptoms; administration of medicine; care of sick under home conditions.

Elective in Homemakers' Curriculum; third term; 3 credits; 3 lectures. Fee $0.50.

HOUSEHOLD ART

Equipment. The department has offices, class rooms, and laboratories in the Home Economics Building. All necessary furnishings and equipment are available for thorough instruction in textiles, sewing, dressmaking, tailoring, costume design, applied design, millinery, and house decoration.

COURSES

Clothing and Textiles

HA 101. **Elementary Clothing and Textiles.** Fundamental processes of hand and machine sewing applied to the designing and constructing of undergarments and simple dresses, to repairing, and to decorative needlework; textile discussions.

Required of freshmen in Home Economics who have had no high-school sewing; freshman year; first term; 4 credits; 4 three-hour laboratory periods. Fee $1.00. Miss Schneider and Miss Fritchoff.

HA 111. **Clothing and Textiles.** (For freshmen who have had one year or more of sewing in accredited high schools. If students are not able to carry this work successfully they will be required to take HA 101.) Designing and constructing of cotton and linen school dresses; materials, design, and decoration considered from standpoint of appropriateness, economy, and beauty; drafting; flat pattern designing; use of commercial patterns; textile study including development of textile industry and study of cotton relative to its use in the home and for clothing purposes.

Required in Home Economics; freshman year; first or second term; 4 credits; 1 lecture; 3 three-hour laboratory periods. Fee $1.00. Professor Davis, Miss Biles, Miss Fritchoff, Miss Schneider, and Miss Morehouse.

HA 112. **Clothing and Textiles.** Preparation and use of dress form; designing and constructing of simple wool dresses for school or street wear; emphasis on line and technique; appropriate decoration; textile study including linen and wool; practical information which will influence selection and make intelligent buyers.

Prerequisites: HA 111, A 110. Required in Home Economics; freshman year; second or third term; 4 credits; 1 lecture; 3 three-

hour laboratory periods. Fee $1.00. Professor Davis, Miss Biles, Miss Fritchoff, Miss Schneider, and Miss Morehouse.

HA 113. **Clothing and Textiles.** Designing and constructing of simple silk dresses; pattern modeling; remodeling in wool and silk; emphasis on design, color, and texture; textile study of silk; factors affecting cost, quality, etc.; household linens, choice of, care, etc.; children's clothes from hygienic, economic, and artistic standpoints.

Prerequisites: HA 112, A 120. Required in Home Economics; third term; 4 credits; 2 lectures; 2 three-hour laboratory periods. Fee $1.00. Professor Davis, Miss Biles, Miss Fritchoff, and Miss Schneider.

HA 118. **Dress Design and Construction.** (Brief course for young women in School of Commerce and other schools.) Preparation and use of dress form; appropriate designs and principles of construction worked out in the planning and making of blouses, skirts, lingeries, and wool or silk dresses.

Elective; freshman year; any term; 4 credits; 5 two-hour laboratory periods. Fee $1.00. Miss Van Kirk.

HA 311. **Advanced Clothing and Textiles.** This course aims to develop independence, initiative, originality, and art in planning and designing garments for different types of figure, and skill and speed in constructing garments. Designing and constructing of children's clothes, lingerie dresses, and different types of blouses, and silk or wool dresses; textile study of minor textile fibers, their use and importance; laces and embroideries; rugs; problems connected with clothing manufacture; cost, hygiene, and care of clothing.

Prerequisites: HA 113, A 130, HA 331 either prerequisite or parallel. Required in Home Economics; junior year; any term; 5 credits; 2 lectures; 3 three-hour laboratory periods. Fee $1.00. Miss Van Kirk, Miss Bliss, and others.

HA 316. **Advanced Textiles.** Principles of art, economics, hygiene, and psychology applied to clothing; study of adulterants and substitutes; microscopic and chemical analysis of materials.

Prerequisites: HA 113, A 130, Chem 103. Elective; junior year; any term; 3 credits; 3 lectures. Fee $1.00. Professor Davis.

HA 411. **Dress Design.** Designing, modeling, and constructing of afternoon and evening dresses; emphasis on line, proportion, color, and texture; history of costume-development from early Egyptian to modern periods with aim of giving practical help and inspiration to students and teachers of dressmaking and costume design.

Prerequisites: HA 311, 331. Elective; senior year; any term; 5 credits; 2 lectures; 3 three-hour laboratory periods. Fee $1.00. Mrs. Miller.

HA 416. **Tailoring.** Development of principles and processes of tailoring; application on silk and cloth suits.

Prerequisites: HA 311, 331. Elective; senior year; first or third term; 3 credits; 3 three-hour laboratory periods. Fee $1.00.

HA 11, 12, 13. **Textiles and Clothing.** Textile study to assist homemaker in her selection, use, and care of clothing and home furnishing materials; principles of art applied to dress; laboratory work planned to give the student practical experience in the making of all needlework problems that are met in the home; use of dress form; construction of wash dresses and children's clothes; designing and constructing of wool and silk dresses; remodeling.

Required in Homemakers' Curriculum; three terms; 4 credits each term; 2 lectures; 3 two-hour laboratory periods. Fee $1.00 each term. Miss Morehouse.

Millinery

HA 321. **Beginning Millinery.** Designing and constructing frames; methods of covering; trimming and renovating.

Elective; any term; 3 credits; 3 three-hour laboratory periods. Fee $1.50. Miss McFaul.

HA 322. **Advanced Millinery.** This course continues the work of HA 321 with the purpose of developing speed, originality, and better technique; increased emphasis on millinery as a creative art; good foundation for trade work.

Prerequisite: HA 321. Elective; first or third term; 2 credits; 2 three-hour laboratory periods. Fee $1.50. Miss McFaul.

HA 328. Millinery. (Brief course for young women in School of Commerce and other schools.) Designing and construction of hats; trimming and renovating.

Elective; any term; 2 credits; 3 two-hour laboratory periods. Fee $1.50. Miss McFaul.

Applied Design

HA 331. **Costume Design.** Study of proportions of figure, color, types, and personality; effects of line, proportion, and color in dress; problems in designing and modeling based on art principles and historic study.

Prerequisite: A 130. Required in Home Economics; junior year; any term; 3 lectures; 2 two-hour laboratory periods. Fee $1.50. Mrs. Miller.

HA 431. **House Decoration.** Planning and furnishing of homes, considering art, economy, convenience, and sanitation.

Prerequisite: A 130. Required in Home Economics; senior year; any term; 3 credits; 2 lectures; 1 two-hour laboratory period. Fee $1.50. Miss McFaul.

HA 435. **Applied Design.** Decorative art involving careful consideration of line, form, proportion, and color; original designs executed in various media for clothing and house-furnishing problems; tie-dying, batik, and stencil decoration for textiles; embroidery, weaving, basketry, etc.

Prerequisite: A 130. Elective; senior year; first or second term; 3 three-hour laboratory periods. Fee $2.00.

HA 438. **The House.** (Brief course for young women in School of Commerce and other schools.) Planning and furnishing of the home from the standpoint of art, economy, convenience, and sanitation.

Elective; first or third term; 3 credits; 3 lectures. Fee $1.00. Miss Morehouse.

HA 31. **House Decoration.** Planning and decorating the home. Artistic and economic problems.

Homemakers' Curriculum; second term; 3 credits; 3 lectures; 1 three-hour laboratory period. Fee $1.50. Miss Morehouse.

Note: Students in Household Arts courses who do not wish to make garments or hats for themselves may be furnished material through orders given to the department.

HOUSEHOLD SCIENCE

Equipment. The department is located in the Home Economics building. Two single laboratories accommodating 20 students, and two double laboratories accommodating 40 students each, are well equipped. There is also a family kitchen and dining-room where much meal serving is conducted, and an institutional unit where training in institutional management is given.

COURSES

HS 101. **Principles of Foods and Cookery.** This course aims to give laboratory technique and a resume of elementary cookery. All work is upon a meal basis.

Required in Home Economics of students who have had no Household Science in high school; required in Dietitians' Curriculum; elective in School of Commerce and other schools; any term; 4 credits; 4 two-hour laboratory periods. Fee $6.00. Miss Weld and Mrs. Prentiss.

HS 211. **Foods and Cookery.** An introduction to the subject of foods in their scientific and economic aspects of selection, preparation, and use; the processes of digestion, absorption, and assimilation.

Prerequisite: Chem 103. (Bot 201 and Chem 221 prerequisite or parallel.) Required in Home Economics; any term; 4 credits; 2 recitations; 2 three-hour laboratory periods. Fee $4.00. Miss Kieffer.

HS 212. **Foods and Cookery.** A continuation of HS 210.

Prerequisite: HS 211. (Chem 222 must precede or accompany this course.) Required in Home Economics; sophomore year; any term; 4 credits; 2 recitations; 2 three-hour laboratory periods. Fee $4.00. Miss Kieffer and Miss Weld.

HS 213. **Foods and Cookery.** A continuation of HS 211 with stress upon meal planning and serving.

Prerequisite: HS 212. Required in Home Economics; sophomore year; any term; 4 credits; 2 recitations; 2 three-hour laboratory periods. Fee $4.00. Miss Kieffer and Miss Weld.

HS 220. **Elementary Dietetics.** A simplified course in dietetics dealing with food materials in their relations to daily dietaries of families under various conditions of health and environment;

comparison of nutritive values of common foods made by computing, preparing, and serving dietaries of specific costs furnishing specific nutrients.

Prerequisite: HS 101. Required in Dietitians' Curriculum; elective in Commerce and in Home Economics General Curriculum; second term; 4 credits; 2 recitations; 3 two-hour laboratory periods. Fee $4.00. Miss Kieffer.

HS 320. **Dietetics.** Scientific study of food materials in their relation to the daily dietary of families under various conditions of environment; dietary standards of metabolism; comparison of the nutritive values of common foods by computing, preparing, and serving dietaries of specific costs, furnishing specific nutrients.

Prerequisites: HS 213, Zool 321. Required in Home Economics; junior year; any term; 5 credits; 3 recitations; 3 two-hour laboratory periods. Fee $4.00. Miss Cruise.

HS 420. **Diet in Disease.**

Prerequisite: HS 320. Elective in Home Economics; any term; 3 credits; 2 lectures; 1 three-hour laboratory period. Fee $2.00. Miss Cruise.

HS 430. **Methods of Demonstration.** Public demonstrations in food selection and preparation; illustrative demonstrations by instructors.

Prerequisites: HS 213, 320. Elective in Home Economics; junior or senior year; any term; 1 credit; 1 three-hour laboratory period. Fee $1.50. Miss Cruise.

HS 435. **Experimental Cookery.** Individual problems. Each student selects some piece of work concerned with foods or related subjects. Oregon products often furnish material for these experiments.

Prerequisites: HS 213, 320. Elective in Home Economics; senior year; any term; 2 credits; 2 three-hour laboratory periods. Fee $2.00.

HS 440. **Catering.** Training in the planning, purchasing, preparation, and service of food at afternoon teas, luncheons, banquets, etc.

Prerequisite: HS 447. Elective in Home Economics; senior year; any term; 2 credits; 1 six-hour laboratory period. Fee $2.00. Miss Koll.

HS 444. **Dormitory Management.** Practice in handling food materials in large quantities; methods of record keeping; planning equipment of large institutions; cost and replacement, linens, sanitation, service; practical work in housekeeping departments of Waldo and Cauthorn Halls.

Prerequisites: HS 320, HAd 440. Elective in Home Economics; senior year; any term; 5 credits; 1 lecture; 12 hours of laboratory work to be arranged.

HS 447. **Tea Room Management.** Training in all lines of management of tea rooms, lunch rooms, and cafeterias.

Prerequisites: HS 320; HAd 440, 450. Elective in Home Economics; senior year; any term; 5 credits; 1 lecture; 3 four-hour laboratory periods. Miss Koll.

HS 150. **Cookery for Men.** A course for men who are planning and preparing their own meals or who are acting as managers of clubs.

Elective to men; first or second term; 1 credit; 1 three-hour laboratory period. Fee $2.50. Mrs. Prentiss and Miss Kieffer.

HS 350. **Camp Cookery.** Instructions in preparing palatable and nutritious products from foods available in camps; outdoor food preparation, involving the use of dutch ovens, reflectors, and improved camping utensils.

Elective in Forestry, Agriculture, Engineering, and Commerce; junior or senior year; third term; 1 credit; 1 three-hour laboratory period. Fee $2.50. Mrs. Prentiss.

HS 450. **Camp Cookery.** A course designed to give advanced students of Home Economics training in application of principles of cookery to conditions found in the camp.

Prerequisite: HS 320. Elective in Home Economics; senior year; third term; 1 credit; 1 three-hour laboratory period. Fee $2.50. Miss Kieffer.

HS 691, 692, 693. **Research in Cookery.** Research problems for which the student is suited by previous training and ability. Assignment of problems by the professor in charge.

Elective; graduate year; three terms; credits and hours to be arranged.

HS 11, 12, 13. **Foods and Cookery.** A study of foods from standpoint of source, economical purchase, storage, and cookery. A working knowledge of nutritive value of foods is given. Preservation of foods. All work is planned upon the meal basis.

Required in Homemakers' Curriculum; three terms; 4 credits each term; 1 recitation; 3 three-hour laboratory periods. Fee $4.00 each term. Mrs. Prentiss.

HS 15. **Foods and Cookery.** (Brief course for housewives.) Home cookery; study of typical foods and their preparation in attractive forms; planning and serving of meals.

Elective; second term; 1 credit; 12 lessons during the term; 1 three-hour laboratory period. Fee $2.50. Miss Cruise.

SCHOOL OF MINES

WILLIAM JASPER KERR, D.Sc., President of the College
CHARLES EDWARD NEWTON, B.S.,E.M., Dean of the School of Mines; Professor of Mining and Metallurgy
MYRTLE BURNAP, B.S.C., Secretary to the Dean

GEORGE EDWARD GOODSPEED, Jr., S.B., Professor of Geology
ERNEST ROSCOE WILCOX, B.S., Met.E., Assistant Professor of Mining

The curriculum in Mines is designed to give thorough training in the fundamentals of the sciences of Geology, Mining, and Metallurgy, and to prepare for positions of responsibility in the industrial life of the country, particularly in the mining field. The curriculum is of such a comprehensive character that a graduate finds it of aid in varied employments. The opportunities which are open to graduates of the School of Mines include such positions as assayers, chemists, or metallurgists at mines and smelters; member of staffs of the Government and state geological surveys; member of the staff of Government Coast and Geodetic survey; land or deputy mineral surveyors; draftsmen and designers in engineering establishments; members of the engineering and geological staffs of mining, oil, and exploration companies and of railroads; and workers in the land-classification work of the Government forest service. Graduates may expect that after having reached the necessary maturity they will be competent to fill responsible positions in any branches of Geology, Mining, and Metallurgy.

A four-year curriculum, leading to the degree of Bachelor of Science in Mining Engineering, or Ceramic Engineering, is offered by the School of Mines. Students showing ability are offered the opportunity and encouraged to take special work in that branch of the profession that most interests them, such as Geology, Mining, or Metallurgy.

The first two years in the School of Mines are the same for all students. The work is intended to give the student a thorough knowledge of those studies basic to all branches of engineering; namely, Mathematics, Physics, Chemistry, Mechanical Drawing, Plane Surveying, Shop Work, and courses having general cultural value.

Two months or more employment in industrial lines closely allied to the student's major work is a prerequisite to graduation.

Equipment. The School of Mines occupies a commodious, three-story and basement building especially designed for housing the lecture rooms and laboratories devoted to Mining, Metallurgy, Ore Dressing, Geology, Ceramic Engineering, and closely allied subjects. The assaying and metallurgical laboratory occupies a room 30 feet by 60 feet on the first floor of the building, extending across the entire east end. It is amply lighted and is completely equipped with the necessary apparatus for conveniently and scientifically carrying on experimental metallurgical operations. A crushing and grinding laboratory and an ore-testing laboratory, completely equipped, occupy two rooms in the basement, each 25 by 30 feet. On the second floor is located the mining drafting room, equipped for topographical drafting, mining and metallurgical design. The geology laboratories occupy the third floor of the Mines Building, and comprise the Geologic and Mining Museum, the mineralogic laboratory, and the petrologic laboratory. In the Museum are arranged collections of ores, minerals, and rocks from the important mining camps in Oregon. Besides these collections there are many attractive specimens of minerals, rocks, and fossils from numerous American localities. Geologic products are shown, such as samples of different clay wares and cement goods. In addition there is a large-scale relief map of the State. The geologic laboratories contain over 12,000 specimens of ores, rocks, and minerals; rock slides for microscopic work; and geologic and topographic maps.

Miners' Club. The Miners' Club is a society composed of all students and members of the School of Mines. An affiliated organization is a junior branch of the American Institute of Mining Engineers, the membership of which is composed of upper classmen and graduate students. At the monthly meetings of the Club, addresses are made by prominent mining engineers, and papers descriptive of the summer work of the students are presented by the student members.

DEGREE CURRICULUM IN MINING ENGINEERING

Freshman Year

	Term 1st	2d	3d
General Chemistry (Chem 104, 105, 106, 131)	5	5	5
Mathematics (Math 111, 131, 132)	4	4	4
Drawing (ME 111, 112)	2	2	
English (Eng 101, 102, 103)	3	3	3
Descriptive Geometery (CE 113)			2
Elements of Geology (Geol 101)	1		
Elements of Mining (Min 142)		1	
Elements of Metallurgy (Met 163)			1
Physical Education (PhEd 111, 112, 113)	½	½	½
Military Science and Tactics	1	1	1
	16½	16½	16½

Sophomore Year

Chemistry (Chem 231, 241, 242)	3	3	3
Mathematics (Math 251, 252, 253)	4	4	4
Physics (Phys 111, 112, 113)	3	3	3
Surveying (CE 236)			5
Blacksmithing (IA 252)		2	
Mineralogy (Geol 211, 212)	5	3	
Physical Education (PhEd 211, 212, 213)	½	½	½
Military Science and Tactics	1	1	1
	16½	16½	16½

Junior Year

	Term		
	1st	2d	3d
Mechanics (ME 351, 352, 353)	3	3	3
Hydraulics (IE 211)	3		
Electrical Machinery (EE 251)	3		
Engineering Laboratory (ME 338)		3	
General Geology (Geol 301)	3		
Petrology (Geol 311, 312)	3	2	
Principles of Mining (Min 343)			3
Geologic Surveying and Mapping (Geol 323)			3
Mine Surveying (Min 353)			3
Assaying (Met 362)		5	
Principles of Economic Geology (Geol 332, 333)		2	3
Military Science and Tactics	2	2	2
	17	17	17

Senior Year

Mining Engineering (Min 441, 442)	4	4	
Ore Dressing (Met 481, 482, 483)	3	3	3
Metallurgy (Met 462, 463)		4	4
Metallurgical Laboratory (Met 492, 493)		3	3
Metallurgy of Iron (Met 473)			3
Economic Geology (Geol 431)	3		
Principles of Metallurgy (Met 461)	4		
Introduction to Economics (ES 391)	3		
Political Science (PS 301 or PS 302)		3	
Business Management (BA 332)			3
	17	17	16

Suggested Electives

Electrical Engineering

Elementary course in Gas Engines, including operation, maintenance, and theory (ME 224)

Elementary course in steam engineering, including operation, maintenance, and theory (ME 228)

Operation of steam power plants (ME 339)
Masonry and Foundations (CE 312)
Industrial Inorganic Chemistry (ChE 321, 322)
Industrial Organic Chemistry (ChE 431, 432)
Electrochemical Industry (ChE 441)
Geology of Igneous Rocks (Geol 611)
Historical Geology and Stratigraphy (Geol 621)
Oil Geology (Geol 632)
Mine and Metallurgical Design (Met 662)
Electrometallurgy (Met 663)
Thesis

DEGREE CURRICULUM IN CERAMIC ENGINEERING

Freshman and Sophomore Years

The freshman and sophomore years are identical with the first two years of the Degree Curriculum in Mining Engineering.

Junior Year

	Term		
	1st	2d	3d
Mechanics (ME 351, 352, 353)	3	3	3
Hydraulics (IE 211)	3		
Electrical Machinery (EE 251)	3		
Engineering Laboratory (ME 338)		3	
General Geology (Geol 301)	3		
Petrology (Geol 311, 312)	3	2	
Ceramic Chemistry (Cer 302, 303)		3	3
Ceramic Raw Materials (Cer 312, 313)		3	3
Raw Materials Testing (Cer 323)			3
Ceramic Calculations (Cer 333)			3
Military Science and Tactics	2	2	2
	17	16	17

Senior Year

	Term		
	1st	2d	3d
General Metallurgy (Met 461)	4		
Economic Geology (Geol 431)	3		
Manufacture of Clay Products (Cer 421, 422)	3	3	
Clay Products Laboratory (Cer 432, 433)		2	3
Limes and Cements (Cer 452, 453)		2	3
Glasses, Glazes, and Enamels (Cer 411, 412)	3	3	
Ceramic Engineering Laboratory (Cer 443)			2
Field Work and Report (Cer 463)			2
Introduction to Economics (ES 391)	3		
Political Science (PS 301 or PS 302)		3	
Business Management (BA 332)			3
Thesis (Cer 472, 473)		3	3
	16	16	16

GEOLOGY

The courses in Geology are designed primarily to give the student of Mining Engineering a sound knowledge of the principles of the many branches of the science, and a thorough training in geologic technique having a direct bearing upon the mining profession. Advanced technical courses in Geology are open to qualified students. Several geologic courses are especially designed for students in Agriculture, Civil Engineering, and Forestry.

COURSES

Geol 101. **Elements of Geology.** In order to have the simplest conception of the mining profession, one must have an elementary knowledge of Geology. The aim of this course is to give a general outline of the fundamentals of Geology and to show their correct application to mining engineering.

Required in Mines; elective to others; freshman year; first term; 1 credit; 1 lecture. Professor Goodspeed.

Geol 103. **General Geology for Foresters.** Characteristics of the commoner minerals, rocks, and ores; the more important structural features of rocks and mineral deposits; the criteria for recognizing the various types of ore deposits; practice in the interpretation of geologic and topographic maps to enable students to make use of these maps in the field.

Prerequisite: General Chemistry. Elective in Forestry; freshman year; third term; 3 credits; 2 recitations; 1 laboratory period. Fee $1.00. Professor Goodspeed.

Geol 201. **Engineering Geology.** A course in general and applied Geology for students in the School of Engineering, emphasizing those phases of the subject with which the civil, irrigation, and highway engineer should be familiar. The origin and nature of the materials of the earth; review of geologic processes which modify the earth's surface; occurrence and nature of geologic structural and road materials; influence of structure of rocks on engineering projects; study of ground waters and effect on water supply and foundation sites; interpretation of geologic and topographic maps; occurrence of ores and other minerals of economic value.

Required in Civil Engineering (sophomore year); elective to juniors and seniors in the School of Engineering; first term; 4

credits; 3 lectures; 2 two-hour laboratory periods. Fee $1.00. Text: Ries and Watson, Engineering Geology. Professor Goodspeed and Assistant Professor Wilcox.

Geol 202. **General Geology for Students in Agriculture.** This course is designed to present effectively the subject of Geology to the agricultural student. The fundamental principles are given, and their application to agriculture is emphasized. In the laboratory the student studies the common minerals and rocks by practice with extensive collections, so that he may be able to identify them readily in the field. Two field trips are taken that the student may gain first-hand knowledge of geologic processes.

Prerequisite: General Chemistry. Required in Landscape Gardening and Soils; elective to others in Agriculture; sophomore year; second term; 3 credits; 2 lectures; 2 two-hour laboratory periods. Fee $1.00. Professor Goodspeed and Assistant Professor Wilcox.

Geol 301. **General Geology.** Fundamental principles of Geology; practice in the interpretation of geologic and topographic maps; summary of the historical geology and stratigraphy of North America.

Required in Mines; junior year; first term; 3 credits; 3 recitations. Fee $1.00. Text: Pirsson and Schuchert, Textbook of Geology. Professor Goodspeed.

Geol 211. **Crystallography, Blowpipe Analysis, and Determinative Mineralogy.** It is quite essential that the student should have a practical understanding of crystallography and to that end considerable time is spent upon the determination of natural crystals. Blowpipe Analysis is essentially a field method for the chemical determination of minerals. Determinative Mineralogy, as the name indicates, is the utilization of many methods to determine minerals. Emphasis is given to those physical properties which may be used to determine minerals in the field.

Required in Mines; sophomore year; first term; 5 credits; 2 recitations; 4 two-hour laboratory periods. Fee $3.00. Text: Moses and Parsons, Mineralogy, Crystallography, and Blowpipe Analysis. Professor Goodspeed and Assistant Professor Wilcox.

Geol 212. **Mineralogy.** A continuation of Determinative Mineralogy, Geol 211. In addition a certain amount of time is spent in the study of the occurrence and origin of minerals.

Prerequisite: Geol 211. Required in Mines; sophomore year; second term; 3 credits; 1 recitation; 3 two-hour laboratory periods. Fee $2.00. Text: Moses and Parsons, Mineralogy, Crystallography, and Blowpipe Analysis. Professor Goodspeed and Assistant Professor Wilcox.

Geol 214. **Crystallography.** Briefer course than Geol 211.

Required in Chemical Engineering; sophomore year; first term; 3 credits; 1 recitation; 3 two-hour laboratory periods. Fee $1.50.

Geol 215. **Mineralogy.** Topics covered in Geol 212 adapted to needs of Chemical Engineering students.

Required in Chemical Engineering; sophomore year; second term; 3 credits; 1 recitation; 3 two-hour laboratory periods. Fee $2.00.

Geol 311. **Petrology.** This course is intended to familiarize the student with the characteristics of the commoner rocks so that he may identify them in the field. Rocks, their origin, mode of occurrence, and alteration; emphasis upon the numerous petrologic facts and principles which bear an immediate relation to mining operations.

Prerequisites: Geol 212 and 301. Required in Mines; junior year; first term; 3 credits; 2 lectures; 2 two-hour laboratory periods. Fee $1.00. Professor Goodspeed.

Geol 312. **Petrology.** Continuation of Geol 311.

Prerequisite: Geol 311. Required in Mines; junior year; second term; 2 credits; 1 lecture; 2 two-hour laboratory periods. Fee $1.00. Professor Goodspeed.

Geol 413. **Petrography.** A more advanced course in Petrology. The optical properties of the rock-forming minerals and the characteristics of the principal rock types are studied with the aid of thin sections and polarizing microscope. Type collections with their corresponding rock sections are available, and the student has the opportunity to supplement field determinations with the exact knowledge gained through the use of the microscope.

Prerequisites: Geol 311 and 312. Elective; third term; 3 credits; 1 recitation; 3 two-hour laboratory periods. Fee $1.00. Professor Goodspeed.

Geol 611. **Geology of Igneous Rocks.** A course dealing with the origin of igneous rock bodies and designed for graduate or advanced students. Such subjects as magnetic differentiation, the mechanism of intrusive and extrusive action, are discussed in detail, and special attention is given to those subjects that have an important technical bearing, such as contact metamorphism, magmatic waters, gaseous emanations, etc.

Prerequisite: Geol 413. Elective; first term; 3 credits; 3 recitations. Texts: R. A. Daly, Igneous Rocks and Their Origin. Harker, The Natural History of Igneous Rocks. Professor Goodspeed.

Geol 323. **Geologic Surveying and Mapping.** A study of the principles and methods of geologic surveying and mapping and their application to field work. The student is assigned a small area and is required to make a geologic map and report, based upon the results of his field work. A two-week trip is made to a mining locality showing a variety of geologic features.

Prerequisite: Geol 312. Required in Mines; junior year; third term; 3 credits; 1 recitation; 6 hours in field and laboratory. Fee $1.00. Professor Goodspeed and Assistant Professor Wilcox.

Geol 422. **Interpretation of Geologic and Topographic Maps.** Study of the representation of geologic and topographic data; interpretation of geologic maps and cross-sections of topographic maps; methods of plotting geologic data on engineering maps; a large number of Government and other geologic and topographic maps covering varied regions of the United States studied in detail.

Elective in Mines, Engineering, and Forestry; junior or senior year; second term; 2 credits; 2 laboratory periods. Fee $1.00. Professor Goodspeed and Assistant Professor Wilcox.

Geol 621. **Historical Geology and Stratigraphy.** Lectures on the origin and history of the earth and plants and animals that have inhabited it; outline of invertebrate paleontology; principles on which is based the determination of the age of fossiliferous rocks by means of "faunal groups" and by the recognition of characteristic species.

Prerequisite: Geol 312. Elective; first term; 3 credits; 3 recitations. Professor Goodspeed.

Geol 332. **Principles of Economic Geology.** A study of the many and various factors pertaining to the application of geology

to industry. Geologic occurrence and origin of coal, clay, building stone, ore deposits, and the like are carefully studied and particular attention is given to those characteristics affecting economic value.

Required in Mines; junior year; second term; 2 credits; 2 recitations. Text: Lindgren, Mineral Deposits. Professor Goodspeed.

Geol 333. **Principles of Economic Geology.** Continuation of Geol 332.

Prerequisite: Geol 332. Required in Mines; junior year; third term; 3 credits; 3 recitations. Text: Lindgren, Mineral Deposits. Professor Goodspeed.

Geol 431. **Economic Geology.** Various types of deposits that occur in important mining camps are discussed, and written abstracts are required from literature bearing on the subject. Considerable importance is attached to the accompanying laboratory work, which consists of mineralogic and petrologic study of rocks and ores from type deposits. A certain amount of time is devoted to a discussion of field methods, mine examinations, and reports.

Prerequisite: Geol 333. Required in Mines; senior year; first term; 3 credits; 2 recitations; 1 three-hour laboratory period. Fee $1.00. Professor Goodspeed.

Geol 432. **Problems in Economic Geology.** Problems in mining and field geology are worked out by the student in the laboratory and drafting room. Geologic, topographic, and mine maps are used, and many structural problems are studied, with special regard to their application to the development of mineral deposits.

Prerequisite: Geol 431. Elective; senior year; second term; 2 credits; 2 laboratory periods. Fee $1.00. Professor Goodspeed.

Geol 632. **Oil Geology.** A course in the geology of petroleum consisting of a study of the origin, geologic occurrence, geologic structure, and distribution of deposits of petroleum and natural gas, with special reference to the oil and gas fields of the United States, Mexico, and South America. Methods of exploring for oil, methods of mapping geologic structure, and methods of recording and filing geologic data bearing upon the geology of oil and gas, are studied.

Prerequisite: Geol 431. Elective; senior year; second term; 2 credits; 2 lectures or recitations; 1 laboratory period. Professor Goodspeed.

MINING ENGINEERING

The courses in Mining Engineering are intended to equip the student with a thorough knowledge of the basic principles of the science of mining, which are essential in development of mineral properties, design and construction of mine plants, and management of mines.

COURSES

Min 142. **Elements of Mining.** An introductory course designed to give the main features of mining, the aim being to summarize the phases that the student takes up in detail later in his work, to acquaint him early in his course with the life, the work, and the field of the profession.

Required in Mines; elective to others; freshman year; second term; 1 credit; 1 lecture. Dean Newton.

Min 143. **Explosives: Their Properties and Use.** This course offers an opportunity to students in Agriculture, Forestry, Civil Engineering, or others, to learn the principles of explosive action and to study the properties of explosives. Proper use of common high explosives; waste and danger of improper use; emphasis upon the various methods of using explosives as applied to farming, road building, etc.; actual field practice in loading and firing; blasting with the aid of electricity.

Prerequisite: General Chemistry. Elective; third term; 2 credits; 1 lecture each week; 4 three-hour laboratory periods during the term. Fee $1.00. Professor Goodspeed.

Min 243. **Excavation, Explosives, and Blasting.** Methods and cost of earth and rock excavation, tunneling, and shaft sinking; study of explosives used in mining and excavation work; methods of handling and storing explosives; methods of blasting.

Elective; sophomore year; third term; 3 credits; 3 lectures. Professor Goodspeed.

Min 343. **Principles of Mining.** Comprehensive view of the mining problem; prospecting; boring; drilling; explosives; rock breaking; methods of developing and working; transportation and drainage.

Required in Mines; junior year; third term; 3 credits; 3 recitations. Text: Young, Elements of Mining. Assistant Professor Wilcox.

Min 441. **Mining Engineering.** A study of the organization, operation, and economics of general types of mining operations.

Required in Mines; senior year; first term; 4 credits; 4 recitations. Dean Newton.

Min 442. **Mining Engineering.** A continuation of Min 441. Study of the complete operations at a few typical mines. The student is also required to choose some small mining property, the geologic conditions of which are given, and to draw up plans to develop the property into a producing mine, and to consider the treatment and disposal of the ore.

Prerequisite: Min 441. Required in Mines; second term; 4 credits; 2 recitations; 2 laboratory periods. Fee $1.00. Dean Newton.

Min 641. **Mine Economics and Mining Law.** Study of the costs of mining; methods of mine accounting and cost keeping; mining laws of the United States, Canada, and Mexico.

Elective; senior year; first term; 3 credits; 3 recitations. Assistant Professor Wilcox.

Min 642. **Mine and Power Equipment.** Study of surface and underground equipment for mines, including haulage systems, hoists, compressors, drills, pumps, etc.; discussion of the sources of power, water, hydroelectric, steam, gas, and compressed air; problems illustrating their application to mining methods.

Elective; senior year; second term; 3 credits; 3 recitations. Assistant Professor Wilcox.

Min 643. **Mine Plant Design.** The student designs and details plans and specifications for mine equipment to meet the requirements of a hypothetical mine.

Elective; senior year; third term; 2 credits; 2 three-hour laboratory periods. Fee $1.00. Assistant Professor Wilcox.

Min 353. **Mine Surveying.** Study of the methods of surveying as used on surface and underground in connection with mining operations; United States land subdivision and mining laws; claim surveys and locations; patent work; topographic surveys and maps; underground methods of traversing; stope measurement; connections; a field trip during the last two weeks of the term to some mine in the vicinity of the College.

Required in Mines; junior year; third term; 3 credits; 2 recitations; 1 laboratory period. Text: Peele, Mining Engineers Hand Books. Assistant Professor Wilcox.

METALLURGY

The aim of the various courses in Metallurgy is to give the student a broad and general knowledge of the methods of treating ores, metals, and other products of the mineral industry, including the processes of assaying, amalgamation, cyanidation; general milling methods, such as crushing, grinding, and concentration; and the smelting of ores for iron, copper, lead, and zinc, and the minor metals, and their refining.

COURSES

Met 163. **Elements of Metallurgy.** An introductory course in Metallurgy; various phases of the treatment of ores; use of fuels; the production of metals.

Required in Mines; elective to others; freshman year; third term; 1 credit; 1 lecture. Dean Newton.

Met 362. **Assaying.** The quantitative determination of the constituents of reagents; crushing, sampling and assaying of ores, fluxes, and general metallurgical products.

Required in Mines; junior year; second term; 5 credits; 1 recitation; 3 four-hour laboratory periods. Deposit: $15.00. Text: Fulton, Manual of Fire Assaying. Assistant Professor Wilcox.

Met 461. **Principles of Metallurgy.** Application of the laws of Chemistry and Physics to metals and alloys; study of fuels, refractory materials, metals and alloys, furnaces, and the principles of smelting.

Required in Mines; senior year; first term; 4 credits; 4 recitations. Text: Hofman, General Metallurgy. Dean Newton.

Met 462. **Metallurgy of Gold and Silver.** Study of the smelting, amalgamation, cyanidation, and other processes for the production of gold and silver from their ores.

Required in Mines; senior year; second term; 4 credits; 4 recitations. Dean Newton.

Met 463. **Metallurgy of Copper, Lead, and Zinc.** Study of the method of producing and refining; the economic conditions affecting the production of common non-ferrous metals.

Required in Mines; senior year; third term; 4 credits; 4 recitations. Dean Newton.

Met 661. **Metallurgy of the Minor Metals.** The metallurgy of mercury, tin, aluminum, nickel, arsenic, and antimony; study of the methods of production and the uses in the arts.

Elective; senior year; first term; 2 credits; 2 recitations. Dean Newton.

Met 662. **Metallurgical Design.** Study of plant flow sheets; designing of apparatus for metallurgical operations; working up of flow sheets for milling, smelting, and leaching operations.

Elective; senior year; second term; 2 credits; 2 laboratory periods. Fee $1.00. Dean Newton.

Met 663. **Electro-Metallurgy.** The principles, processes, and apparatus involved in using electrical energy for the smelting and refining of ores and metals.

Elective; senior year; third term; 2 credits; 2 recitations. Dean Newton.

Met 473. **Metallurgy or Iron.** Study of the smelting of iron from its ores; the production of cast iron and wrought iron and the general varieties of steel.

Required in Mines; senior year; third term; 3 credits; 3 recitations. Text: Bradley Stoughton, Metallurgy of Iron and Steel. Assistant Professor Wilcox.

Met 481, 482, 483. **Ore Dressing.** The principles of breaking, grinding, concentrating; general treatment of ores by various processes.

Required in Mines; senior year; three terms; 3 credits each term; 3 recitations. Texts: Richard, Textbook of Ore Dressing. Rickard and Ralston, Flotation. Dean Newton.

Met 492, 493. **Metallurgical Laboratory.** Laboratory testing in connection with Met 462, Metallurgy of Gold and Silver; Met 463, Metallurgy of Copper, Lead, and Zinc; and Met 481, 482, 483, Ore Dressing.

Required in Mines; senior year; second and third terms; 3 credits each term; 3 three-hour laboratory periods. Deposit $5.00 each term. Dean Newton and Assistant Professor Wilcox.

CERAMIC ENGINEERING*

The curriculum in Ceramic Engineering is designed to prepare young men to make intelligent search for suitable raw materials, to test them properly, and to aid in their economic exploitation and development. Work in distinctly ceramic subjects is confined to the last two years, and includes lectures and laboratory instruction and practice in the processes and methods of manufacture of ceramic wares, including the commoner clay products, pottery, and porcelain; and the compounding and application of glazes, enamels, cements, etc. Both the materials used and the finished articles are studied and tested. The physical and chemical principles on which the production and value of ceramic products are based are presented thoroughly, and the student is shown that successful manufacture depends upon a full knowledge and constant application of these principles. With the consent of the departments concerned students may be admitted to the ceramic courses from the other departments in the School of Mines and from the School of Engineering and Mechanic Arts.

Equipment. The Ceramic Engineering laboratory occupies a room 30 by 60 feet in the basement of the Mines Building. The equipment for work in Ceramic Engineering consists of a laboratory for Ceramic Chemistry, apparatus for making physical tests of clays and other ceramic materials; a complete mechanical outfit for the preparation of clays for the manufacture of brick, tile, terra-cotta, etc., and equipment for the compounding of bodies, glazes, and enamels for stone and iron-ware, and all of the higher grades of pottery and of porcelain products.

COURSES

Cer 302, 303. **Ceramic Chemistry.** Analysis of clays, glasses, glazes, and silicate minerals; chemical study of fire gases.

Required in Ceramics; junior year; second and third terms; 3 credits each term; 3 laboratory periods. Deposit $5.00 each term.

Cer 312, 313. **Ceramic Raw Materials.** Occurrence, properties, identification, and winning of clays and other ceramic materials.

Required in Ceramics; junior year; second and third terms; 3 credits each term; 2 recitations; 1 laboratory period. Deposit $1.00 each term.

* Not offered in 1919-1920.

Cer 411, 412. **Glasses, Glazes, and Enamels.** Classification, production, properties, and defects; methods of application to ceramic wares.

Required in Ceramics; senior year; first and second terms; 3 credits each term; 2 recitations; 1 laboratory period. Deposit $2.00 each term.

Cer 323. **Raw Materials Testing.** Continuation of the laboratory work of Cer 312 and 313. Lectures at intervals as required.

Prerequisites: Cer 312 and 313. Required in Ceramics; junior year; third term; 3 credits; 3 laboratory periods.

Cer 421, 422. **Manufacture of Clay Products.** Principles of the manufacture of clay wares, and the equipment used in drying and burning.

Required in Ceramics; senior year; first and second terms; 3 credits each term; 2 recitations; 1 laboratory period. Deposit $3.00 each term.

Cer 333. **Ceramic Calculations.** Calculations involved in the blending of raw materials for pottery bodies, glazes, cements, etc.; practical ceramic problems.

Required in Ceramics; junior year; third term; 3 credits; 3 recitations.

Cer 432. **Clay Products Laboratory.** Continuation of the laboratory work of Cer 421 and 422.

Required in Ceramics; senior year; second term; 2 credits; 2 laboratory periods. Deposit $3.00.

Cer 433. **Clay Products Laboratory.** Continuation of Cer 432.

Required in Ceramics; senior year; third term; 3 credits; 3 laboratory periods. Deposit $5.00.

Cer 443. **Ceramic Engineering Laboratory.** Continuation of the laboratory work of Cer 411, 412. Lectures at intervals as required.

Required in Ceramics; senior year; third term; 2 credits; 2 laboratory periods. Deposit $5.00.

Cer 452. **Limes and Cements.** Lime, cement, plaster, and other cementing materials, and sand-lime products. Production, properties, and uses.

Required in Ceramics; senior year; second term; 2 credits; 2 recitations.

Cer 453. **Limes and Cements.** Continuation of Cer 452.

Required in Ceramics; senior year; third term; 3 credits; 3 recitations.

Cer 463. **Field Work and Report.** Visits to cement, clay, and other related industrial plants; carefully written reports.

Required in Ceramics; senior year; third term; 1 credit; 1 laboratory period.

Cer 472, 473. **Thesis.** A careful study of some special ceramic problem.

Required in Ceramics; senior year; second and third terms; 3 credits each term; 3 laboratory periods. Deposit $5.00 each term.

SCHOOL OF PHARMACY

WILLIAM JASPER KERR, D.Sc., President of the College
ADOLPH ZIEFLE, Ph.C.,M.S., Dean of the School of Pharmacy
Professor of Pharmacy
VERA FUNK, Secretary to the Dean

HERSCHEL BRAIN McWILLIAMS, Ph.C.,B.S., Instructor in Materia Medica and Pharmacognosy
MERRILL OLIVER RAWSON, Ph.C.,B.S., Instructor in Pharmacy

The School of Pharmacy was established in 1898 by the Board of Regents of the College upon petition of the druggists of the State, to meet the growing demand for thorough practical and theoretical training in Pharmacy and related branches. From its inception it has grown steadily and has always had a place in the front rank of the profession.

Curricula. Three degree curricula are offered: a four-year curriculum leading to the degree of Bachelor of Science in Pharmacy; a three-year curriculum leading to the degree of Pharmaceutical Chemist; a two-year curriculum leading to the degree of Graduate in Pharmacy. Since the Pharmacy curricula contain all subjects required by medical schools for entrance, students can elect any of these curricula and complete their pre-medical work in two years. This same advantage is afforded students who contemplate entering the profession of dentistry. In addition to the above, students who have not completed a full four-year high school course may register in the School as special students, not candidates for a degree. These students have the same privileges in the election of courses as do the degree students, but more especially in preparation for State Pharmacy examinations. All special students should confer with the Dean regarding their credentials before registering.

Purpose of Training. Since the establishment of the School of Pharmacy in the College, consistent endeavor has been made to provide well-balanced courses that will fit students not only for practical drug-store work, but for a variety of positions in pharmaceutical, analytical, and medical chemistry. Students are trained not only in technique, power of observation, and the principles of Pharmacy, but also in resourcefulness, initiative, and individual responsibility.

Standard of Work. All work offered in the School meets the highest requirements of pharmaceutical instruction in this country. The School is a member of the American Conference of Pharmaceutical Faculties, and all of its courses are registered by the New York Board of Higher Education. The facilities for instructional work are good, and because of the broad training that students derive from laboratory work, this is made a special feature of the School. Diplomas as well as all work of students in this School will be recognized by all state boards of Pharmacy which require attendance in a school of Pharmacy as a prerequisite for registration.

Requirements of the Profession. For the practice of Pharmacy today high requirements must be met. Public sentiment has demanded enactment of stringent laws. It is now a necessity that a pharmacist have scientific training such as cannot be obtained by merely working in a drug store. College training is necessary. State boards of Pharmacy, recognizing the importance of college training as a means of insuring accurate preparation and dispensing of medicines, are requiring college training before the student is eligible to take the state examination. The Oregon Board of Pharmacy requires that, beginning January 1, 1920, all candidates for examination must have attended a recognized school of Pharmacy for one year. Beginning January 1, 1922, all applicants must be graduates in Pharmacy.

Demand for Graduates. The demand for educated pharmacists was never so great as it is today. The demand is for those having business capacity, industry, integrity, and a good pharmaceutical education. Because of the responsibility of the profession, in no line of work is expert knowledge more necessary than in Pharmacy. State and Federal pure food and drug laws make it now a necessity that a pharmacist be thoroughly familiar with all drugs and their preparation.

Opportunity for Graduates. Graduates in Pharmacy are capable of occupying a number of different kinds of positions because of the broad training they receive. In the degree curricula students receive intensive and varied training which fits them to be analytical chemists, prescription dispensers, manufacturing pharmacists and chemists, food and drug inspectors, traveling salesmen, bacteriologists, physicians' assistants, and experts in

other positions requiring a knowledge of pharmacy, chemistry, and medicine. There is no field which offers greater opportunities for women than Pharmacy. The work is clean, pleasant, and agreeable; and because of the neatness and accuracy necessary in the dispensing of drugs, women are peculiarly adapted to it.

State Pharmacy Examinations. Since all students in Pharmacy are required to pass the State Pharmacy examinations in order to become registered pharmacists, preparation for these examinations is a special feature of the work of the School. Aside from enabling the student to become a registered pharmacist, however, the aim of the School is to afford him an opportunity to obtain a thorough foundation in the principles of Pharmacy and Chemistry in order that he may successfully continue his studies after leaving college.

Equipment. The School of Pharmacy has its lecture rooms and laboratories in Science Hall, a building which conveniently meets the need for space, light, and ventilation.

All laboratories and lecture rooms are splendidly equipped with all apparatus necessary for practical pharmaceutical instruction. Students have individual desks which are supplied with the apparatus necessary for the specific course. Students can borrow as much additional apparatus as they may need from the pharmacy stock room. In order to save as much of the students' time as possible and make possible higher efficiency in laboratory courses, all stock is placed on side shelves. By this means students can 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. In addition to brushes, pens, paints and other apparatus used in show-card work, each desk is provided with an air-brush outfit useful in shading of letters and drawings.

Two-year Curriculum. This curriculum leads to the degree of Graduate in Pharmacy (Ph. G.), and comprises the more practical courses in Pharmacy. It prepares directly for drug-store and dispensing practice and provides a groundwork in analytical chemistry necessary for the practice of Pharmacy. The plan of study appeals especially to young men and women who desire to prepare for state Pharmacy examinations. The curriculum meets all of the requirements of the Oregon Pharmacy Law as well as those of other states requiring the attendance in a school of Pharmacy before a student can take the state examinations. If they so desire, students completing this curriculum may continue with the work of either the three-year or the four-year curriculum.

Three-year Curriculum. This curriculum leads to the degree of Pharmaceutical Chemist (Ph. C.) and is offered to meet the demand of many students desiring to prepare for special lines of work, such as commercial chemists, food and drug inspectors and analysts, clinical chemists for physicians. Pre-medical students find this curriculum the most satisfactory to elect, as they can complete pre-medical subjects as well as all professional Pharmacy subjects in three years. They are then eligible to take the examinations of the Oregon State Board of Pharmacy, and if successful, they can practice in any of forty-three states without further examination.

All work of the two-year curriculum is required in the three-year curriculum unless other arrangements are made. The courses of the third year are elective and are designed to qualify students for special lines of work. Any selection of courses, however, can only be made after consultation with the Dean.

Four-year Curriculum. This curriculum is academic and professional in nature and is therefore the most satisfactory one to elect. Upon completion of the required subjects, students are granted the degree of Bachelor of Science in Pharmacy (B. S.). This curriculum includes all professional work of the two-year and three-year curricula as well as all pre-medical subjects. Graduates of this curriculum are prepared for any position requiring

a knowledge of drugs and chemicals. Aside from a thorough training in Pharmacy and Chemistry, students in this curriculum are also instructed in Bacteriology, Phyiology and Zoology, Physics, English, Modern Language, Pharmaceutical Botany, Business Law, and Military Science and Tactics.

Special students. The facilities of the School of Pharmacy are open to those drug clerks and students who cannot meet the entrance requirements of the above curricula leading to degrees. Special students have the same privileges as students in degree curricula, and are subject to the same College regulations as other undergraduate students. Special students may not be candidates for a degree until they have fulfilled all College requirements, including those for admission to freshman standing.

TWO-YEAR CURRICULUM IN PHARMACY

First Year

	Term		
	1st	2d	3d
General Chemistry (Chem 104, 105)	5	5	
Qualitative Analysis (Chem 233)			5
Pharmaceutical Latin (Phar 220)	3		
Inorganic Pharmacy (Phar 353)			3
Pharmacognosy (Phar 351, 352)	2	4	
Theoretical Pharmacy (Phar 311)	4		
Practical Pharmacy (Phar 333)		3	
Pharmaceutical Preparation (Phar 343)			3
Pharmaceutical Calculations (Phar 321)			2
English (Eng 101, 102, 103)	3	3	3
Gymnasium (PhEd 111, 112, 113)	½	½	½
Military Science and Tactics	1	1	1
	18½	16½	17½

Second Year

	Term 1st	2d	3d
Organic Chemistry (Chem 226, 227)	5	5	
Materia Medica and Toxicology (Phar 451, 452, 453)	3	3	3
U. S. Pharmacopoeia and National Formulary (Phar 431, 432, 433)	3	3	3
Prescription Lectures (Phar 461)	4		
Prescription Incompatibilities (Phar 462)		4	
Prescription Compounding (Phar 463)			4
Manufacturing Pharmacy (Phar 441)	3		
Alkaloidal Testing (Chem 371)		3	
Drug Assaying (Chem 374)			3
Gymnasium (PhEd 211, 212, 213)	½	½	½
Military Science and Tactics	1	1	1
Electives			3
	19½	19½	17½

THREE-YEAR CURRICULUM IN PHARMACY

As the third year's work of this curriculum is elective and the work of the two-year curriculum, or its equivalent, is prerequisite, no plan of study has been prepared. After first consulting with the Dean and the department concerned, students may elect courses in Chemistry, Bacteriology, Commerce, Botany, Zoology, and Physiology, English, Modern Language, Physics, or in any other school or department of the College which offers work directly preparing for special lines of work. All credits earned in this curriculum may be applied toward graduation in the four-year curriculum, provided the credits represent work equivalent in character to courses in the four-year curriculum.

FOUR-YEAR CURRICULUM IN PHARMACY

Freshmen Year *

	Term 1st	2d	3d
English (Eng 101, 102, 103)	3	3	3
General Chemistry (Chem 104, 105)	5	5	
Qualitative Analysis (Chem 233)			5
General Zoology (Zool 101, 102, 103)	3	3	3
Pharmaceutical Botany (Bot 107, 108, 109)	3	3	3
Elementary Pharmacy (Phar 111, 112, 113)	1	1	1
Gymnasium for Men (PhEdM 111, 112, 113)	(½)	(½)	(½)
Military Science and Tactics	(1)	(1)	(1)
Gymnasium for Women (Ph EdW 111, 112, 113)	(1)	(1)	(1)
Hygiene for Women (PhEdW 112)	(1)		
	16½	16½	16½

Sophomore Year

Organic Chemistry (Chem 226, 227)	5	5	
Quantitative Analysis (Chem 244)			5
Zoology (Zool 211, 212, 213)	3	3	3
Pharmaceutical Latin (Phar 220)	3		
Modern Language	3	3	3
Introduction to Economics (ES 361)		3	
Business Law (PS 163)			3
Gymnasium for Men (PhEd M 211, 212, 213)	(½)	(½)	(½)
Gymnasium for Women (PhEdW 211, 212, 213)	(1)	(1)	(1)
Military Science and Tactics	(1)	(1)	(1)
	15½	15½	15½

*As one year of college Physics is required by all medical schools for entrance, it is suggested that all students pursuing this curriculum arrange to elect Physics during their freshman year.

Junior Year

	Term 1st	2d	3d
Theoretical Pharmacy (Phar 311)	4		
Bacteriology (Bact 201, 332, 333)	3	3	3
Modern Language	3	3	3
Practical Pharmacy (Phar 333)			3
Pharmaceutical Preparations (Phar 343)			3
Pharmacognosy (Phar 351, 352)	2	4	
Inorganic Pharmacy (Phar 353)			3
Alkaloidal Testing (Chem 371)	3		
Drug Assaying (Chem 374)		3	
Pharmaceutical Calculations (Phar 321)		2	
Military Science and Tactics	2	2	2
	17	17	17

Senior Year

Mat. Medica and Toxicology (Phar 451, 452, 453)	3	3	3
Pharmacopoeia and National Formulary (Phar 431, 432, 433)	3	3	3
Food and Drug Analysis (Chem 377)		5	
Prescription Lectures (Phar 461)	4		
Prescription Incompatabilities (Phar 462)		4	
Prescription Compounding (Phar 463)			4
Manufacturing Pharmacy (Phar 441)	3		
Physiological Chemistry (Chem 461)			5
Business Organization (BA 331)	3		
Electives	1	2	2
	17	17	17

COURSES

Phar 111. **Elementary Pharmacy.** The purpose of this course is to acquaint entering students of the four-year curriculum with the general scope and purpose of the work they have chosen as a profession. The course deals with the history of Pharmacy and its development, standard pharmaceutical literature, and other elementary phases of Pharmacy.

Required in four-year curriculum in Pharmacy; freshman year; first term; 1 credit; 1 lecture. Dean Ziefle.

Phar 112. **Elementary Pharmacy.** Continuation of Phar 111. Nomenclature of the U. S. Pharmacopoeia; drugs; weights and measures; elementary pharmaceutical operations.

Required in four-year curriculum in Pharmacy; freshman year; second term; 1 credit; 1 lecture. Dean Ziefle.

Phar 113. **Elementary Pharmacy.** The general processes of drug manufacture considered with the view of familiarizing the student with all pharmaceutical apparatus and methods.

Required in four-year curriculum in Pharmacy; freshman year; third term; 1 credit; 1 lecture. Text: Arny, Principles of Pharmacy. Dean Ziefle.

Phar 311. **Theoretical Pharmacy.** Systematic study of the processes in operative pharmacy; study of standard pharmaceutical books, weights and measures, heat, distillation, solution, extraction in its various forms, and other processes used in the manufacture of galenical preparations.

Required in Pharmacy; junior year; first term; 4 credits; 2 lectures; 2 recitations. Text: Arny, Principles of Pharmacy. Dean Ziefle.

Phar 220. **Pharmaceutical Latin.** Properly trained pharmacists need knowledge of Latin etymology and construction in order to understand the use and terminology of pharmaceutical and medicinal trems. Emphasis is placed upon pronunciation, declension, English translation, comparison, abbreviations, and vocabularies.

Required in Pharmacy; sophomore year; first term; 3 credits; 3 recitations. Text: Sturmer, Pharmaceutical Latin. Mr. McWilliams.

Phar 221. **Commercial Pharmacy.** The special feature of this course is sign-card painting. Simple lettering is the basis of the work for the first part of the course; later simple signs are designed.

Elective in Pharmacy; any term; 2 credits; 2 three-hour laboratory periods. Fee $3.50.

Phar 222. **Commercial Pharmacy.** A continuation of Phar 221 with the added feature of designing sign-cards in colors and painting on cloth, canvas, and glass.

Elective in Pharmacy; any term; 2 credits; 2 three-hour laboratory periods. Fee $3.50.

Phar 223. **Commercial Pharmacy.** A continuation of Phar 222 with work in shading with the air brush and other methods of the art of display.

Elective in Pharmacy; any term; 2 credits; 2 three-hour laboratory periods. Fee $3.50.

Phar 321. **Pharmaceutical Calculations.** Study of calculations common to pharmacy; weights and measures; percentage solutions; allegation; specific gravity; thermometers.

Prerequisites: Phar 311; Chem 104, 105. Required in Pharmacy; junior year; third term; 2 credits; 1 lecture; 1 recitation. Text: Stevens, Pharmaceutical Arithmetic. Dean Ziefle.

Phar 333. **Practical Pharmacy.** Natural products used in pharmacy explained and demonstrated; study of the various types of galenical preparations as outlined in Part II of Arny's Principles of Pharmacy.

Prerequisites: Phar 311; Chem 104, 105. Required in Pharmacy; junior year; second term; 3 credits; 2 lectures; 1 recitation. Texts: Arny, Principles of Pharmacy. Ruddiman, Why's in Pharmacy. Dean Ziefle.

Phar 431. **United States Pharmacopoeia and National Formulary.** Every substance listed in the U. S. Pharmacoepoeia and National Formulary as well as many unofficial drugs and preparations in the dispensatories are studied. Emphasis is placed on composition, uses, methods of manufacture, reasons for each step in the process of manufacture, and all other important data concerning the drug.

Prerequisites: Phar 333, 343; Chem 104, 105, 233. Senior year; first term; 3 credits; 1 lecture; 2 recitations. Texts: U. S. Pharmacopoeia. National Formulary. Ruddiman, Why's in Pharmacy. Dean Ziefle.

Phar 432. **United States Pharmacoepoeia and National Formulary.** A continuation of Phar 431, with frequent reports on all pharmaceutical literature especially as regards the newer remedies proposed since the last revision of the U. S. P. and N. F.

Prerequisites: Phar 431; Chem 104, 105, 233. Senior year; second term; 3 credits; 1 lecture; 2 recitations. Texts: U. S. P. and N. F. Dean Ziefle.

Phar 433. **United States Pharmacopoeia and National Formulary.** A continuation of Phar 115 with the added feature of preparing students for the State Pharmacy examinations. In addition to a complete review of all pharmacy subjects and the study of typical state board questions, students are grounded in pharmaceutical legislation, identification of drugs and preparations, as well as in other subjects which will prepare students not only for the state examinations but for efficient service in practical drug store work.

Prerequisite: Phar 432. Senior year; third term; 3 credits; 1 lecture; 2 recitations. Texts: U. S. P. and N. F. Dean Ziefle.

Phar 343. **Pharmaceutical Preparations.** Laboratory work in the preparation of simple galenicals, such as waters, pills, emulsions, and extracts. All work is under supervision of instructors, and the finished products are carefully inspected in order to prevent inaccuracies and to insure neatness. Frequent identification examinations of preparations are held to familiarize students with the characteristics of the drugs they use.

Prerequisites: Phar 333; Chem 104, 105. Required in Pharmacy; junior year; third term; 3 credits; 3 three-hour laboratory periods. Texts: U. S. Pharmacopoeia. National Formulary. Fee $7.00. Deposit $1.00. Mr. McWilliams.

Phar 351. **Pharmacognosy.** Study of animal and vegetable drugs with reference to their habitat, botanical classification, official titles, synonyms, constituents, uses, identification, and standardization.

Prerequisites or parallel: Phar 311; Chem 104, 105, 233. Required in Pharmacy; junior year; first term; 2 credits; 1 lecture; 1 recitation. Texts: Culberth, Materia Medica. Lily, Organic Drugs. Fee $1.50. Mr. McWilliams.

Phar 352. **Pharmacognosy.** A continuation of Phar 130.

Required in Pharmacy; junior year; second term; 4 credits; 2 lectures; 2 recitations. Texts: Culberth, Materia Medica. Lily, Organic Drugs. Fee $1.50.

Phar 353. **Inorganic Pharmacy.** Inorganic chemicals and their preparations used in medicine. Part III of Arny's Principles of Pharmacy is used as a lecture outline for the course. In the laboratory students make representative samples of certain types of chemicals, testing for such impurities as arsenic, lead, antimony,

and study authentic samples of inorganic drugs for identification purposes.

Prerequisites: Phar 333, 343; Chem 104, 105. Required in Pharmacy; junior year; third term; 3 credits; 1 lecture; 1 recitation; 1 three-hour laboratory period. Text: Arny, Principles of Pharmacy. Fee $4.00. Mr. McWilliams.

Phar 441. **Manufacturing Pharmacy.** This course is a continuation of the course in Pharmaceutical Preparations and deals with the manufacture of the more difficult pharmaceuticals involving complex chemical reactions. Students assay their own products when practicable.

Prerequisites: Phar 333, 343; Chem 104, 105, 233. Required; senior year; first term; 3 credits; 3 three-hour laboratory periods. Texts: U. S. P. and N. F. Fee $7.00. Deposit $1.00. Mr. McWilliams.

Phar 451. **Materia Medica.** Study of the action and uses of chemicals, drugs, and their preparations, in the human organism, in health and disease; drugs classified into groups according to their action; the dose of medicines; toxicology from the point of view of action of poisons, their absorption, elimination, identification, and antidotes.

Prerequisites: Phar 343, 352; Chem 104, 105, 233. Required in Pharmacy; senior year; first term; 3 credits; 1 lecture; 2 recitations. Text: Cushny, Pharmacology. Mr. McWilliams.

Phar 452. **Materia Medica.** A continuation of Phar 451.

Prerequisite: Phar 451. Required in Pharmacy; senior year; second term; 3 credits; 1 lecture; 2 recitations. Text: Cushny, Pharmacology. Mr. McWilliams.

Phar 453. **Materia Medica.** A continuation of Phar 141 with preparation for state board examinations in this subject. State and national laws receive special attention.

Prerequisite: Phar 452. Required in Pharmacy; senior year; third term; 3 credits; 1 lecture; 2 recitations. Text: Cushny, Pharmacology. Mr. McWilliams.

Phar 461. **Prescription Lectures.** Theory of prescription compounding practically as outlined in Scoville's Art of Compounding. The aim is to give such theoretical instruction as will enable the

student to devise the best method of compounding drugs. Special attention is given to the "newer remedies" and such proprietaries as are used extensively.

Prerequisites: Phar 343, 352, 353; Chem 104, 105, 233. Required in Pharmacy; senior year; first term; 4 credits; 2 lectures; 2 recitations. Text: Scoville, Art of Compounding. Dean Ziefle.

Phar 462. **Prescription Incompatibilities.** Several hundred incompatible prescriptions studied from the point of view of the cause of the incompatibility as well as the best method of overcoming the same; current pharmaceutical and medical literature abstracted in order that students may become familiar with the reactions of the newer remedies.

Prerequisite: Phar 461. Required in Pharmacy; senior year; second term; 4 credits; 2 lectures; 2 recitations. Text: Ruddiman, Incompatibilities in Prescriptions. Dean Ziefle.

Phar 463. **Prescription Compounding.** In this course the students are expected to apply the principles learned in Phar 461 to the actual compounding of prescriptions. Over one hundred prescriptions are compounded, representing all types generally met with in actual practice. 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.

Prerequisite: Phar 462. Required in Pharmacy; senior year; third term; 3 credits; 3 three-hour laboratory periods. Text: Scoville, Art of Compounding. Fee $7.00. Deposit $1.00. Dean Ziefle.

SCHOOL OF VOCATIONAL EDUCATION

WILLIAM JASPER KERR, D. Sc., President of the College
EDWIN DeVORE RESSLER, A. M., Dean of the School of Vocational Education; Professor of Education; Director of the Summer School
CLYTIE MAY WORKINGER, Secretary to the Dean

HARRY PERCY BARROWS, Ph. D., Professor of Agricultural Education
JESSE FRANKLIN BRUMBAUGH, A. M., LL. B., Professor of Psychology
JOHN CORCORAN, B. S., Assistant Professor of Commercial Education
HATTY DAHLBERG, M. S., Associate Professor of Home Economics Education
BERTHA DAVIS, M. S., Associate Professor of Home Economics Education
EARL DeWITT DOXSEE, B. S., Instructor and Critic Teacher
LURA AMELIA KEISER, B. S., Critic Teacher, Home Economics Education
AMBROSE REUBEN NICHOLS, B. S., Critic Teacher, Industrial Education
FRANK HENRY SHEPHERD, A. M., Professor of Industrial Education

The chief function of the School of Vocational Education is to train teachers of the following vocations: Agriculture, Commerce, Home Economics, and the Trades and Industries. The School also offers opportunities for all teachers and students in the College to secure professional improvement with regard to teaching and related lines of service, such as extension work.

There is a demand at this time for vocational teachers who are able to meet the standards set by the State Board for Vocational Education in accordance with the requirements of the Smith-Hughes Act. Teachers meeting these requirements, and securing positions under direction of the State Board, receive one-half their salaries from Federal and State funds. The School of Vocational Education has been designated by the Board to train such teachers.

Inasmuch as training in the chosen technical field should constitute the major portion of an undergraduate course of study, students register and take their degrees in the school devoted to the subject which they will teach. Prospective teachers of Agriculture thus pursue the curriculum of the School of Agriculture, with a minor in Agricultural Education; similarly prospective teachers of Home Economics, Commerce, or Manual Training register in the respective schools of Home Economics, Commerce, or

Engineering, carrying a corresponding minor in the School of Vocational Education.

The department of Industrial Education makes provision for giving further professional training to teachers in service and pedagogical training to men and women who already have technical knowledge and skill in a particular trade and desire training in teaching in that field. The College offers special opportunities to graduates of normal schools and schools of education with teaching experience for technical training in some line of vocational education or for special training in teaching and supervising vocational subjects.

Students are advised to consider carefully the selection of teaching as a vocation. Thorough scholarship and mastery of the mother tongue are fundamental essentials for success in the vocation of teaching. Personality, character, and professional aptitude are demanded of the teacher. Positions can not be guaranteed to graduates, and only capable candidates will be recommended for teaching positions.

The Oregon School Law grants a high-school teaching certificate to graduates who have taken fifteen semester credits, or twenty-three term credits, in Education. Students preparing as vocational teachers under the Smith-Hughes Act should become familiar with the State requirements for teachers of the particular vocation they are intending to teach.

Equipment. The technical courses of the School of Vocational Education are given in the schools of Agriculture, Commerce, Engineering, and Home Economics, making available all their equipment to the students and instructors in the School of Vocational Education. The instructors in the professional courses in Education also use this equipment. For the courses in practice teaching, there is available in addition the equipment of the Corvallis public schools through a joint arrangement between the Corvallis Board of Education and the Board of Regents of the College.

EDUCATION

This department gives general courses in Education upon which courses in special methods are based. The courses are open to all students prepared to take them.

COURSES

Ed 302. **Introduction to Education.** Brief discussion of the meaning, function, and scope of education; organization and function of each division of the American system; school and class management; general method; all with particular reference to the vocational teacher.

Required; junior year; second or third term; 2 credits; 2 recitations. Dean Ressler.

Ed 313. **Principles of Teaching.** Application of the laws of psychology to teaching; type lessons, lesson plans, supervised study, measuring results; application of general principles to the teaching of vocational subjects.

Elective; junior year; third term; 2 credits; 2 recitations. Dean Ressler.

Ed 323. **Vocational Education.** Arranged to meet the needs of those preparing to teach any phase of vocational education. History and function of vocational education; development in the United States; requirements of Federal-aided schools and departments under the Smith-Hughes Act.

Required; junior year (third term) or senior year (first or second term); 2 credits; 2 recitations. Professor Barrows.

Ed 431. **Vocational Guidance.** An investigation of the means and methods of assisting pupils of upper grammar grades and high school in studying the problems of their future vocations; studies of occupations with essential qualifications for success in leading types; value of "life career" motive in education; survey of state and local resources as guides to choice, etc.

Elective; junior or senior year; first term; 2 credits; 2 recitations. Professor Shepherd.

Ed 341. **History of Education.** A general review of the growth and development of education and its relation to the civilization of the times; particular attention given to the rise of

industrial education in Europe and America, and its place in the social and political life of the country.

Elective; sophomore or junior year; first term; 3 credits; 3 recitations. Professor Brumbaugh.

Ed 452. **School Administration.** A discussion and analysis of the American system of education, with an interpretation of the purpose and spirit of each division; problems of administration and teaching; correlation of the vocational branches with other subjects in the curriculum.

Elective; advanced or graduate students; second term; 2 credits; 2 recitations. Dean Ressler.

Ed 461. **School Hygiene.** A course in the health provisions requisite for the hygienic conduct of education. Oregon laws, regulations of State Board of Health, and other State and local authorities explained in detail.

Elective; advanced or graduate students; first term; 2 credits; 2 recitations.

Ed 491, 492, 493. **Investigation.** Advanced or graduate students qualified by previous training or experience may register for extended investigation of some specific problem in vocational education. These studies are assigned and outlined by the instructor and stated reports are made from time to time by the student.

Elective; advanced or graduate students; first term; credits to be arranged.

PSYCHOLOGY

This department gives the courses in Psychology upon which the studies in education are built and such other courses as directly affect human behavior. All courses are elective to students prepared to take them.

Psy 301. **Elementary Psychology.** A preparatory course in the fundamentals of mental life from the functional viewpoint; emphasis upon the application of psychical laws to the ordinary affairs of life.

Required; junior year; any term; 3 credits; 3 lectures.

Psy 312. **Vocational Psychology.** Application of psychological laws to the active pursuits of life; the field of habit in relation to skill and economy; perception in relation to accuracy in space discrimination; color, weight, shape, and tactile sensations; motor response in relation to stimulation, coordination, and inhibition; memory, suggestion, and imitation in relation to business pursuits; the psychology of commerce as it develops in the relation of man to man, of trust and faith in human affairs, modes of activity, etc.

Required for prospective Smith-Hughes teachers; junior or senior year; second term; 3 credits; 3 lectures.

Psy 322. **Educational Psychology.** Follows Psy 301. Principles and laws of mental life and development as applied to the teaching process; psychological value of the various methods and paraphernalia of school life.

Required; junior year; any term; 3 credits; 3 lectures.

Psy 433. **The Child Mind.** Consideration of the physical and mental development of the child in the various stages; aspects and inter-relations, hygienic and moral sides receiving special attention.

Prerequisite: Psy 301. Elective; junior or senior year; third term; 2 credits; 2 lectures.

Psy 473. **Principles of Education.** This course expounds the general problem of education and the merits and demerits of the various theories of education as they have succeeded each other, together with the numerous principles which have sprung from such doctrines and the modern reinterpretations of aims and practices connected therewith.

Elective; junior or senior year; third term; 2 credits; 2 lectures.

Eth 482. **Ethics.** Meaning of our moral conceptions and principles; why they are binding; whence they are derived; a consideration of every-day customs and practices in the light of these principles; study of professional codes.

Elective; junior or senior year; second term; 3 credits; 3 lectures.

AGRICULTURAL EDUCATION

The function of this department is to train men and women as teachers and supervisors of Agriculture in elementary and secondary schools, and to develop leadership in rural life and education. Special attention is given the training of directors, supervisors, and teachers of Vocational Agriculture as provided for by the Federal law for vocational education known as the Smith-Hughes Act.

For the prescribed courses in the freshman and sophomore years consult pages 78-80. For graduation in Agriculture with a minor in Agricultural Education, at least fifty percent of a student's credits should be in agricultural and related science subjects, including Farm Mechanics, Animal Husbandry, Soils and Crops, Horticulture, Farm Management. Not less than 23 term credits shall be in Education, including Educational Psychology, Introduction to Education, Vocational Education, Secondary Education in Agriculture, and Practice Teaching. All subjects in the junior and senior years must be selected with the counsel of the professor of Agricultural Education.

COURSES

AgEd 401, 402. **Secondary Education in Agriculture.** Aims, materials, and methods relating to the teaching of vocational agriculture in the secondary school.

Prerequisites: Phys 322, Ed 302. Required in Agricultural Education; senior year; first and second terms; 3 credits each term; 2 recitations; ½-hour laboratory period. Professor Barrows.

AgEd 412, 413. **Practice Teaching in Secondary Agriculture.**

Prerequisites: AgEd 401, 402. Required in Agricultural Education; senior year; second and third terms; 3 credits each term; 3 double periods. Mr. Doxsee.

AgEd 421, 422. **Elementary Education in Agriculture.** Aims, materials, and methods of teaching and supervising prevocational agriculture and elementary science in the upper elementary grades or junior high school.

Elective; junior or senior year; first and second terms; 3 credits each term; 2 recitations; ½-hour laboratory period.

AgEd 431. **Rural Education.** The farm home; the rural school; the country church; other educational agencies and resources of the rural community.

Elective; junior or senior year; first or second term; 3 credits; 3 recitations.

AgEd 482, 483. **Seminar in Agricultural Education.** A discussion of special problems in the teaching of agriculture and in the administration of agricultural education.

Required of graduate students and elective for seniors in Agricultural Education; second and third terms; time and credits to be arranged.

COMMERCIAL EDUCATION

The function of this department is to give professional training to prospective teachers of commercial subjects. Although the special courses now outlined are limited, opportunity will be afforded advanced students in Commerce and other qualified students to work on special problems relating to teaching in this field.

COURSES

CEd 451. **Secondary Education in Commerce.** Principles of education as applied to the teaching of shorthand, typewriting, business English, and bookkeeping in high schools; rapid review of subject matter with model lessons in each subject; lectures covering aims, materials, methods of presentation, organization of courses, and arrangement of curriculum.

Prerequisites: OT 203; BA 103; Psy 312; Ed 302. Required of students preparing to teach stenographic subjects; junior year (third term) or senior year (first term); 3 credits; 3 lectures.

CEd 452. **Secondary Education in Commerce.** Same as CEd 451, with special methods in teaching Accounting, Business Law, Economics, and Commercial Geography.

Prerequisites: BA 203; PS 202; ES 203; Psy 302, 312. Required of students preparing to teach accounting subjects; senior year; first or second term; 3 credits; 3 lectures.

CEd 461. **Practice Teaching in Commerce.** Facilities are afforded students in Commercial Education to secure experience in teaching classes in stenographic subjects.

Prerequisite: CEd 451. Elective; senior year; any term; 5 credits; 1 lecture; 5 double periods.

CEd 462. **Practice Teaching in Commerce.** Same as CEd 461, with practice teaching in subjects of accounting group.

Prerequisite: CEd 452. Elective; senior year; any term; 5 credits; 1 lecture; 5 double periods.

HOME ECONOMICS EDUCATION

The function of this department is to give professional training to prospective teachers and extension workers in Home Economics.

(For the four-year curricula leading to a degree in Home Economics see pages 249-254.)

COURSES

HEEd 303. **Secondary Education in Home Economics.** Study of the organization of a Home Economics department in a high school; emphasis upon the course of study and methods of conducting the work.

Prerequisite: Psy 301. Required of all students preparing to teach Home Economics; junior year (third term) or senior year (first or second term); 4 credits; 4 recitations. Associate Professor Dahlberg.

HEEd 421. **Practice Teaching in Home Economics.** Observation and teaching under supervision. Teaching field includes grades and high school in city, small town, and rural district. Cadet or apprentice positions provide additional experience.

Prerequisite: HEEd 303. Required of all students preparing to teach Home Economics; senior year; any term; 5 credits; 1 recitation; 5 double periods. Associate Professor Dahlberg and Miss Keiser.

INDUSTRIAL EDUCATION

This department gives professional training to teachers of the trades and industries, Manual Training, and Industrial Arts. Although the College does not give technical training for all the trades and industries, this department makes provision for giving further professional training to teachers in service and pedagogical training to men and women who have technical knowledge and skill in particular trades which they propose to teach. Courses are given in Portland as well as in Corvallis. Those who are contemplating training for teaching the trades and industries should make inquiry concerning the particular line in which they may be interested. The institution is prepared at the present time to give training in the following trades: plumbing, foundry work, blacksmithing, carpentry, cabinetmaking, and machine-shop practice.

COURSES

IEd 303. **Special Methods in Trades and Industries.** The organization, administration, and teaching of industrial subjects to conform to the requirements of the Smith-Hughes Act; investigation into the values of different elements of selected trades or industries for the purpose of selecting a well-balanced course of study; lectures, readings, discussions, and written reports.

Prerequisites: Psy 302, 312. Required of all students preparing to teach a trade or industry; junior year (third term) or senior year (first term); 4 credits; 4 recitations. Professor Shepherd.

IEd 421. **Practice Teaching in Trades and Industries.** The student is required to arrange and submit definite plans and outlines of the subject, job, or lesson to be taught. Reports to the director, supervisor, or critic teacher are made for the purpose of perfecting the student teacher in the technique of the trade of teaching.

Prerequisite: IEd 303. Required of all students preparing to teach a trade or industry; senior year; first or second term; 5 credits; 1 recitation; 5 double periods. Professor Shepherd and Mr. Nichols.

IEd 343. **Special Methods in Manual Training.** A careful, detailed study of the public-school course of study in Manual Training in its various relations; model courses of study for both elementary and secondary grades outlined; plans for desirable equipment for shop and class room.

Prerequisites: Psy 302, 312. Required in Industrial Arts; junior year (third term) or senior year (first term); 4 credits; 4 recitations. Mr. Nichols.

IEd 382. **Theory and Practice of Elementary Manual Arts.** For supervisors of industrial arts in the lower grades. Investigation of the present trend of the manual arts movement; arrangement of a suggestive course of study; plan of equipment; ordering of supplies, etc.; lectures, assigned readings, reports, and practical shop work.

Required in Industrial Arts; elective to others; junior or senior year; second term; 3 credits; 2 recitations; 1 two-hour laboratory period. Mr. Nichols.

IEd 461. **Practice Teaching in Manual Training.** Required of all seniors in Industrial Arts.

Prerequisite: IEd 343. Required in Industrial Arts; senior year; any term; 5 credits; 1 recitation; 5 double periods. Mr. Nichols.

SERVICE DEPARTMENTS

WILLIAM JASPER KERR, D.Sc., President of the College

M. ELLWOOD SMITH, Ph.D., Dean of the Service Departments

FREDERICK J. ALLEN, B.S., Instructor in Chemistry

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

WINFRED McKENZIE ATWOOD, Ph.D., Associate Professor of Plant Physiology

LOUIS BACH, M.A., Professor of Modern Languages

LOREN BURTON BALDWIN, M.A., Assistant Professor of English

HOWARD PHILLIPS BARSS, A.B.,M.S., Professor of Botany and Plant Pathology; Chief in Botany and Plant Pathology, Experiment Station

HARRY LYNDEN BEARD, B.S., Assistant Professor of Mathematics; Director of Cadet Band

EDWARD BENJAMIN BEATY, B.S.,M.A., Associate Professor of Mathematics

*THEODORE DAY BECKWITH, M.S., Professor of Bacteriology; Chief in Bacteriology, Experiment Station

FREDERICK BERCHTOLD, A.M., Professor of English Language and Literature

WILLIAM ALFRED BEVAN, B.S., Assistant Professor of Physics

BURR BLACK, B.S., Assistant Entomologist

IDA BURNETT CALLAHAN, B.S., Associate Professor of English Language and Literature

WILLARD JOSEPH CHAMBERLIN, B.S., Instructor in Entomology; Assistant in Entomology, Experiment Station

ASA CHANDLER, Ph.D., Assistant Professor of Zoology and Physiology

GODFREY VERNON COPSON, M.S., Associate Professor of Bacteriology; Acting Head of the Department of Bacteriology

EDNA MAY FLARIDA, Instructor in Art

JOHN FULTON, M.S., Professor of General Chemistry; Director of Chemical Laboratories

BENTLEY BALL FULTON, M.S., Assistant Professor of Entomology

EARL GILBERT, M.S., Instructor in Chemistry

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

W. V. Halverson, B.S., Instructor in Bacteriology

JOHN FREDERICK GROSS HICKS, Ph.D., Assistant Professor of General Chemistry

WILLIAM HODGE, M.A., Assistant Professor of Organic Chemistry

JOHN B. HORNER, A.M., Litt.D., Professor of History

---

*On leave of absence.

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

JOHN SHIRLEY JONES, M.S.A., Professor of Agricultural Chemistry; Station Chemist

HAROLD KELLY, B.S., Instructor in Agricultural Chemistry

FRANK HEIDTMAN LATHROP, B.S.,A.B., Instructor in Entomology; Assistant Entomologist, Experiment Station

WILLIAM EVANS LAWRENCE, B.S., Assistant Professor of Botany

LESTER LOVETT, B.S., Professor of Entomology; Chief in Entomology, Experiment Station

GERTRUDE EWING McELFISH, A.B., Instructor in English

MARION BERTICE McKAY, M.S., Associate Plant Pathologist. Experiment Station

ARDIS THOMAS MONK, B.S., Instructor in Physics

CHARLES ELMER OWENS, A.M., Associate Professor of Plant Pathology; in charge of Cereal Investigation, U. S. Department of Agriculture

FARLEY DOTY McLOUTH, B.S., Professor of Art

SIGURD HARLAN PETERSON, B.A., Assistant Professor of English

LAWRENCE EUGENE ROBINSON, B.S., Assistant Professor of Rural Architecture

WILLIAM ANDERSON SMART, B.S.A., Crop Pest Assistant

VALDA EVELINE SMITH, A.B., Instructor in Chemistry

GEORGE FRANCIS SYKES, A.M., Professor of Zoology

NICHOLAS TARTAR, B.S., Assistant Professor of Mathematics

E. E. WILLIAMS, Instructor in Modern Languages

JOHN ALBERT VAN GROOS, M.S., Instructor in Mathematics

ETHEL TAYLOR, Instructor in Modern Languages

HOWARD MARSHALL WIGHT, M.S., Instructor in Zoology

SANFORD MYRON ZELLER, Ph.D., Fruit Pathologist

.....Instructor in English

.....Fellow in Entomology

.....Fellow in Zoology and Physiology

For administrative purposes the following College departments, the chief function of which is to serve the interests of students registered in the various schools of the College, are organized under the direction of the Dean of the Service Departments. The scope and facilities of the work in Art and Rural Architecture, Bacteriology, Botany and Plant Pathology, Chemistry, English Language and Literature, Entomology, History, Mathematics, Modern Languages, Physics, and Zoology and Physiology, are discussed under the respective departmental headings.

ART AND RURAL ARCHITECTURE

Art. The department of Art and Rural Architecture offers no regular courses in Art with the idea of instruction in the fine arts alone, but rather as art education relates to the highest ideals in everyday life, and meets the requirements of the industries, dress, and the home. Courses in drawing, composition, design, and color are offered for the purpose of facilitating instruction in the applied arts courses in design, metal work, clay modeling, and the ceramic arts, and in the work of such other departments as Landscape Gardening, Domestic Art, and Industrial Arts. The courses offered not only develop utilitarian ideas, but they also cultivate an appreciation of the beautiful in nature and art.

Rural Architecture. The courses in Architecture are offered primarily to students in Agriculture, Home Economics, and Engineering. All students, however, who are interested in domestic or rural architecture, may elect courses which they are prepared to take. The work is especially adapted to meet the utilitarian requirements of the various departments and to serve these departments in an able manner. The courses consist of problems in the design and construction of buildings and a consideration of building materials.

Equipment. The department occupies commodious, well-lighted studios on the fourth floor of Agricultural Hall, drafting rooms on the third floor of Science Hall, a metal-working laboratory, and a clay-modeling and pottery studio in the Mines building. The studios have north light, are well heated and ventilated, and are equipped with studio and laboratory accessories, such as casts, still life, prints, and tools. The department is also well supplied with wall drawings, pictures, and portfolios illustrating the different phases of the work.

The College Library has a carefully selected and growing reserve in art and architecture, covering all branches of the subject.

COURSES

Art

A110. **Drawing.** Freehand drawing of still life, developing the principles of representation in line and light and shade, by use

of pencil, charcoal, and brush and ink. A note-book on historic ornament is made by each pupil.

Required in Home Economics; freshman year; any term; 4 credits; 1 lecture; 1 recitation; 3 two-hour studio periods. Fee $0.50. Miss Flarida.

A211. **Industrial Arts Drawing.** Free-hand perspective and free-hand drawing of furniture and other articles, machine parts, and drawing from written descriptions.

Required in Industrial Arts; sophomore year; first term; 2 credits; 3 two-hour studio periods. Fee $0.50. Professor McLouth.

A120. **Design.** The elements of design construction and their application to problems of dress and home decoration are made the basis of this course. A note-book on Greek art is required of each pupil.

Prerequisite: A110, or equivalent. Required in Home Economics; freshman year; any term; 4 credits; 1 lecture; 1 recitation; 3 two-hour studio periods. Fee $0.50.

A221. **Industrial Arts Design.** A course in the principles of design suited to the Industrial Arts Curriculum. Original design plates for door and cabinet paneling, metal parts, hinges, escutcheons, draw pulls, etc., and furniture.

Prerequisite: A221. Required in Industrial Arts; sophomore year; second term; 3 credits; 3 two-hour studio periods. Fee $0.50. Professor McLouth.

A130. **The Theory and Harmony of Color.** This course covers the study of the so-called primary colors, the development of the prismatic colors with their complements, color quality, color values and the various harmonies. Problems are rendered in original color harmonies, and in the use of nature color and color paints. These problems are an application of appropriate color schemes as applied to articles of household use, dress, and home interiors.

Prerequisites: A110, 120. Required in Home Economics; sophomore year; any term; 4 credits; 1 lecture; 4 two-hour studio periods. Fee $0.50. Professor McLouth.

A 331. **Water Color.** The courses in water color are offered as electives and are open to any students who have completed courses A110, 120,and 130, or their equivalent. The work of the first term includes simple flat washes of geometric casts and flat color washes of still life subjects.

Elective; sophomore, junior, or senior year; any term; 2 credits; 3 two-hour studio periods. Fee $0.50. Professor McLouth.

A332. **Water Color.** A continuation of A 331, taking up more complex still-life subjects, posters, and landscape.

Prerequisite: A331. Elective; sophomore, junior, or senior year; any term; 2 credits; 3 two-hour studio periods. Fee $0.50. Professor McLouth.

A241. **Applied Design and Color.** An elective offered to give broader working knowledge of design principles which may serve as a guide to selection and adaptation for practical application in dress and the home. Problems in design and execution are required.

Prerequisites: A110, 120, and 230.

Elective; second term; 2 credits; 3 two-hour studio periods. Fee 0$.50. Professor McLouth and Miss Flarida.

A242. **Applied Design and Color.** A continuation of A241.

Prerequisite: A241. Elective; second or third term; 2 credits; 3 two-hour studio periods. Fee $0.50. Professor McLouth and Miss Flarida.

A341. **Clay Modeling and Pottery.** Study of modeling and making pottery; modeling from nature; tile building; mold and cast-making in plaster; firing and glazing.

Prerequisites: A110 and 120, or equivalent. Elective; junior or senior year; first term; 2 credits; 3 two-hour studio periods. Fee $1.00. Miss Flarida.

A342. **Clay Modeling and Pottery.** A continuation of A341, with more advanced work and more time given to clay modeling.

Prerequisites: A110, 120, 130, or equivalent, and A341. Elective; junior or senior year; second term; 2 credits; 3 three-hour studio periods. Fee $1.00.

A 441, 442, 443. **Jewelry Making.** The work of the first term is given over to the processes of sawing, hard and soft soldering, stone setting, and chain making. Copper, German silver, and sterling silver are used in the first pieces. In the second term a problem in enameling, and the use of the graver are included. In the third term carving and the various methods of stone setting are studied.

Prerequisite: A120 or equivalent. Elective; three terms; 2 credits each term; 6 hours a week. Fee $1.00 each term. Deposit $2.00 each term. Miss Flarida.

A251. **Pencil and Pen Rendering.** Pencil and pen technique; use of the pencil and pen in the expression of landscape gardening subjects; sketching; pencil drawing as used under washes; studio and out-of-doors work.

Required in Landscape Gardening; sophomore year; third term; 2 credits; 3 two-hour periods. Fee $0.50. Professor McLouth.

A351. **Water Color Rendering.** Color theory; brush technique; flat washes over pencil; use of water color washes in the expression of landscape gardening subjects.

Prerequisite: A251. Required in Landscape Gardening; junior year; second term; 3 credits; 4 two-hour periods and 1 one-hour period. Fee $0.50. Professor McLouth.

A352. **Water Color Rendering.** Continuation of A351. Application of color theory; rendering color washes of more complex landscape gardening subjects. Later in the term opportunity is given for out-of-doors sketching in water color.

Prerequisite: A351. Required in Landscape Gardening; junior year; third term; 3 credits; 4 two-hour periods and 1 one-hour period. Fee $0.50. Professor McLouth.

Rural Architecture

Note: All hours are laboratory or drafting room periods.

Arch 111, 112, 113. **Farm Structures.** Study of farm buildings and drawing of plans.

Elective; three terms; 2 credits each term; 6 hours a week. Fee $0.50. Assistant Professor Robinson.

Arch 211. **Farm Plan Drawing.** Study of the presentation of farm plans.

Elective; first term; 1 credit; 3 hours a week. Fee $0.50 Text: Howe, Agricultural Drafting. Assistant Professor Robinson.

Arch 212. **Perspective Drawing.** Study of the representation of buildings and ground by means of mechanical perspective.

Elective; second term; 1 credit; 3 hours a week. Fee $0.50. Assistant Professor Robinson.

Arch 213. **Dairy Buildings.** Study of dairy barns, silos, etc., by drawing plans.

Elective; third term; 2 credits, 6 hours a week. Fee $0.50. Assistant Professor Robinson.

Arch 311, 312, 313. **Landscape Drawing.** Study of the presentation of drawings used by landscape architects and gardeners.

Required in Landscape Gardening; junior year; three terms; 3 credits each term; 9 hours a week. Fee $1.00 each term. Assistant Professor Robinson.

Arch 317, 318, 319. **Horticultural Products Buildings.** Study of evaporators, store houses, and other structures by drawing plans and inspecting buildings.

Required in Horticultural Products; senior year; three terms; 1 credit each term; 3 hours a week. Fee $0.50. Assistant Professor Robinson.

Arch 320. **Domestic Architecture.** Study of house arrangement (for women students.)

Elective; junior year; any term; 2 credits; 6 hours a week. Fee: $0.75. Text: Robinson, Domestic Architecture. Assistant Professor Robinson.

Arch 331, 332, 333. **House Planning.** Study of architecture by working drawings of houses.

Elective; junior year; three terms; 3 credits each term; 9 hours a week. Fee $1.00 first term; $0.50 second and third terms. Text: Robinson, Domestic Architecture. Assistant Professor Robinson.

BACTERIOLOGY

Bacteriology has become fundamental to such sciences as Agriculture, Pharmacy, and Home Economics and is a necessary part of the training of every man or woman who is seeking a true education. The courses in Bacteriology are adapted to meet both technical and cultural needs of the students. In the sophomore year the work is general and fundamental in nature, and practically the same for all students; but in the later courses it becomes more specialized, following some definite branch of the science. So complex has the study of Bacteriology become that the attempt is no longer made to master the whole field but only one or two of the main branches of the subject such as Soil Bacteriology, Dairy Bacteriology, Pathogenic Bacteriology, and others.

During the junior and senior years, opportunity for advanced work is given to students who have had proper preliminary training and who show a natural aptitude towards the work. Students in Agriculture may elect Bacteriology as a minor, and receive the necessary fundamental training for positions in Agricultural Bacteriology in colleges, experiment stations, civil service, dairy and food inspection, etc.; while students in the Pharmacy and Premedical curricula may elect advanced work in Medical Bacteriology, Sanitation, and Public Health work. Graduate students in Dairy Husbandry, Soils, Horticultural Products, Pharmacy, or Home Economics, may elect Bacteriology as a minor with the approval of their major professor and the Professor of Bacteriology.

Proper understanding of Bacteriology necessitates a fair knowledge of General Chemistry, which is therefore made a prerequisite of the courses in Bacteriology. Before a student can progress very far in the work a knowledge of Qualitative, Organic, and Agricultural Chemistry is necessary, but these subjects will have been taken by students in the degree curricula by the time they are required for their bacteriological work.

Equipment. The department of Bacteriology is located on the fourth floor of Agricultural Hall. The department has well equipped laboratories for resident study and Experiment Station work, with dark room, storeroom, large incubator room for student use, and a departmental library containing the latest authentic texts on Bacteriology. The general library has all the available American and foreign bacteriological periodicals of recognized

merit. The department is well supplied with the highest grade microscopes, glassware, and other equipment for general and advanced work.

COURSES

Bact 201. **General Bacteriology (Agricultural).** A series of lectures, recitations, and laboratory experiments to familiarize students with the fundamental principles of Bacteriology as applied to Agriculture.

Prerequisite: One year of Chemistry. Required in Agriculture; sophomore year; any term; 4 credits; 2 lectures; 3 two-hour laboratory periods. Fee $4.00. Text: Russell and Hastings, Agricultural Bacteriology.

Bact 202. **General Bacteriology.** A continuation of Bacteriology 201. Lectures and laboratory work devoted to applied Agricultural Bacteriology and a more thorough knowledge of the principles of Bacteriology.

Prerequisite: Bact 201. Elective in Agriculture; sophomore year; second term; 3 credits; 2 lectures; 2 two-hour laboratory periods. Fee $3.00. Text: Marshall, Microbiology.

Bact 204. **General Bacteriology.** A series of lectures, recitations, and laboratory experiments to familiarize students with the fundamental principles of Bacteriology.

Prerequisite: One year of Chemistry. Required in Home Economics; sophomore year; first or second term; 3 credits; 2 lectures; 2 two-hour laboratory periods. Fee $3.00. Text: Buchanan, Household Bacteriology.

Bact 205. **Home Economics Bacteriology.** A continuation of Bacteriology 204. A course adapted primarily to students of Home Economics. Bacteriology of food preservation, principles of sanitation, bacteriological studies of water, milk, and foods of all kinds; common infectious disease; disinfection; germicides; and preservatives.

Prerequisite: Bact 204 or 201. Required in Home Economics; sophomore year; second or third term; 3 credits; 2 lectures; 2 two-hour laboratory periods. Fee $3.00. Text: Buchanan, Household Bacteriology.

Bact 301, 302,303. **Advanced Bacteriology.** Beginning with the first term of the junior year, students in Agriculture and

Pharmacy may elect Bacteriology as a minor and continue throughout the rest of their college course.

Prerequisite: Bact 202. Elective; junior year; three terms; 4 credits each term; 3 two-hour laboratory periods; 2 lectures. Fee $4.00 each term.

Bact 401, 402, 403. **Advanced Bacteriology.** A continuation of Bacteriology 303 comprising further training in the principles and technique of Bacteriology besides directing the study along one of the main lines of Bacteriology.

Prerequisite: Bact 303. Senior year; three terms; 4 credits each term; 3 two-hour laboratory periods; 2 lectures. Fee $4.00 each term.

Bact 311. **Dairy Bacteriology.** Application of Bacteriology to dairy practices; physiological activities of bacteria underlying bacterial analysis of dairy products; dairy sanitation; bacteriology of diseases of dairy cattle.

Prerequisite: Bact 201. Required in Dairy Husbandry; junior or senior year; first term; 4 credits; 2 lectures; 3 two-hour laboratory periods. Fee $4.00.

Bact 312. **Dairy Bacteriology.** A continuation of Bact 311. A more thorough study of specific problems in Dairy Bacteriology and practice in special technique, adapted to particular needs of individual students as far as possible, and planned to train students as bacteriologists for creameries and market milk plants.

Prerequisites: Bact 201 and 311. Elective in Agriculture; junior or senior year; second term; 3 credits; 1 lecture; 3 two-hour laboratory periods. Fee $3.00.

Bact 321. **Soil Bacteriology.** A study of micro-organisms of the soil and their relation to soil fertility; biochemistry of the decomposition of humus; nitrogen-fixation; ammonification, etc.; relation of bacteria to soil fertility and study of the soil as a medium for bacteriological growth.

Prerequisite: Bact 201. Elective in Agriculture; senior year; first term; 4 credits; 2 lectures; 3 two-hour laboratory periods. Fee $4.00.

Bact 322. **Soil Bacteriology.** A continuation of Bacteriology 321. A more thorough study in soil of different farm practices. Review of literature on Soil Bacteriology.

Prerequisite: Bact 321. Elective in Agriculture; senior year; second term; 3 credits; 1 lecture; 3 two-hour laboratory periods. Fee $3.00.

Bact 332. **Pharmacy Bacteriology.** Continuation of Bacteriology 204. Lectures and laboratory work devoted to principles of Bacteriology and study of Pathogenic Bacteriology.

Prerequisite: Bact 201 or 204. Required in Pharmacy; junior year; second term; 3 credits; 2 lectures; 2 two-hour laboratory periods. Fee $3.00. Text: Hiss and Zinsser, A Text-Book of Bacteriology.

Bact 333. **Immunity and Serum Therapy.** A study of the theory of immunity and its application to serum therapy; preparation of toxins, antitoxins, vaccines, etc.; study of normal and pathological blood.

Prerequisites: Bact 201 and 332. Required in Pharmacy; junior year; third term; 3 credits; 2 lectures; 2 two-hour laboratory periods. Fee $3.00. Text: Hiss and Zinsser, A Text-Book of Bacteriology.

Bact 441. **Zymology and Fermentations.** An elective for students in Horticultural Products. This course is planned to train the student to meet the bacteriological problems in food preservation such as the isolation, identification, and control of microorganisms causing spoilage of fruits, vegetables, and other food stuffs; the bacteriology of curing, ripening, and preserving food products.

Prerequisite: Bact 202 or 204. Elective in Agriculture; senior year; second term; 3 credits; 2 lectures; 2 two-hour laboratory periods.

Bact 480. **Seminar.** A discussion of the current literature on bacteriological topics.

Agriculture; senior year; any term; 1 credit; 1 hour.

Bact 691, 692, 693. **Research in Bacteriology.** Work for the master's degree, either as a minor or major in the department, may

be selected and continued with the assistance and cooperation of the instructional staff of the department.

Prerequisite: Two years in Bacteriology. Credits and hours to be arranged. Fee $1.00 a credit.

Bact 11. **Vocational Dairy Bacteriology.** An elementary study of the bacterial factors in dairy production. Effect of pasteurization, cooling, straining; study of general sanitation, cleanliness of dairy, etc.

Required in Dairy Manufactures Vocational Curriculum; second term; 1 credit; 1 lecture; 1 two-hour laboratory period. Fee $1.00.

BOTANY AND PLANT PATHOLOGY

The courses offered in the department aim not only to give the student a knowledge of plants, their external and internal structure, their vital activities, their relations to their environment, and their natural classification; but also to impart such fundamental and practical information in regard to plants as will form a strong foundation for the technical work in Agriculture, Forestry, Pharmacy, and Home Economics.

Exceptional opportunities are afforded students who desire to specialize in Botany and Plant Pathology. Well-equipped laboratories and the unusually favorable location for field study and collecting, offer an attractive inducement for those wishing preparation for teaching Economic Biology or Botany in secondary schools, or Botany and Plant Pathology in colleges and universities. Special attention is given those who wish to take up investigational work in agricultural experiment stations or in the United States Department of Agriculture under the civil service. Training in Botany or Plant Pathology is a most valuable asset to agricultural extension workers, horticultural inspectors, district agriculturists, seed analysts, and pure-food experts.

Equipment. The department of Botany and Plant Pathology is amply quartered on the second floor of Agricultural Hall. The three general student laboratories are equipped with compound microscopes for each student and with special artificial illumination for microscopic work. The laboratories for special studies in Plant Pathology, Plant Physiology, and Plant History are provided with all the equipment required for ordinary courses and in addition special instruments and technical apparatus are available for advanced work. The herbarium contains several thousand specimens of native and introduced plants including cultivated forms, weeds, poisonous plants, drug plants, and other plants of economic importance. A battery of electrical driers is provided for collected material. Several thousand specimens of fungi, mostly parasitic forms, are comprised in the mycological collection. Physiologic dark rooms, photographic dark rooms, greenhouse space, and culture and sterilizing rooms for work with parasitic organisms are available. The departmental library contains excellent sets of

reference works and bulletins, and receives the current issues of practically all of the more important botanical periodicals published in America and foreign countries.

Courses for Students Majoring in Botany and Plant Pathology. Students desiring to pursue special training in Botany and Plant Pathology are expected to take the usual work required in the freshman and sophomore years of the curricula in Agriculture or Home Economics. In the junior and senior years, besides the courses or options required of all students in these schools, special courses in Botany and Plant Pathology and related subjects are prescribed by the department of Botany and Plant Pathology. Students may obtain information from the head of the department regarding these requirements.

Graduate Courses: Botany 414, 415, 421, 441, 442, 443, and 445 may be taken by graduate students as major or minor electives with full credit.

Grazing Assistant Positions: Students preparing for grazing assistant positions under the U. S. Forest Service should take the following courses: Botany 101, 102, 321, 331, 341, and 442.

COURSES

Bot 101, 102. **General Botany.** A two-term sequence taking up a study of higher plants as living things faced with problems of existence; their fundamental structure; life-histories; physiology; relation to soil, air, moisture, temperature, etc.; extent and constitution of the vegetable kingdom as a whole; forms causing plant diseases or producing decay; main characteristics of the principal families of agricultural plants.

Required in Agriculture; freshman year; first and second terms; 4 credits each term; 1 lecture; 1 recitation; 3 two-hour laboratory periods. Fee $1.50 each term. Deposit $1.00 each term. Text: Martin, Botany for Agricultural Students.

Bot 107, 108, 109. Pharmaceutic Botany. A three-term sequence preparatory to Pharmacognosy and Materia Medica and concentrated upon the study of various plant tissues, identification of drug plants, study of crude and powdered drugs and their identification.

Required in Pharmacy; freshman year; three terms; 3 credits each term. Texts: Youngken, Pharmaceutical Botany. Greenish, Foods and Drugs. Mansfield, History of Medicinal Plants. Assistant Professor Gilkey.

Bot 201. **Home Economics Botany.** Structure and life processes of plants with reference to the care of house plants, the kitchen garden, and the home grounds; microscopic plants as causes of plant diseases and of the spoilage of food materials; origin of useful plant products such as foods, drugs, textile fibers, building material, paper, etc.

Required in Home Economics; sophomore year; any term; 3 credits; 1 lecture; 1 recitation; 2 two-hour laboratory periods. Fee $1.00. Text: Ganong, A Textbook of Botany for Colleges. Assistant Professor Gilkey.

Bot 311. **Principles of Plant Pathology.** Causes, symptoms, effects, and means of dissemination of disease in plants; principles of plant disease control; laboratory work with various types of plant diseases and the different groups of plant parasites.

Prerequisites: Bot 101 and 102 or their equivalent. Required in Agriculture (plant group); junior year; second term; 4 credits; 2 recitations; 3 two-hour laboratory periods. Fee $1.50. Deposit $1.00. Text: Duggar, Fungous Diseases of Plants. Assistant Professor Owens.

Bot 411. **Fruit Diseases.** Causes, symptoms, progress, and control of the important fungous, bacterial, and physiological diseases of orchard trees and small fruits, with emphasis on those of importance in the Pacific Northwest. Studies in the laboratory are supplemented by field excursions.

Prerequisite: An elementary course in Botany. Elective; third term; 3 or more credits; 1 recitation; 2 three-hour laboratory periods or field trips. (Additional periods for additional credit.) Fee $0.50 each credit. Text: Piper and Beattie, Flora of the Northwest Coast. Assistant Professor Gilkey.

Bot 412. **Diseases of Field Crops and Vegetables.** Similar to Bot 411, but dealing with diseases of field crops and truck and garden vegetables.

Prerequisite: Bot 311. Required in Plant Pathology; senior year; first term; 3 credits; 2 recitations; 2 two-hour laboratory periods. Fee $1.00. Deposit $0.50. Assistant Professor Owens.

Bot 413. **Forest Pathology.** The parasitic and saprophytic fungi which attack forest trees and destroy structural timber; their effects upon the wood; preventive measures.

Prerequisites: Bot 101 and 102, or equivalent. Elective; junior or senior year; first term; 2 credits; 1 recitation; 1 two-hour laboratory period. Fee $0.50. Assistant Professor Owens.

Bot 414. **Mycology.** A study of the different groups of fungi with special attention to parasitic forms, dealing with structure, life-history, and classification. An advanced course.

Prerequisites: Bot 101 and 102, or equivalent. Elective; senior year; second term; 4 credits; 2 recitations; 3 two-hour laboratory periods. Fee $2.00. Text: Harshberger, Mycology. Professor Barss.

Bot 415. **Plant Pathological Technique.** A training course in the technical methods employed in plant pathological investigations; isolation, cultivation, and inoculation of parasitic organisms; record keeping; care of collections; photographic methods, etc. For advanced students.

Prerequisite: Bot 311. Elective; senior year; second term; 3 credits; 1 recitation; 2 two-hour laboratory periods. Fee $2.00. Deposit $2.00. Text: Harshberger, Mycology. Professor Barss.

Bot 321. **Plant Physiology.** A study of the life processes and vital requirements of the plant as a basis for intelligent agricultural and horticultural practice; physiology of the living plant; response made by the plant to the influences surrounding it; laboratory experiments.

Prerequisites: Bot 101 and 102, or their equivalent, and Chem 251. Required in Agriculture (plant group); junior year; third term; 4 credits; 1 lecture; 2 recitations; 3 two-hour laboratory periods. Fee $3.00. Deposit $2.00. Text: Duggar, Plant Physiology. Associate Professor Atwood.

Bot. 421. **Advanced Plant Physiology.** Special studies of plant physiological problems of present-day interest and importance; extensive reading and class reports on selected topics.

Prerequisite: Bot 321. Elective for advanced students; second term; 3 credits. (Additional credit may be taken by arranging with instructor.) Schedule and fees depending on nature of problems undertaken. Associate Professor Atwood.

Bot 331. **Classification of Economic Plants.** A study of the families of higher plants and the identification of weeds, ornamentals, crop plants, etc., as students may elect; field trips for collecting specimens and recording data, and laboratory analysis of material thus collected; practice in drying and mounting plant specimens.

Prerequisite: Bot 311. Required in Pomology; senior year; third term; 3 credits; 2 recitations; 2 two-hour laboratory periods. Fee $1.00. Deposit $0.50. Text: Hesler and Whetzel, Manual of Fruit Diseases. Assistant Professor Owens.

Bot 341. **Range and Pasture Botany.** A study of the edible, nonedible, and poisonous plants of the range and pasture, their characteristics, life-histories, methods of reproduction, conditions for growth, their distribution and ecological factors affecting them; relation of grazing to the maintenance of ranges and pastures; methods of preventing stock poisoning or of eradicating poisonous plants. Of interest to students in Animal Husbandry, Dairy Production, and to forest rangers.

Prerequisites: Bot 101 and 102, or equivalent. Elective; second term; 2 credits; 1 recitation; 1 two-hour laboratory period. Fee $1.00. Text: Piper and Beattie, Flora of the Northwest Coast. Assistant Professor Lawrence.

Bot 441. **Comparative Morphology and Evolution of Plants.** An advanced course aiming to show the tendencies and causes which impel or control evolution within the plant kingdom and designed to broaden the student's knowledge of the different groups of plants by comparison of the organic structure, life-histories, cytological development, and reproductive processes of representative forms. Basis to work in Genetics, Plant Breeding, and advanced biologic study.

Prerequisites: Bot 101 and 102 or equivalent. Elective for advanced students; first term; 4 credits; 1 lecture; 1 recitation; 3 two-hour laboratory periods. Fee $2.00. Text: Coulter et al., A Text-Book of Botany, Vol. I, Part 1. Coulter, Evolution of Sex in Plants. Assistant Professor Lawrence.

Bot 442. **Economic Plant Ecology.** A study of the effects on living plants of external influences such as climate, soil, physiography, etc., under natural condition or under conditions modified by

agriculture; native vegetation as an indication of agricultural possibilities. Of special value to students of Agriculture, Forestry, Grazing, Agricultural Economics, Irrigation and Drainage, Plant Introduction, Geology, and Botany, and any expecting to enter state or Federal field service.

Prerequisites: Bot 101 and 102, or equivalent. Elective; third term; 3 credits; 1 lecture; 1 recitation; 1 three-hour laboratory period. Fee $1.00.

Bot 443. **Plant Histology.** An advanced course dealing with the structure, inclusions, activities, and methods of division of the plant cell; development, structure, and relation to function of various types of plant tissues; training in the technique of making temporary and permanent microscopic mounts, including sectioning, staining, etc.

Prerequisites: Bot 101 and 102, or equivalent. Elective; first term; 3 credits; 1 recitation; 2 three-hour laboratory periods. Fee $3.00. Deposit $2.00. Text: Stevens, Plant Anatomy. Assistant Professor Owens.

Bot 444. **Advanced Study and Thesis.** For students specializing in Botany and Plant Pathology. Investigation of special problems or advanced studies not included in regular courses.

Elective; junior or senior year; any term; credit, hours of work, etc., to be arranged with major professor.

Bot 471. **The Teaching of Botany.** For prospective teachers of natural science in secondary schools. Deals with point of view, methods, materials, texts, and equipment in teaching Botany, and adaptation of the work to the interests, needs, and possibilities of the community. (Coordinated with Zool 472 and Ent 473 which follow.)

Prerequisite: An elementary course in Botany. Elective; senior or graduate year; first term; 5 credits; 2 lectures; 1 recitation; 3 two-hour laboratory periods or field trips. Fee $1.50. Deposit $1.00. Assistant Professor Owens.

Bot 481, 482, 483. **Seminar.** The seminar is attended and contributed to by advanced students and instructional staff in the department of Botany and Plant Pathology and consists of reports on advanced botanical studies, extracts of articles along botanical lines

appearing in scientific journals and other publications. Students are required to prepare and present papers on assigned topics.

Required in Botany; senior or graduate year; three terms; 1 credit each term; 1 hour a week.

Bot 691, 692, 693. **Graduate Study and Thesis.** Graduate students may register under these numbers for special studies and investigations of graduate grade in any line of work included within the scope of the department of Botany and Plant Pathology. Thesis work for the master's degree is taken up under these numbers.

Elective for graduate students; any term; credits, hours, prerequisites, etc., are arranged by the instructor in charge of the major line of work pursued, subject to the approval of the head of the department.

Bot 11. **Plant Disease Control.** A practical course. How to recognize and how to prevent or eradicate the most common and destructive diseases of field crops, fruits, and vegetables.

Required in Vocational Curriculum in Agriculture; first term; 3 credits; 1 lecture; 1 recitation; 2 two-hour laboratory periods. Fee $1.00. Assistant Professor Owens.

CHEMISTRY

The foundation courses in General Chemistry consist in familiarizing the student with the more important underlying principles of the science and the fundamentals of laboratory technique. These principles are devolved and illustrated largely through a study of the descriptive chemistry of the non-metallic and metallic elements, including appropriate means for identifying each.

The courses in Analytical Chemistry consist of (a) Qualitative Analysis, by means of which the student is enabled to classify, separate, and identify the components of mixtures and constituents of compounds; (b) Quantitative Analysis, in which he determines the actual quantity of those components and constituents which he has previously learned to separate and identify.

A study of the principles of Organic Chemistry and their applications in the laboratory follows the above courses.

Having completed the above, the student is now fairly well prepared to begin specialization in the field of chemistry. The following lines of specialization are suggested: (1) Agricultural Chemistry. Study and analysis of soils, feeds, fertilizers, dairy and horticultural products; animal nutrition and general experiment station work. (2) Inorganic Chemistry and Analysis. Study and analysis of minerals, ores, alloys, and the products of metallurgical and other inorganic chemical industries, including advanced inorganic chemistry and a study of the rarer elements and their technical application. (3) Pharmaceutical and Physiological Chemistry. Study of the chemical processes more intimately associated with foods, drugs, pharmaceutical products, and the products of the human economy, including comprehensive analytical methods, and advanced organic synthesis. (4) Chemical Engineering. Preparation for the field of industrial chemical technology.

Equipment. The department of Chemistry occupies nearly the whole of Science Hall, excepting the fourth floor which is occupied at present by the School of Pharmacy, and four rooms used by the Experiment Station Chemistry department.

The first floor contains the main general laboratory, the stockroom and the organic laboratory. The general laboratory, designed for practical work in modern chemistry, is well lighted and

commodious, with accommodations for eighty students at one time. The general laboratory and the organic laboratory are both contiguous to the stockroom. The organic laboratory accommodates ninety-six students daily. These laboratories are equipped with the necessary apparatus. The laboratory used for Quantitative Analysis is on the second floor. The equipment of this laboratory is adequate to give training in the quantitative methods of chemistry and in most of the analytical work required in the laboratories of modern commercial establishments. The School of Agriculture demands in its students skill in analytical methods, and classes giving this training fill the main quantitative laboratory during the greater part of the day.

COURSES

Chem 101. **General Chemistry.** Fundamental principles and their application; the non-metallic elements and their compounds; laboratory work in identification of anions. A two-week introductory course in elementary physical concepts precedes the regular work.

Required in Agriculture, Home Economics, and Engineering; freshman year; first term; 3 credits; 1 lecture; 1 recitation; 2 two-hour laboratory periods. Fee $4.50. Deposit $2.00.

Chem 102. **General Chemistry.** Continuation of Chem 101. Metallic elements and their compounds; introductory study of chemical equilibrium; theory of solution; law of mass-action and the periodic law. The laboratory work completes anion classification and identification, and includes study of the reactions of the cations and their identification.

Prerequisite: Chem 101 or equivalent. Required in Agriculture, Home Economics, and Engineering; freshman year; second term; 3 credits; 1 lecture; 1 recitation; 2 two-hour laboratory periods. Fee $4.50. Deposit $2.00.

Note: Students who have had one year of Chemistry in a standard high school may be permitted to take an examination for credit in Chem 101 and 102 provided their high-school credits in Chemistry are not used in entrance units. This examination will be held one week after the opening of the first term. Laboratory note-books must be presented.

Chem 103. General Chemistry. Continuation of Chem 102. Metallic elements and their compounds; elementary study of the principles of qualitative analysis; further extension and application of the principles of chemical equilibrium; the law of mass action; theory of solution; the periodic law; laboratory work in elementary qualitative analysis and, in addition, a few typical exercises in gravimetric and volumetric analysis, including acidimetry and alkalimetry.

Prerequisite: Chem 102 or equivalent. Required in Agriculture, Home Economics, and Engineering; freshman year; third term; 3 credits; 1 lecture; 1 recitation; 2 two-hour laboratory periods. Fee $4.50. Deposit $2.00.

Chem 104. General Chemistry. Fundamental principles and their application; the nonmetallic elements and their compounds; the atomic theory; valence; oxidation and reduction reactions studied from the standpoint of the electron theory; introductory study of chemical equilibrium; laboratory work in quantitative applications of the more important chemical principles, and the reactions and means of identification of the common anions.

Prerequisite: High school Chemistry and Physics. Required in Chemical Engineering, Mining Engineering, and Pharmacy; freshman year; first term; 5 credits; 1 lecture; 2 recitations; 3 three-hour laboratory periods. Fee $7.50. Deposit $2.00.

Chem 105. General. Continuation of Chem 104. The metallic elements and their compounds; extension of the fundamental principles of the preceding course; chemical equilibrium and the law of mass action considered quantitatively; solubility products; the periodic law; laboratory work in systematic classification and identification of the common ions, together with numerous quantitative exercises illustrative of the more important chemical principles.

Prerequisite: Chem 104 or equivalent. Required in Chemical Engineering, Mining Engineering, and Pharmacy; freshman year; second term; 5 credits; 1 lecture; 2 recitations; 3 three-hour laboratory periods. Fee $7.50. Deposit $2.00.

Chem 106. General. Continuation of Chem 105. The metallic elements and their compounds from the standpoint of qualitative analysis; i. e., the classification, separation, and identification of cations. Further development of the principles of the preceding courses; introductory study of complex ions; thermochemistry, electrochemistry, colloid chemistry, and the phase rule.

Prerequisite: Chem 105. Required in Chemical Engineering, Mining Engineering, and Pharmacy; freshman year; third term; 2 credits; 2 recitations.

Chem 411. **Elementary Glass Blowing and Repairing.** Elements of the art of welding, cutting, and grinding glass. Each student must procure his own glass and files. Especially for those who expect to become instructors in high schools.

Elective; junior or senior year; 1 credit; 1 three-hour laboratory period. Fee $2.00. Text: Woollatt, Laboratory Arts. Frary, Glass Blowing.

Chem 221. **Organic.** Study of occurrence, methods of preparation, characteristic reactions, and properties of the more common organic compounds; the parafins, alcohols, aldehydes, ketones, ethers, fatty acids, esters, benzine, phenols, aniline and a few dyes.

Prerequisite: Chem 103. Required in Home Economics; sophomore year; first term; 5 credits; 2 lectures; 2 recitations; 3 two-hour laboratory periods. Fee $7.50. Deposit $2.00.

Chem 222. **Food Chemistry.** Nature of the carbohydrates, proteins, fats in common food stuffs; qualitative tests for the same; chemical changes the foods undergo in the process of digestion and metabolism.

Prerequisite: Chem 221 or 226. Required in Home Economics; sophomore year; third term; 5 credits; 2 lectures; 2 recitations; 3 two-hour laboratory periods. Fee $7.50. Deposit $2.00.

Chem 224. **Organic.** A course similar to Chem 221, but dealing also with the carbohydrates, proteins, and other compounds of carbon which are of special importance along agricultural and biochemical lines.

Prerequisites; Chem 103, 244. Required in Agriculture; sophomore year; second term; 5 credits; 3 lecture-recitations; 3 three-hour laboratory periods. Fee $7.50. Deposit $2.00.

Chem 226, 227. **Organic.** A two-term sequence in the chemistry of the carbon compounds; the aliphatics and derivatives including methods of separation, preparation, identification, properties, and characteristic reactions.

Prerequisites: Chem 106. Required in Pharmacy (sophomore year) and in Chemical Engineering (junior year); first and second terms; 5 credits each term; 2 lectures; 2 recitations; 2 three-

hour laboratory periods. Fee $7.50 each term. Deposit $2.00 each term.

Chem 228. **Organic Analysis.** Qualitative tests and analysis of some organic compounds and mixtures; quantitative determination of carbon, hydrogen, nitrogen, and sulfur in organic compounds.

Prerequisites: Chem 227, 244. Required in Chemical Engineering; junior year; third term; 5 credits; 1 recitation; 4 three-hour laboratory periods. Fee $7.50. Deposit $2.00.

Chem 229. **Organic Synthesis.** The methods of synthesis for the more complex organic compounds; acetoacetic ester, malonic ester; Grignard's reagents; the zinc alkyls; diazonium compounds and their use in synthetic chemistry.

Prerequisites: Chem 227, 244. Elective; senior year; first term; 5 credits; 2 recitations; 3 three-hour laboratory periods. Fee $7.50. Deposit $2.00.

Chem 321. **Textile Identification.** Identification of the different materials used in the textile industries.

Prerequisites: Chem 103, 221. Elective; junior year; third term; 2 credits; 1 lecture; 2 two-hour laboratory periods. Fee $2.00. Deposit $2.00.

Chem 131. **Qualitative Analysis.** A laboratory course to accompany Chem 106; cannot be taken separately. The classification, separation, identification of the common ions and cations; dissolving and analysis of solid substances, including salts, alloys, etc.

Prerequisite: Chem 105 or equivalent; must be accompanied by Chem 106. Required in Chemical Engineering, Mining Engineering, and Pharmacy; freshman year; third term; 3 credits; 3 three-hour laboratory periods. Fee $7.50. Deposit $2.00.

Chem 231. **Qualitative Analysis.** Advanced course. Review of theory and practice of analytical operations; separation and identification of the components of such substances as ores, minerals, rocks, slags, mattes, alloys, and metallurgical by-products. Some work is given in the identification of the less common metals, and qualitative tests are made with boiler scale and cement.

Prerequisites: Chem 106 and 131, or equivalent. Required in Mines; sophomore year; first term; 3 credits; 1 lecture or recitation; 2 three-hour laboratory periods. Fee $4.50. Deposit $2.00.

Chem 233. **Qualitative Analysis.** Advanced Course. Review of the theory and practice of analytical operations and the application of the principles of the preceding courses in General Chemistry and Qualitative Analysis. The separation and identification of the less common elements such as selenium, tellurium, vanadium, and tungsten. Some practice is given in "dry analysis" so as to enable the student to grasp these methods of attack in complete analysis.

Prerequisites: Chem 106 and 131 or equivalent. Elective; sophomore year; first term; 5 credits; 1 lecture; 2 recitations; 3 three-hour laboratory periods. Fee $7.50. Deposit $2.00.

Chem 234. **Qualitative Analysis.** A complete course in Qualitative Chemistry including the less common elements and the "rare earths." The lecture and recitation work includes the descriptive chemistry of the rarer elements and their analytical reactions. In the laboratory the student is expected to analyze materials of such nature as to develop his originality and ingenuity to a relatively high degree.

Prerequisite: Chem 231 or 233 or equivalent. Elective in Mining and Chemical Engineering; junior year; first or second term; 5 credits; 2 lectures; 4 three-hour laboratory periods. Fee $10.00. Deposit $3.00.

Chem 241. **Quantitative Analysis.** Elementary gravimetric and volumetric analysis as far as through oxidation and reduction.

Required in Mining Engineering; sophomore year; second term; 3 credits; 1 lecture and 1 recitation; 6 hours laboratory work. Fee $4.50. Deposit $2.00.

Chem 242. **Quantitative Analysis.** Continuation of Chem 241. Gravimetric and volumetric analysis of limestone, iron, lead, zinc, arsenic, and antimony ores, and various products from the copper refineries.

Required in Mines; sophomore year; third term; 3 credits; 1 lecture; 1 recitation; 6 hours laboratory work. Fee $4.50. Deposit $2.00.

Chem 244. **Quantitative Analysis.** Elementary quantitative analysis.

Required in Pharmacy and Chemical Engineering; sophomore year; second or third term; 5 credits; 1 lecture; 1 recitation; 12 hours laboratory work. Fee $7.50. Deposit $2.00.

Chem 245. **Quantitative Analysis.** Continuation of Chem 244. Analysis of steels, brasses, and metallurgical and industrial products.

Required in Chemical Engineering; 1 recitation; 12 hours laboratory work. Fee $7.50. Deposit $2.00.

Chem 247. **Quantitative Analysis.** For Agricultural students. Exercises in gravimetric and volumetric analysis of various materials related to agricultural pursuits, with a view of teaching skill in the manipulation of instruments of precision, especially in the use of the analytical balance; stoichiometrical problems.

Prerequisite: Chem 103. Required in Agriculture; sophomore year; first term; 5 credits; 1 lecture; 2 recitations; 3 three-hour laboratory periods. Fee $7.50. Deposit $2.00.

Chem 251. Agricultural Chemistry. The lectures lay the foundation for the correlation of plant chemistry, soil chemistry, and fertilizer chemistry, and emphasize the economic importance of certain groups of compounds—as the carbohydrates, fats, and proteins—which characterize our commonly-grown farm crops. The laboratory work supplements the lecture work.

Prerequisites: Chem 244, 225. Required in Agriculture; sophomore year; third term; 5 credits; 3 lectures; 3 three-hour laboratory periods (one devoted to supervised study and recitation.) Fee $7.50. Deposit $2.00.

Chem 351. **Dairy Chemistry.** Chemistry of milk, butter, oleomargerine, cheese, and other dairy products.

Prerequisite: Chem 244 or equivalent. Elective; junior year; first term; 3 credits; 3 three-hour laboratory periods; recitations at discretion of instructor during laboratory periods. Fee $4.00. Deposit $2.00.

Chem 352. **Chemistry of Spraying Materials.** Chemistry of the various insecticides and fungicides and inspection of a number of the commercial spraying materials.

Prerequisite: Chem 244 or equivalent. Elective; junior year; second term; 3 credits; 3 three-hour laboratory periods. Fee $4.50. Deposit $2.00.

Chem 353. **Chemistry of Horticultural Products.** Chemistry of fruits and fruit products, vegetable and vegetable products, as related to industrial processes.

Prerequisite: Chem 244 or equivalent. Elective; junior year; third term; 3 credits; 3 three-hour laboratory periods.

Chem 354. **Plant Chemistry.** Consideration of the growth and composition of plants; properties, nature, and classification of plant constituents; chemical analysis; chemical synthesis; enzymes; chemistry of the manufacture of plant products, etc. Laboratory work to the extent of 2 or 3 credits may be taken in connection with the lectures.

Prerequisite: Chem 256 or equivalent. Elective; third term; 2 credits; 2 lectures. Text: Haas and Hill, Chemistry of Plant and Plant Products.

Chem 461. **Physiological.** The properties, chemical nature, and reactions of the important body tissues; enzyme action, digestion, metabolism; blood tests and urine analysis.

Prerequisites: Chem 227, 224 or 222. Required in Pharmacy; senior year; third term; 5 credits; 2 recitations; 3 three-hour laboratory periods. Fee $7.50. Deposit $2.00.

Chem 371. **Alkaloidal Testing.** Study of the properties of the common alkaloidal drugs; testing for detecting and methods for isolating the common poisons from plants and animal tissues.

Prerequisites: Chem 227, 224. Required in Pharmacy; junior year; first term; 3 credits; 3 three-hour laboratory periods. Fee $4.50. Deposit $2.00.

Chem 374. **Drug Assaying.** Quantitative estimation of the active principles of crude drugs and their preparations, such as solid and fluid extracts, tinctures, pills, etc.

Prerequisite: Chem 371. Required in Pharmacy; junior year; second term; 3 credits; 3 three-hour laboratory periods. Fee $4.50. Deposit $2.00.

Chem 375. **Advanced Drug Assaying.** An advanced course for students in Pharmacy who intend to enter manufacturing pharmaceutical laboratories.

Prerequisite: Chem 374. Elective; senior year; first term; 3 credits; 3 three-hour laboratory periods. Fee $4.50. Deposit $2.00.

Chem 377. **Food and Drug Analysis.** Designed to fit students for positions in food and drug laboratories. Qualitative and quantitative analysis of food and drug products commonly subject to adulteration.

Prerequisites: Chem 227, 224; Bot 109. Required in Pharmacy; senior year; third term; 3 credits; 3 three-hour laboratory periods. Fee $4.50. Deposit $2.00.

Chem 378. **Advanced Food and Drug Analysis.** Continuation of Chem 377.

Prerequisite: Chem 377. Elective in Pharmacy; senior year; second term; 3 credits; 3 three-hour laboratory periods. Fee $4.50. Deposit $2.00.

Chem 481, 482, 483. **Physical Chemistry.** Molecular weight determinations; properties of liquids; dilute solutions; solubilities; conducting of solutions; chemical equilibrium; velocity of reactions; thermochemical measurements.

Prerequisites: Chem 106, 233, 245; Math 131. Required in Chemical Engineering; senior year; three terms; 3 credits each term; 3 three-hour laboratory periods. Fee $4.50 each term. Deposit $2.00 each term.

Chem 490. **Minor Seminar in Chemistry.** Required of student assistants in Chemistry; open also to students who intend to teach elementary Chemistry in high schools. Topics covered: the fundamental principles of Chemistry and methods of presentation to classes; discussion of note-books and examination papers; methods of grading; class room and laboratory administration; assembling apparatus; laboratory furnishings; repairs.

Prerequisites: Chem 106, 244, 231, 481. Elective; graduate year; 3 lectures or laboratory periods. Fees and deposits to be arranged.

Chem 491, 492, 493. **Advanced Inorganic.** A graduate course intended to classify and correlate the student's knowledge of the field of chemistry as viewed from the several standpoints of the various courses he has pursued. Lectures, collateral readings, and discussions on the periodic system from the point of view of Mendelejeff, Lothar Meyer, Harkins, and Werner; valency; X-ray and crystal structure; molecular symmetry as exemplified in crystal form; chemistry of the rarer elements; higher order compounds; complex inorganic acids; inorganic stereochemistry and isomerism; electron theory and electromerism; correlation of inorganic and organic Chemistry based on the electron theory; the later ideas of valency; cooling curves and thermal analysis; colloids; and similar topics.

Elective; any term; 2 meetings each week.

Chem 494. **History of Chemistry.** Rise and development of chemical theories and laws.

Prerequisite: Chem 106 or equivalent. Elective; second term; 2 credits; 2 lectures or recitations.

Chem 51. **Dairy Chemistry.** A very elementary course of laboratory exercises designed to acquaint creamery operators with the principles and technique involved in such laboratory work as the testing of milk and cream for acidity, total solids, ash, etc.

Required in Agriculture Vocational Curriculum in Dairy Manufactures; second term; 1 credit; 1 three-hour laboratory period. Fee $1.50. Deposit $0.50.

ENGLISH LANGUAGE AND LITERATURE

It is the aim of this department to teach the student to appreciate literature and to express his thoughts with clearness. He is taught that the essential part of any effective composition, whether oral or written, is thought well organized and well expressed; that to comprehend clearly and to feel strongly what he has to say, are the indispensible conditions of making others comprehend and feel. In all the collegiate courses in English the work is correlated with that offered in the other departments, to bring it into harmony with the spirit of the institution. The Oregon Agricultural College participates in a number of intercollegiate debates and oratorical contests; and the department offers elective courses in expression and public speaking, designed to give preparation for this work.

Equipment. The College Library, with its excellent resources in general and technical literature, including all the leading periodicals, affords abundant opportunity for the student in English to carry on his studies with profit and satisfaction. In addition, the opportunities for expression and appreciation afforded by the student activities and organizations—forensic, dramatic, literary, and journalistic—are exceptionally attractive.

COURSES

Eng 101. English Composition. Review of principles of rhetoric; critical study of examples of English prose; practice in written and oral composition; frequent conferences between instructor and student as aids in meeting individual needs.

Prerequisites: Three units of English earned in standard high schools. Required in all schools except Engineering (freshman year) and in Engineering (junior year); first term; 3 credits; 3 recitations. Text: Lomer and Ashmun, The Study and Practice of Writing English. Scott and Denney, Paragraph Writing. Greever and Jones, Century Handbook of Writing.

Eng 102. English Composition. Continuation of Eng 101. Reading, practice writing, and discussion to cultivate clearness of thought and accuracy of expression. The work is modified and adapted to meet the requirements of the students in the several schools. Standard periodicals form the basis of a part of the work.

Prerequisite: Eng 101. Required in all schools except Commerce and Engineering (freshman year) and in Engineering (junior year); second term; 3 credits; 3 recitations. Texts: Jelliffe, Handbook of English Composition. Greever and Jones, Century Handbook of Writing.

Eng 103. **Technical Composition.** Classes organized according to schools or curricula. Material for practice writing is worked out in active cooperation with instructors in technical courses. Literature of contemporary interest is used as a basis for discussion and writing.

Prerequisite: Eng 102. Required in all schools except Commerce and Engineering (freshman year) and in Engineering (junior year); third term; 3 credits; 3 recitations. Text, Greever and Jones, Century Handbook of Writing.

Eng 105. **Business Correspondence.** The business letter in detail, special attention being given to letters of application, letters of inquiry and information, circular letters, letters of complaint, sales letters, follow-up letters, and collection letters.

Required in Commerce; freshman year; second term; 3 credits; 3 recitations. Text: Lewis, Business English.

Eng 106. **Advanced Business English.** The preparation of manuscript and copy for the printer; study of the advertising circular, students being required to plan and complete circulars for various advertising purposes; practice of writing informal trade agreements, specifications, and other business forms; study of postal regulations.

Prerequisite: Eng 105 or equivalent. Required in Commerce; freshman year; third term; 3 credits; 3 recitations.

Eng 201. **Advanced English Composition.** The object of this course is to develop facility and clarity of expression. Intensive study of the popular essay, the biography, and the criticism, as special forms of exposition; exercises in analysis and in the application of the mechanics of expository outlines; long and short themes.

Prerequisites: Eng 101, 102, 103. Elective; sophomore or junior year; any term; 3 credits; 3 recitations. Text: Gardiner, The Forms of Prose Literature.

Eng 211. **The Essay and the Novel.** Study of structure of novel and essay; essay and novel as expression of national life and thought; the growth of the economic, critical, historical, and personal essay, and the larger categories of fiction; the novel of manners, of character, the problem novel, and the romantic novel. Class and individual assignments, lectures, and reports.

Prerequisites: Eng 101, 102, 103, or equivalent. Elective; sophomore or junior year; first term; 3 credits; 3 recitations. Texts: Canby, Facts, Thought, and Imagination. Cross, Development of the English Novel.

Eng 212. **The English Drama.** Study of the structure and technique of the drama considered as a distinct literary type; differentation of tragedy, comedy, melodrama, and farce; study of plot, character, and setting, with reading and analysis of plays for verification of principles derived. Reports, oral and written, on plays and topics assigned for collateral reading.

Prerequisite: Eng 101, 102, 103, or equivalent. Elective; sophomore year; second term; 3 recitations; 3 credits. Text, Woodbridge, The Drama: Its Laws and Its Technique.

Eng 213. **The Short-Story.** Reading, study, and composition of the short-story as a distinct literary type; analysis of three prescribed stories emphasizing respectively plot, character, and setting. Lectures, recitations, tests.

Prerequisites: Eng 101, 102, 103, or equivalent. Elective; sophomore or junior year; third term; 3 credits; 4 recitations. Text: Ashmun, Modern Short-Stories.

Eng 321. **The History of English Literature.** A general outline course of the history of English literature. The aim is to cultivate an appreciation of what is excellent in quality and form. Masterpieces representing the best thought and form are studied in class or assigned to students for careful reading and reports. Field of study: English literature from its beginning to the end of the eighteenth century.

Elective; junior year; first term; 3 credits; 3 recitations. Text: Moody and Lovett, History of English Literature.

Eng 322. **The History of English Literature.** A continuation of Eng 321. Study of the master minds of the ninteenth century.

Lectures, readings, and discussions; critical reports on assigned topics required from all the students.

Elective; junior year; second term; 3 credits; 3 recitations. Text: Moody and Lovett, History of English Literature.

Eng 323. **Contemporary English Literature.** English literature of the late nineteenth and twentieth centuries.

Elective; junior year; third term; 3 credits; 3 recitations. Text: Cunliffe, Century Readings in English Literature.

Eng 431. **American Literature.** Study of the growth and development of literature in our country. Emphasis placed on the study of writers of the ninteenth century, including Irving, Cooper, Bryant, Poe, Hawthorne, Longfellow, Holmes, and Lowell, and others. Lectures; class study; class reading; reports on assigned topics; essays.

Elective; junior or senior year; first term; 3 credits; 3 recitations. Text: Wendell and Greenough, History of Literature in America.

Eng 432. **American Literature.** A continuation of Eng 431. The metropolitan writers; literature in the South; literature in the West; present schools and tendencies. Lectures; class room work; reports; essays.

Elective; junior or senior year; second term; 3 credits; 3 recitations. Text: Wendell and Greenough, History of Literature in America.

Eng 433. **American Literature.** A continuation of Eng 432. Study of American writers of the twentieth century, including the more important literature of the Great War. Contemporary American periodical literature. Lectures; assigned readings; reports; essays.

Elective; junior or senior year; second term; 3 credits; 3 recitations. Text: Patte, American Literature Since 1870.

Eng 251. **Practical Public Speaking.** Practice in presentation of the various forms of public addresses; voice training; study of gesture, bearing, and the elements of ease and force in presentation; practice in rapid preparation and impromptu delivery of speeches on topics of current interest; drill in parliamentary procedure.

Elective; first term; 3 credits; 3 recitations. Text: Robinson, Effective Public Speaking.

Eng 252. **Extempore Speaking.** Practice in the presentation of the various forms of addresses; speeches on topics of special interest to the students; criticism as to method of selection, organization, and presentation.

Elective; junior year; second term; 3 credits; 3 recitations. Text: Baker, Forms of Public Address.

Eng 253. **Argumentation.** Practical work in brief-drawing, collection and handling of evidence, and debating. Each student prepares several debates, constructs briefs, and participates in class-room debates.

Elective; third term; 2 credits; 2 recitations. Text: Foster, Argumentation and Debate.

Eng 351. **Oratory.** This course is intended as special preparation for those who wish to enter oratorical work. Lectures on the theory of oratory; preparation of original orations; class-room exercises; personal conferences and criticism.

Elective; first term; 1 credit; 1 recitation. Text: Shurter, The Rhetoric of Oratory.

Eng 264. **Expression.** Literary interpretation, including analysis, memorizing, and rendering of selected masterpieces of prose and poetry; correction of erroneous habits of speech, of artificiality, affectation, and self-consciousness.

Elective; first term; 2 credits; 2 recitations.

Eng 265. **Expression.** Continuation of Eng 264.

Elective in Home Economics; second term; 2 credits; 2 recitations.

Eng 464, 465. **Dramatic Interpretation.** Advanced literary interpretation; training in delivery of masterpieces of prose and poetry; interpretative study of Shakespeare and modern drama; presentation of scenes from plays; bodily expression; impersonation.

Prerequisites: Eng 264, 265. Elective; first and second terms; 2 credits each term; 2 recitations.

Eng 467, 468. **Story Telling.** Study of children's literature; analysis and reproduction of short stories suitable for the nursery, the kindergarten, and the primary grades.

Elective in Home Economics; senior year; second and third terms; 1 credit each term; 1 recitation.

Eng 481, 482, 483. **Seminar.** Reading and analysis of the recognized masterpieces of continental European literature in approved translations. French, Italian, Spanish, Scandinavian, Teutonic, Russian, and Polish.

Elective; three terms; 2 credits each term; 2 recitations.

Eng 10. **Special Composition.** If a student, in his work in any department, submits papers notably deficient in English, either his dean or his major professor will require him to take Eng 10. It consists wholly of theme work and consultations, and is continued in each case as long as the needs of the student require. This course carries no credits.

Any term; 2 recitations.

Eng 11. **Vocational English.** Review of English grammar; identification and analysis of sentences; punctuation; written and oral exercises in spelling; development of the sentence sense, the avoidance of the common grammatical errors in expression, and the production of legible manuscript. Collateral reading: Fowler, Starting in Life. Choosing a Career. Richardson, The Girl Who Earns Her Own Living.

Vocational curricula; first year; first term; 3 credits; 3 recitations. Text: Baskerville and Sewell, English Grammar.

Eng 12. **Vocational English.** Composition writing; the letter as a medium in business problems; oral and written reproduction of short articles; narrative themes; explanation of processes and mechanisms. Books assigned for reading: Rollins, What Can a Young Man Do? Alden, Women's Ways of Earning Money.

Vocational curricula; first year; second term; 3 credits; 3 recitations. Text: Baskerville and Sewell, English Grammar.

Eng 13. **Vocational English.** Composition writing continued; identification of the parts of speech; classification and use of clauses; drill in punctuation; construction of outlines; discussion of current events. Collateral reading: Hale, What Career?

Vocational curricula; first year; third term; 3 credits; 3 recitations. Text: Huntington, Elements of English Composition.

Eng 21. **Advanced Vocational English.** Study of the structure and function of phrases; syntax; punctuation; reports on newspaper and magazine articles; drafting of simple specifications; composition, oral and written. Collateral reading: Shaw, The Outlook for the Average Man. Abbot, Women and Industry.

Vocational curricula; second year; first term; 3 credits; 3 recitations. Text: Webster, English for Secondary Schools.

Eng 22. **Advanced Vocational English.** Composition work continued; writing of advertisements; sales talks; informal debates; summaries. Collateral reading: Reid, Courses for the Coming Men. Cooley, Shelter and Clothing.

Vocational curricula; second year; second term; 3 credits; 3 recitations. Text: Webster, English for Secondary Schools.

Eng 23. **Advanced Vocational English.** Study of the modifications of the verb; drill on sequence of tenses; correction of forms of false syntax; review of punctuation; reports on business experiences; letter writing. Collateral reading: Kauffman, The Efficient Age. MacLean, Wage Earning Women.

Vocational curricula; second year; third term; 3 credits; 3 recitations. Text: Gardiner, Kittredge, and Arnold, Manual of Composition and Rhetoric.

Eng 31. **Junior Secondary English.** The object of offering this course is to afford students not having completed the English work of the third year of the secondary school an opportunity to take that work. The course, closely conforming to the State Course of Study, involves intensive study and practice in the four forms of discourse. Writing of exercises in narration and description; study of the incentive moment, plot, climax, conclusion; oral narration; description in narration; point of view; effectiveness in description; choice of words; synonyms; oral description. Collateral reading: Bolton, Lives of Poor Boys Who Became Famous.

Vocational curricula; third year; first term; 3 credits; 3 recitations. Text: Brooks, English Composition.

Eng 32. **Junior Secondary English.** Study of exposition; the logical definition; outlines; the paragraph; the summary; the review; business letters; telegrams; oral exposition; daily and weekly

themes in exposition; oral exposition. Collateral reading: Latimer, Girl and Woman.

Vocational curricula; third year; second term; 3 credits; 3 recitations. Text: Brooks, English Composition.

Eng 33. **Junior Secondary English.** Argument. Study of the proposition; the brief; the proof; deduction and induction; fallacies; refutation; persuasion; elements of debate; grammar and diction; review of all forms of discourse. Collateral reading: Daniels, The Furnishing of a Modest House. Smith, What Can Literature do for Me?

Vocational curricula; third year; third term; 3 credits; 3 recitations. Text: Brooks, English Composition.

ENTOMOLOGY

The courses in Entomology are planned to acquaint the student with the proper relationship of Entomology to general Agriculture; to prepare students for specialized entomological training; and to meet the needs of students from other departments who desire work in Entomology. Two fields of advanced work in Entomology are offered: Applied Entomology and Forest Entomology.

The general courses in Economic Entomology are designed to provide the student with a practical grasp of the principles of applied Entomology including a knowledge of the commoner pests, their general habits and life-history, and the application of the most approved principles in insect pest control.

Forest Entomology includes a general consideration of the main insect groups and their relationships. An intensive study of the main groups of forest insects is made and practical investigation of forest areas is assigned in order to teach the type and extent of insect infestation, methods in forest surveys and in report writing, and the principles underlying forest insect control.

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.

Equipment. This department occupies rooms on the third floor of Agricultural Hall. The laboratories are well equipped for teaching general Entomology and fairly well equipped for advanced research work. In the museum are 3650 determined species of insects, largely Oregon forms. A display of Ricker mounts and St. Louis boxes containing life-history studies of injurious forms and their typical injury are available. The entomological library is a source of considerable pride, being well supplied with old volumes, complete sets of entomological periodicals, reports, and memoirs. Through the courtesy of the librarian of the U. S. Department of Agriculture students may borrow entomological literature from the library of the Department of Agriculture and the Congressional Library.

COURSES

Ent 301. **Principles of Economic Entomology.** Designed primarily for general agricultural 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.

Prerequisite: Zool 130. Required in Agriculture(plant group); junior year; first term; 4 credits; 3 recitations; 1 three-hour and 1 two-hour laboratory periods. Fee $1.00. Text: Osborn, Agricultural Entomology. Mr. Chamberlin and Mr. Black.

Ent 303. **General Entomology.** Collection, preservation, and elementary classification of insects. In field collecting, the economic aspects are emphasized. Life-history studies, the use of breeding cages, and practice in compiling field and laboratory notes receive attention.

Prerequisite: Ent 301. Required in Entomology; junior year; third term; 4 credits; 3 recitations; 1 three-hour and 1 two-hour laboratory periods. Fee $3.00. Text: Comstock, Manual for the Study of Insects. Mr. Chamberlin and Mr. Black.

Ent 404. **Advanced Economic Entomology.** An intensive consideration of specific insect pests of farm, garden, and orchard, particularly of the Northwest, and their control; latest developments in insecticides and their uses.

Prerequisite: Ent 301. Required in Entomology; elective to others; senior year; first term; 3 credits; 3 recitations or lectures; 1 three-hour laboratory period. Text: Sanderson, Insect Pests of Farm, Garden, and Orchard. Professor Lovett and Mr. Black.

Ent 321. **Forest Entomology.** An intensive study of insects injurious to forests and forest products, forest insect surveys, and the principles of forest insect control.

Required in Forestry; junior year; second term; 4 credits; 2 recitations; 2 three-hour laboratory periods. Fee $1.00. Mr. Chamberlin.

Ent 422. **Forest Entomology.** A continuation of Ent 321.

Required in Forestry; senior year; first term; 3 credits; 2 recitations or lectures; 2 two-hour laboratory periods. Fee $2.00. Mr. Chamberlin.

Ent 331. **Beekeeping.** 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. Trips are made to commercial apiaries for the benefit of those interested in commercial beekeeping.

Elective; third term; 3 credits; 1 recitation; 2 three-hour laboratory periods. Fee $3.00. Text: Phillips, Beekeeping. Mr. Black.

Ent 351. **Insect Morphology.** A study of the fundamentals of external, internal, and comparative morphology of insects including adaptive structures and their utility, and wing veination. Especial attention is given to structures used in classification.

Prerequisite: Ent 301. Required in Entomology; junior year; second term; 3 credits; 1 recitation; 2 three-hour laboratory periods. Fee $2.00. Mr. Lathrop.

Ent 452. **Insect Ecology.** A study of insects in relation to their surroundings, considering the interrelations of insects with each other and with other animals and plants; influence of climate and other natural phenomena upon the distribution and activities of insects and application of these factors to Economic Entomology.

Prerequisite: Ent 303. Required in Entomology; senior year; second term; 5 credits; 3 recitations; 3 two-hour laboratory periods. Fee $3.00. Text: Folsom, Entomology with Reference to its Biological and Economic Aspects. Mr. Lathrop.

Ent 453. **Insect Taxonomy.** The collection, preservation, and classification of insects of the several orders; intensive study of insects of selected groups; attention to phylogenetic relationships and distribution.

Prerequisite: Ent 307. Required in Entomology; senior year; third term; 5 credits; 2 recitations; 3 three-hour laboratory periods. Mr. Lathrop.

Ent 473. **The Teaching of Entomology.** Designed primarily for high school teachers. The principles of Entomology including materials and methods.

Prerequisites: Bot 471 and Zool 472. Elective to seniors and graduate students; third term; 5 credits; 4 lectures; 2 three-hour laboratory periods. Fee $2.00.

Ent 481, 482, 483. **Seminar.** Reading, discussing, and abstracting of the leading articles on entomological topics as they appear in current scientific literature.

Elective to senior and graduate students in Entomology; three terms; 1 credit. Professor Lovett.

Ent 691, 692, 693. **Advanced Thesis and Research Methods.** A course offered only for graduate students. Students select problems in Applied Entomology; problems in Insect Ecology; monographic problems, etc.; emphasis on methods in reasearch.

Elective to graduate students; three terms; credits to be arranged. Professor Lovett.

Ent 14. **Injurious Insects.** A practical course in Entomology, including the life-history, habits, and control of insects of farm garden and orchard.

Required in Agriculture Vocational Curriculum; third term; 3 credits; 2 recitations; 2 two-hour laboratory periods. Fee $1.00. Text: Osburn, Economic Entomology. Mr. Chamberlin.

HISTORY

A knowledge of history is fundamental to leadership. Courses in History are required in the School of Commerce and are offered in all other schools of the College. The instruction is given largely by lectures, supplemented by the reference facilities of the College Library.

COURSES

Hist 111. **European History.** This course includes the study of European history from the time of Louis XIV to the banishment of Napoleon.

Elective; first term; 3 credits; 3 recitations. Text: Robinson and Beard, The Development of Modern Europe, Vol I. Professor Horner.

Hist 212. **Europe Since 1815.** This course comprises a study of Europe from the fall of Napoleon to the present time.

Required in Commerce; sophomore year; third term; 3 credits; 3 recitations. Professor Horner.

Hist 411. **History of the British Empire.** A coherent view of the larger factors influencing national development from early times to the British Empire of today.

Elective; senior year; first term; 3 credits; 3 recitations. Professor Horner.

Hist 121. **Early American History.** From the discovery of America to the Civil War.

Elective; first term; 3 credits; 4 recitations. Professor Horner.

Hist 122. **Recent History of the United States.** History of the United States of America from the Civil War to the present time. Collateral with the text, such matters as the negro problem, the industrial revolution, capitalism and socialism, free silver, direct government, woman suffrage, the new nationalism, imperialism, the labor movement, the Panama-Colombia question, our relations with Europe and the Latin-American republics, are discussed.

Required in Commerce; freshman year; second or third term; 3 credits; 4 recitations. Professor Horner.

Hist 421. **American Diplomatic History.** History of the chief events in American foreign affairs; changed policies of our Government; character studies of the leading men in our diplomatic work; application of our experience to present problems.

Elective; senior year; third term; 3 credits; 3 recitations. Professor Horner.

Hist 331. **History of South America.** The course includes the history of South America, Mexico, and Central America. Assigned reading in College Library.

Elective; junior year; second term; 3 credits; 4 recitations. Professor Horner.

Hist 241. **History of Oregon.** Five epochs of Oregon history; early explorations; fur trade and colonization; provisional government; territorial government; state government; Indian folk-lore; history of Oregon literature.

Required in Commerce; sophomore year; second term; 3 credits; 4 recitations. Text: Horner, Oregon. Professor Horner.

Hist 351. **Representative Men and Women.** Study of American leaders of thought and action. Students may elect fifty percent of their allotment of biographical reference work, subject to approval of the instructor. Lectures, assigned reading, and discussion.

Elective; junior year; third term; 3 credits; 4 recitations. Professor Horner.

Hist 10. **United States History.** Brief course covering the leading events of our history.

Elective in Vocational curricula; first term; 3 credits; 4 recitations. Text: Channing, United States History. Professor Horner.

MATHEMATICS

COURSES

Math 101. **Counting Room Mathematics.** Short methods of calculation, use of logarithms, slide rule, comptometer, and other standard calculating devices.

Required in Commerce; freshman year; first or second term; 3 credits; 3 recitations. Assistant Professor Kent.

Math 102. **Mathematics of Investment.** Preliminary review of logarithms and series with application to compound interest; problems relating to sinking funds, depreciation, amortization of bonds, annuities, building and loan associations, and the national farm loan organizations.

Prerequisite: One year of high school Algebra and one year of Plane Geometry; Math 101 advised. Required in Commerce; open to others qualified; freshman year; second or third term; 3 credits; 3 recitations. Assistant Professor Kent.

Math 103. **Elements of Statistical Methods.** Recitations and laboratory practice in the study of statistical data obtained by estimate, observations and enumeration; representation of data by tables and graphs. Other topics studied are: probability, variation, dispersion, skewness, frequency curves, and smoothing of statistics.

Required in Commerce; open to others qualified; freshman year; first or third term; 3 credits; 1 recitation; 1 lecture; 2 two-hour laboratory periods. Assistant Professor Kent.

Math 301. **Mathematics of Insurance.** The aim of this course is to explain and illustrate the applications of mathematics to fundamental problems of life insurance with stress upon financial problems.

Prerequisites: Math 102, 103, or one year of College Mathematics. Elective; third term; 3 credits; 3 recitations. Assistant Professor Kent.

Math 111. **Plane Trigonometry.** This course includes functions of acute angles, right angles, functions of any angle, relations between functions, inverse functions, trigonometric equations,

and oblique triangles. Considerable time is devoted to the deduction of trigonometric formulae, study of trigonometric identities, and the solution of practical problems.

Required in Engineering; freshman year; any term; 4 credits; 5 recitations. Associate Professor Beaty, Assistant Professors Tartar, Beard, and Kent, and Mr. Van Groos.

Math 121. **Algebra.** A course for freshmen in Engineering whose work in Math 111 discloses need of further preparation in Algebra before continuing their Mathematics.

Required of Engineering students found deficient in Algebra; freshman year; second term; 4 credits; 5 recitations. Assistant Professor Tartar.

Math 131. **Elementary Analysis.** Review of Algebra including radical expressions, quadratic equations, binominal theorem, progressions, and complex numbers. In Analytical Geometry the point, straight line, circle, conic sections, and some of the higher plane curves are studied. Considerable time is given to the plotting of curves in both rectangular and polar co-ordinates.

Required in Engineering, Forestry, and Mines; freshman year; second or third term; 4 credits; 4 recitations. Associate Professor Beaty, Assistant Professors Tartar and Kent, and others.

Math 132. **Elementary Analysis.** A continuation of Math 131. Subjects studied are functions and graphs, formula for differentiation, tangents and normals, maxima and minima, rates, and standard forms of integration.

Required in Engineering, Forestry, and Mines; freshman year; first or third term; 4 credits; 5 recitations. Associate Professor Beaty, Assistant Professors Tartar, Beard, and Kent, and others.

Math 141. **Plane Analytic Geometry.** Offered for students who enter the sophomore year deficient in Analytic Geometry. The topics studied are the point, the straight line, polar co-ordinates, transformation of co-ordinates, the circle, conic sections, tangents, diameters, discussions of general equations of the second degree, problems in loci, and higher plane curves.

Required in Engineering of students deficient in Analytic Geometry; sophomore year; first term; 4 credits; 5 recitations. Assistant Professor Beard.

Math 251. **Differential Calculus.** Differentation; simple applications of the derivative; successive differentation; maxima and minima; points of inflection; curve tracing; differentials; rates; change of variable; indeterminate forms; partial differentiation.

Required in Engineering; sophomore year; first or second term; 4 credits; 5 recitations. Professor Johnson, Associate Professor Beaty, and Assistant Professor Kent.

Math 252. **Integral Calculus.** Standard forms of integrations; integration of trigonometric differentials; constant of integration; the definite integral; integration of rational fractions.

Required in Engineering; sophomore year; first or second term; 4 credits; 5 recitations. Professor Johnson, Associate Professor Beaty, and Assistant Professor Kent.

Math 253. **Integral Calculus.** A continuation of Math 152. Integration by rationalization; integration as a process of summation with applications; successive integration; ordinary differential equations.

Required in Engineering; sophomore year; third term; 4 credits; 5 recitations. Professor Johnson, Associate Professor Beaty, and Assistant Professor Kent.

Math 361. **Differential Equations.** Study of the solution of ordinary and partial differential equations which the Engineering student is likely to encounter.

Prerequisites: Math 151, 252, 253. Elective; junior year; first term; 3 credits; 3 recitations. Professor Johnson.

Math 371. **Method of Least Squares.**

Prerequisites: Math 151, 152, 153. Elective; junior year; second term; 2 credits; 2 recitations. Professor Johnson.

Math 381. **Hyperbolic Functions.**

Prerequisites: Math 151, 152, 153, 161. Elective; junior or senior year; third term; 2 credits; 2 recitations. Professor Johnson.

Math 21, 22, 23. **Algebra.** Drill in the fundamental operations; use of parentheses; special rules of multiplication and division; factoring; solutions of equations by factoring; highest

common factor; least common multiple; fractions; equations containing fractions; ratio and proportion; graphical representation; linear system; square root; radicals; graphical solution of equations in one unknown.

Required in Mechanic Arts Vocational Curriculum; three terms; 4 credits each term; 5 recitations. Assistant Professor Tartar.

Math 24. **Algebra.** Quadratic equations; graphs of quadratic equations; system solved by quadratics; theory of exponents; irrational equations; variation and imaginaries.

Required in Engineering of freshmen who enter with but one year of Algebra; second or third term; 4 credits; 5 recitations. Assistant Professors Tartar and Beard.

Math 81. **Plane Geometry.** The first two books of Plane Geometry.

Required of freshmen entering deficient in first semester of Plane Geometry; first or second term; 4 credits; 5 recitations. Assistant Professor Tartar and others.

Math 82. **Plane Geometry.** A continuation of Math 81, covering the last three books of Plane Geometry. Many original exercises are studied.

Required of freshmen who enter deficient in second semester of Plane Geometry; second or third term; 4 credits; 5 recitations. Assistant Professor Tartar and others.

Math 85. **Plane Geometry.** This course and Math 86 are arranged for freshmen who enter deficient in the second semester of Plane Geometry, and who desire two terms for making up the work. The two courses are equivalent to Math 82.

Elective; freshman year; first term; 2½ credits; 3 recitations. Assistant Professor Tartar.

Math 86. **Plane Geometry.** A continuation of Math 85.

Elective; freshman year; second term; 1½ credits; 2 recitations. Assistant Professor Tartar.

Math 88. **Solid Geometry.**

Required in Engineering of freshmen who are deficient in second semester of Solid Geometry; first or third term; 3 credits; 4 recitations. Assistant Professor Beard.

Math 91, 92, 93. **Commercial Arithmetic.** A review of all the essential operations. Stress on short methods; daily drills in rapid calculation; computation of estimates; partnership settlements, etc.

Required in Commerce Vocational Curriculum; first year; three terms; 3 credits each term; 5 recitations. Assistant Professor Tartar.

Math 94. **Shop Arithmetic.** Thorough drill in the principles of Arithmetic, with special application to shop problems of all sorts.

Required in Mechanic Arts Vocational Curriculum; first or third term; 4 credits; 5 recitations. Assistant Professor Tartar.

MODERN LANGUAGES

The department of Modern Languages offers four years of work in French, German, and Spanish.

In harmony with all other courses of the College, the final aim of the instruction is practical use in the various spheres of activity and pursuits of life. While the disciplinary and cultural values of language study are duly recognized and emphasized, the predominant purpose is the development of personal power for social service.

A certain amount of specified work in a language is definitely required in some departments. In other departments, German, French, or Spanish may be taken as electives, and when so taken, the student receives full credit for any work completed. Elementary classes will be formed at the beginning of the first term and at the beginning of the second term. The third term offers no elementary courses. Students who had considerable language work in high schools should consult with the head of the department before registering for a language course.

French

ML 111. **Elementary French.** Drill in the rudiments of the language; oral and written exercises; idiomatic translations; reading of easy selections.

Elective; any year; first or second term; 3 credits; 3 recitations.

ML 112. **Elementary French.** Continuation of ML 111.

Prerequisite: ML 111 or equivalent. Elective; any year; second term; 3 credits; 3 recitations.

ML 113. **Elementary French.** Continuation of ML 112.

Prerequisite: ML 112 or equivalent. Elective; any year; third term; 3 credits; 3 recitations.

ML 211, 212, 213. **Intermediate French.** Advanced grammar; irregular verbs; subjunctive mood; reading of narrative, descriptive, and historical prose; oral exercises on texts read.

Prerequisites: ML 111, 112, 113, or equivalent. Elective; any year; three terms; 3 credits each term; 3 recitations.

ML 311, 312, 313. **Advanced French.** Reading of scientific, technical, and miscellaneous texts with corresponding composition and conversation.

Prerequisites: ML 211, 212, 213, or equivalent. Elective; any year; three terms; 3 credits each term; 3 recitations.

ML 411, 412, 413. **Advanced French.** Planned especially for prospective teachers of French and others desiring to acquire a comprehensive knowledge of the language. Advanced composition; reading of advanced texts of various classes of literature; oral and written reports.

Prerequisites: ML 311, 312, 313, or equivalent. Elective; any year; three terms; 3 credits each term; 3 recitations.

Spanish

ML 121. **Elementary Spanish.** Essentials of vocabulary and grammar; auxiliaries, regular and radical changing verbs, and some of the more common irregular forms; reading of easy prose selections; idiomatic translations; much oral drill and conversation.

Elective; any year; first or second term; 3 credits; 3 recitations.

ML 122. **Elementary Spanish.** Continuation of ML 121.

Prerequisite: ML 121 or equivalent. Elective; any year; second term; 3 credits; 3 recitations.

ML 123. **Elementary Spanish.** Continuation of ML 122.

Prerequisite: ML 122 or equivalent. Elective; any year; third term; 3 credits; 3 recitations.

ML 221, 222, 223. **Intermediate Spanish.** Grammar continued; irregular verbs; subjunctive mode in all its uses; idiomatic phrases; social and epistolary forms; reading of suitable texts; oral and written exercises.

Prerequisites: ML 121, 122, 123, or equivalent. Elective; any year; three terms; 3 credits each term; 3 recitations.

ML 321, 322, 323. **Advanced Spanish.** Reading of commercial texts; commercial correspondence; descriptive and technical prose; much conversation.

Prerequisites: ML 221, 222, 223, or equivalent. Elective; any year; three terms; 3 credits each term; 3 recitations.

ML 421, 422, 423. **Advanced Spanish.** Especially for prospective teachers and others desiring a comprehensive knowledge

of Spanish. Advanced composition; reading of advanced texts of the various classes of literature; oral and written reports.

Prerequisites: ML 321, 322, 323, or equivalent. Elective; any year; three terms; 3 credits each term; 3 recitations.

German

ML 131. **Elementary German.** Rudiments of the language; oral and written exercises; translation of easy selections.

Elective; first or second term; 3 credits; 3 recitations.

ML 132. **Elementary German.** Continuation of ML 131.

Prerequisite: ML 131 or equivalent. Elective; second term; 3 credits; 3 recitations.

ML 133. **Elementary German.** Continuation of ML 132.

Prerequisite: ML 132 or equivalent. Elective; third term; 3 credits; 3 recitations.

ML 231, 232, 233. **Intermediate German.**

Prerequisite: ML 131, 132, 133, or equivalent. Elective; three terms; 3 credits; 3 recitations.

ML 331, 332, 333. **Advanced German.**

Prerequisite: ML 131, 132, 133, 231, 232, 233, or equivalent. Elective; three terms; 3 credits each term; 3 recitations.

ML 431, 432, 433. **Advanced German.**

Prerequisite: ML 331, 332, 333, or equivalent. Elective; three terms; 3 credits each term; 3 recitations.

PHYSICS

Endeavor is made to adapt each course in Physics to the needs of those taking it. The text used by the Engineering and Agricultural students was written especially for technical students. "Physics of the Household" was likewise written especially for students in Home Economics.

While in all courses the practical side is emphasized both in lecture and in laboratory work, the theory of the subject, in so far as it deals with the fundamental principles of Physics, receives the attention which its importance demands.

Since Physics and Chemistry are basic sciences, it would seem that every College graduate should have had at least a general course in each of these subjects. The department accordingly urges that at least all students who have not had Physics in high school elect some work in Physics after consultation with the head of the department. Those expecting to teach Physics in high schools should by all means take several courses.

Equipment. The general laboratory has a good working equipment, the apparatus being such as to allow a qualitative or quantitative verification of the most important laws. In addition to the general laboratory, the department has two special laboratories, one equipped for electrical measurements and the other for photometry. A partial list of the apparatus found in these follows: standard cells, shunts, capacities and inductances; secohmeter; Leeds and Northrup potentiometer; Siemens and Halske standard ammeters, voltmeter, and portable testing set; Paul unipivot testing set; storage cells of large current capacity for ammeter and wattmeter calibrations; 10½-inch spark coil; Gaede pump; large Tesla coil; Leeds and Northrup photometer fitted with lamp rotator, rotating sector, Lummer-Brodhum screen, and Bechstein flicker photometer.

In the general library are many recent Physics texts and allied works, as well as a number of Physics periodicals, which are available to all.

COURSES

Phys 200. **Household Physics.** A brief descriptive course with such applications as are of greatest interest to students in Home Economics.

Required in Home Economics; sophomore year; first or third term; 5 credits; 2 lectures; 3 recitations; 2 two-hour laboratory periods. Fee $2.00. Text: Lynde, Physics. Mrs. Monk.

Phys 201, 202. **General Physics.** A course in General Physics covering the subjects of mechanics, heat, sound, light, electricity, and magnetism.

Prerequisite: Geometry. Optional in Agriculture and Commerce; sophomore year; first and second terms; 3 credits each term; 2 lectures; 2 recitations; 1 two-hour laboratory period. Fee $2.00 each term. Text: Anderson, Physics. Professor Anderson.

Phys 111, 112, 113. **Engineering Physics.** A course in mechanics, heat, sound, light, electricity, and magnetism.

Prerequisite: Trigonometry. Required in Engineering; (freshman year) and in Forestry and Mines (sophomore year); three terms; 3 credits each term; 2 lectures; 2 recitations; 1 two-hour laboratory period. Fee $2.00 each term. Text: Anderson, Physics. Professor Anderson.

Phys 210. **Advanced Engineering Physics.** An advanced course in heat, light, and electricity.

Prerequisites: Phys 111, 112, 113. Required in Chemical Engineering; elective to advanced students; sophomore year; third term; 3 credits; 2 lectures; 2 recitations; 1 two-hour laboratory period. Fee $2.00. Assistant Professor Bevan.

Phys 231, 232, 233. **Electrical Physics.** An advanced course in heat, light, and electricity.

Prerequisites: Phys 111, 112, 113; Math 111. Required in Electrical Engineering; elective to advanced students; sophomore year; three terms; 3 credits each term; 1 lecture; 2 recitations; 1 three-hour laboratory period. Fee $2.00 each term.

Phys 351. **Heat and Light.** An advanced course, taking up the phenomena of heat and light in detail, including recent discoveries.

Elective; first term; credit to depend on work done. Fee $2.00. Assistant Professor Bevan.

Phys 352. **Electricity and Magnetism.** An advanced course, with suitable practice in the laboratory.

Elective; second term; credit to depend on work done. Fee $2.00. Assistant Professor Bevan.

Phys 353. **Wireless Telegraphy.** A study of electric waves, their measurement, and their application to practical wireless telegraphy.

Elective; third term; 3 credits. Fee $2.00. Assistant Professor Bevan.

Phys 261, 262. **Photography.** Intended for students planning to make use of the camera in their chosen fields. Practical use of the camera; photographic processes; enlarging and reproduction work; photography of colored objects; making of lantern slides; theory and practice of color photography; and other topics. (Limited to about twenty students each term.)

Elective; first and second terms; 3 credits each term; 1 lecture; 1 recitation; 2 two-hour laboratory periods or their equivalent in field work. Fee $3.00 each term.

Phys 290. **Descriptive Astronomy.** A brief elementary course in Astronomy designed to acquaint the student with the most important facts relating to the heavenly bodies, and to make him an intelligent observer of the more common astronomical phenomena. Descriptive rather than mathematical in character.

Elective; third term; 2 credits; 2 recitations or equivalent in lectures and observational work, depending upon weather conditions. Text: Young, Astronomy.

ZOOLOGY AND PHYSIOLOGY

The work in Zoology and Physiology is adapted, so far as possible, to the particular needs of students in Agriculture, Forestry, Pharmacy, and Home Economics. Opportunity is offered, to those who desire it, to receive training for teaching Zoology, Physiology, or Nature Study in public schools; for development of the game and food resources of the State; or for the pursuance of studies in the field of research. In connection with the curriculum in Pharmacy, the required work forms a valuable pre-medical course of study.

Equipment. The laboratories of the department occupy rooms on the third floor of Agricultural Hall. As an adjunct to the laboratory facilities a set of nursery troughs for fish-cultural purposes has been erected on the campus adjacent to the zoological laboratory. The museum, in addition to a beautiful collection of native birds, contains a small collection of mounted mammals, the Ladd collection of bird skins, and numerous miscellaneous specimens.

Zool 101, 102. **General Zoology.** A general introduction to advanced courses in the department; designed also for students who, without intending to pursue the subject further, desire a general view of zoological work and its problems; lectures and laboratory work supplemented by collateral reading and field investigation.

Required in Pharmacy; elective to others; freshman year; first and second terms; 3 credits each term; 2 lectures; 1 three-hour laboratory period. Fee $1.50 each term. Deposit $1.00. Assistant Professor Chandler.

Zool 103. **Comparative Vertebrate Zoology.** The structure and significance of the various organs of vertebrates with particular reference to man.

Prerequisite: Zool 101, 102. Required in Pharmacy; elective to others; freshman year; third term; 3 credits; 2 lectures; 1 three-hour laboratory period. Fee $1.50. Deposit $1.00. Assistant Professor Chandler.

Zool 211, 212, 213. **Physiology and Anatomy.** A study of the structure, significance, and function of the human body, with ref-

erence to the animal body in general. The laboratory course includes some work upon the gross anatomy and the histology of the various tissues and organs of a typical mammal; also includes experiments and demonstrations with foods, the study of blood, nerve, muscle, reactions, etc.

Prerequisites: Zool 101, 102, 103, or equivalent. Required in Pharmacy; sophomore year; three terms; 3 credits each term; 2 lectures; 1 three-hour laboratory period. Fee $1.50 each term. Deposit $1.00. Assistant Professor Chandler.

Zool 312, 313. **Embryology and Histology.** The origin and development of the animal body; the elementary structure of the adult organs and tissues; a study of the chick and pig with reference to other animals and man; practice in micro-technique, killing, fixing, imbedding, and sectioning.

Prerequisites: Zool 103 or equivalent. Elective; junior or senior year; second and third terms; 4 credits each term; 2 lectures; 2 three-hour laboratory periods. Fee $2.00 each term. Deposit $3.00. Professor Sykes.

Zool 321. **General Physiology.** The object of this course is to give the Home Economics student knowledge of life processes and anatomical relationships which are necessary in maintaining the highest efficiency of the human mechanism; the chief functions of the human body; laws of health falling within the province of the physiologist.

Required in Home Economics; junior year; any term; 5 credits; 3 lectures; 2 three-hour laboratory periods. Fee $1.50. Deposit $1.00.

Zool 322. **Neuro-Physiology.** An advanced course dealing with the nervous system and its conservation.

Prerequisite: Zool 321 or equivalent. Elective; second term; 3 credits; 2 lectures; 1 three-hour laboratory period. Deposit $3.00. Assistant Professor Chandler.

Zool 323. **Nutritional Physiology.** An advanced course dealing with the process of digestion, absorption, nutrition, secretion, and excretion.

Prerequisite: Zool 321 or equivalent. Elective; third term; 3 credits; 2 lectures; 2 two-hour laboratory periods. Deposit $3.00.

Zool 130. **Principles of Economic Zoology.** The facts and conditions that render animal life an important factor in economic problems, prefaced by a study of animal forms, distribution, and habits; the physiological functions of the body. Lectures, laboratory work, and collateral reading.

Required in Agriculture; freshman year; any term; 5 credits; 3 lectures; 2 three-hour laboratory periods. Fee $1.50. Deposit $1.00. Mr. Wight.

Zool 233. **Animal Ecology.** A dynamic interpretation of animal life; contact in the field with vital economic problems, agricultural and sylvan.

Prerequisite: Zool 131. Elective; sophomore or junior year; third term; 3 credits; 1 lecture; 2 three-hour laboratory periods. Fee $1.50. Deposit $1.00. Mr. Wight.

Zool 331. **Taxidermy and Zoological Collecting.** Laboratory and field course in the methods involved in preparation of skins and the preservation of museum specimens; study and practice in the methods involved in field survey work.

Prerequisite: Zool 131 or equivalent. Elective in Agriculture and Forestry; first term; credits to be arranged. Deposit $1.00. Mr. Wight.

Zool 341. **Aquiculture.** Lecture, laboratory, and field course dealing with the problems and methods of sea-farming and fish culture; the hatching and rearing of fish and other aquatic food animals; the planting and care of oyster and clam beds; various methods of production and preparation for market.

Prerequisite: Zool 131 or equivalent. Elective in Agriculture and Forestry; junior or senior year; first term; 3 credits; hours to be arranged. Fee $1.50. Deposit $1.00. Professor Sykes.

Zool 342. **Aquiculture.** A continuation of Zool 341, dealing primarily with fresh water problems.

Elective in Agriculture and Forestry; junior or senior year; second term; 3 credits; hours to be arranged. Fee $1.50. Deposit $1.00. Professor Sykes.

Zool 343. **Aquiculture.** A continuation of Zool 342, dealing with practical problems and experimental methods.

Prerequisite: Zool 342. Elective in Agriculture and Forestry; junior or senior year; third term; 3 credits; hours to be arranged. Fee $1.50. Deposit $1.00. Professor Sykes.

Zool 441. **Game Propagation.** A laboratory and reading course, supplemented by field work in propagation of food animals of the field and forest; breeding and protection of game birds and mammals; methods of conducting game reservations; comparative study of game laws.

Elective in Agriculture and Forestry; first term; 2 credits; 1 lecture; 1 laboratory period; hours to be arranged. Fee $0.25. Professor Sykes.

Zool 351. **Genetics.** A lecture course dealing with the general principles of heredity, and the factors involved in variation and inheritance; fundamental principles of breeding with respect to their application both to the human and to the domestic forms.

Required in Agriculture; junior year; any term; 3 credits; 3 lectures; 1 two-hour laboratory period. Fee $0.25. Professor Sykes.

Zool 451. **Racial Biology.** Designed not only for the general student but also for students particularly interested in the modern biological background of sociological, psychological, and ethical theory.

Elective; first term; 3 credits; 3 lectures. Fee $0.25. Professor Sykes.

Zool 361. **Animal Parasites.** Study of such parasitic forms as flukes, tapeworms, nematodes, fish "lice," cattle ticks, etc., that affect the health of man and of domestic and food animals. The study is primarily ecological, the object being to obtain a knowledge of the conditions which produce parasitism, to the end that by intelligent control, diseases and economic losses may be prevented.

Prerequisites: Zool 101, 130, or equivalent. Elective; junior or senior year; first term; 3 credits; hours to be arranged. Fee $1.00. Deposit $1.00. Assistant Professor Chandler.

Zool 363. **Protozoology.** Study of microscopic animals with a view to their relation, beneficially or injuriously, to man, particular attention being paid to such pathogenic forms as blood spores and enteric parasites, with some reference to soil protozoans and water animalcules.

Prerequisite: Zool 101 or equivalent. Elective; third term; 3 credits; hours to be arranged. Fee $1.00. Deposit $1.00. Assistant Professor Chandler.

Zool 472. **The Teaching of Zoology.** A course in principles and materials of Zoology for high-school teachers and others. Coordinates with Bot 471 and Ent 473.

Elective; second term; 5 credits; 3 lectures; 2 three-hour laboratory periods. Fee $1.50. Deposit $1.00. Professor Sykes and Mr. Wight.

Zool 681, 682, 683. **Zoological Seminar.** Current problems in Zoology.

Elective; senior or graduate year; three terms; 1 credit each term; 1 hour of attendance. Professor Sykes.

Zool 691, 692, 693. **Research and Thesis.** Opportunity is given students who desire to specialize in Zoology and Physiology to take up work not given in the regular courses, or to undertake the investigation of special problems. Either major or minor work for the master's degree may be carried in this department. It is the policy of the department to allow the student to develop his own initiative in the selection of a problem, and in outlining and conducting his investigations, with the cooperation of the department.

Elective; senior or graduate year; three terms; credits to be arranged. Deposit $3.00. Professor Sykes.

CHEMICAL ENGINEERING

RALPH KEMPTON STRONG, Ph.D., Professor of Industrial Chemistry

Chemical Engineering has become a necessary science in the economic management of many of the industries of life. The present need in this country to create new industries to supply products of manufacture formerly imported from abroad, has emphasized the demands upon chemistry and chemical engineering.

The curriculum in Chemical Engineering is arranged so that attention is given during the first two years to fundamental work in Chemistry, both general and analytical, Physics, and Mathematics. In the last two years, specialized work is taken in applied Chemistry, and Mechanical and Electrical Engineering. The student is recommended to broaden this work by courses in English, French, and Economics.

The courses in Industrial or Applied Chemistry given in connection with Chemical Engineering are arranged as follows: (1) Engineering Chemistry; (2) Industrial Inorganic Chemistry (two courses); (3) Industrial Organic Chemistry (two courses); (4) Electrochemical Industries; (5) Processes of Industrial Chemistry (three courses). After performing a limited number of standard experiments in Industrial Chemistry, the student is assigned special problems, thus enabling him to follow a given line more fully. Problems are studied as to: (1) Raw Materials; their valuation and treatment. (2) Process; chemical control and types of apparatus employed in technical work. (3) Products of Manufacture; their purity and uses. Methods of analysis and the processes involved in large-scale manufacture are examined as described in current literature.

Local chemical industries are regularly visited for the purpose of observing operation on a large scale. Companies engaged in this work have been most generous in their cooperation.

Graduates obtain positions in chemical works, either in the laboratory or plant; in analytical and consulting laboratories; as Federal, state, or municipal chemists; or as teachers in high schools and colleges.

Students pursuing this curriculum are well prepared to teach Chemistry and Physics, and may elect Vocational Education, thus enabling them to fulfill the State Teachers' Requirements.

Equipment. The department is located on the first floor of the Mines building, where facilities are provided for laboratory practice in industrial chemical work. The laboratory is equipped with cold and hot water, gas, steam, compressed air, vacuum pumps, precision balances, scales for heavy weighing, kettles, filters, direct and alternating electric current, drying ovens, hot plates, furnaces, and supplies of regulation apparatus and chemicals. The standard reference works and texts in all branches of Chemistry are kept in the laboratory for constant use, and the best technical magazines are likewise consulted. The student is given every opportunity to keep informed in regard to current developments. The library has complete sets of many of the chemical journals.

DEGREE CURRICULUM IN CHEMICAL ENGINEERING

Freshman Year

	Term		
	1st	2d	3d
Chemistry, General and Qualitative (Chem 104, 105, 106, 131)	5	5	5
Physics (Phys 111, 112, 113)	3	3	3
Mathematics (Math 111, 131, 132)	4	4	4
Engineering Drawing (ME 111)	3		
Descriptive Geometry (ME 113)		3	
Forge Work (IA 253)			3
Gymnasium (Ph Ed 111, 112, 113)	½	½	½
Military Science and Tactics	1	1	1
	16½	16½	16½

Sophomore Year

Chemistry, Qualitative and Quantitative (Chem 233, 234, 244)	5	5	5
Crystallography (Geol 214)	3		
Mineralogy (Geol 215)		3	
Physics, Advanced (Phys 210)			3
Mathematics (Math 251, 252, 253)	4	4	4
English (Eng 101, 102, 103)	3	3	3
Gymnasium (Ph Ed 211, 212, 213)	½	½	½
Military Science and Tactics	1	1	1
	16½	16½	16½

Junior Year	Term 1st	2d	3d
Engineering Chemistry (ChE 311)	5		
Industrial Inorganic Chemistry (Ch E 321, 322)		5	5
Organic Chemistry (Chem 226, 227, 228)	5	5	5
Materials Testing Laboratory (ExE 313)	2		
Power Laboratory (ExE 334)		2	
Hydraulic Laboratory (ExE 335)			2
French (ML 111, 112, 113)	3	3	3
Military Science and Tactics	2	2	2
	17	17	17
*Pedagogy	3	3	3

Senior Year			
Industrial Organic Chemistry (ChE 431, 432)	5	5	
Industrial Electrochemistry (ChE 441)			5
Process of Chemical Engineering (ChE 451, 452, 453)	3	3	3
Physical Chemistry (Chem 481, 482, 483)	3	3	3
Technical Electricity (EE 251)	3		
Electrical Machinery (EE 252)		3	
Pyrometery and Metallography (ExE 481)			3
Introduction to Economics (ES 391)	3		
Political Science (PS 301 or 302)		3	
Business Organization (BA 331)			3
	17	17	17
*Pedagogy	3	3	3

* Students wishing to take courses preparatory to teaching may substitute Pedagogy for an equivalent credit (except Economics, Political Science, and Business Organization) on approval of the head of the department.

COURSES

ChE 311. **Engineering Chemistry.** A course of lectures and laboratory work on the subjects of fuel, combustion, refractories, lubricants, boiler feed waters, iron, steel, alloys, cements.

Required in Chemical Engineering; junior year; first term; 5 credits; 2 lecture periods; 2 three-hour laboratory periods. Fee $7.50. Deposit $2.50. Professor Strong.

ChE 321, 322. **Industrial Inorganic Chemistry.** The principal inorganic industries studied in lectures and in the laboratory from the viewpoint of modern scientific and applied chemistry. The laboratory instruction is arranged to develop ability on the part of the student to carry on independent work with confidence. The principles involved in the problems are carefully studied before the laboratory manipulation is attempted.

Required in Chemical Engineering; junior year; second and third terms; 5 credits each term; 2 lecture periods; 2 three-hour laboratory periods. Fee $7.50 each term. Deposit $2.50 each term. Professor Strong.

ChE 431, 432. **Industrial Organic Chemistry.** Lectures and laboratory work covering the chief organic branches of industrial chemistry. Emphasis is given to the fundamental principles involved in the various processes studied. The topics studied include: mineral, vegetable, and animal oils; soap; glycerine; rubber; leather; explosives; sugar; starches; destructive distillation of coal and wood.

Required in Chemical Engineering; senior year; first and second terms; 5 credits each term; 2 lecture periods; 2 three-hour laboratory periods. Fee $7.50 each term. Deposit $2.50 each term. Professor Strong.

ChE 441. **Electrochemical Industries.** Applications of the electric current to the manufacture of chemical materials by electrothermal reactions studied by means of lectures and laboratory work. The following topics are treated: sodium hydroxide and chlorine, hypochlorites, chlorates, perchlorates, oxygen, hydrogen, carbide, graphite, carbon disulfide, phosphorus, sodium, magnesium, aluminum.

Required in Chemical Engineering; senior year; third term; 5 credits; 2 lectures; 2 three-hour laboratory periods. Fee $7.50. Deposit $2.50. Professor Strong.

ChE 451, 452, 453. **Process of Chemical Engineering.** Principles of, and current practice in, the standard processes used in industrial chemical operations.

Required in Chemical Engineering; senior year; three terms; 3 credits each term; 1 lecture; 2 two-hour laboratory periods. Fee $4.50 each term. Professor Strong.

INDUSTRIAL JOURNALISM

FRANCIS LAWRENCE SNOW, Professor
CHARLES JARVIS McINTOSH, Assistant Professor

Courses in Industrial Journalism are offered to meet the demand of students who wish to take positions on farm and trade journals, newspapers, and other publications, especially where writing on industrial subjects such as Agriculture, Home Economics, and Engineering is required. The instruction is intended also to meet the needs of a larger group of persons, who as farmers, county agricultural and home demonstration agents, teachers, and others, will write for the press. The courses taught are thoroughly practical and form a valuable asset for those who aim to become leaders of community enterprises in almost any capacity.

Industrial Journalism does not displace fundamental work in English but supplements it by giving the technique of journalistic writing.

Students are urged to write for local and state newspapers, farm journals, and other publications; and, when they have received sufficient training, to submit material to national periodicals. The Oregon Countryman and the O. A. C. Barometer, student campus publications, give excellent opportunity for those studying Industrial Journalism to obtain practical experience. Students taking courses IJ 204 and IJ 314 are assigned news "beats" and are expected to cover them regularly. Instruction is based largely on writing and criticism. Much timely agricultural and other material is sent regularly to Oregon papers.

COURSES

IJ 200. **Elementary Industrial Journalism.** Intended primarily to give students the fundamental principles of news writing. Prepares them for writing technical articles on subjects pertaining to Agriculture, Home Economics, Engineering, Commerce, etc. Methods of obtaining news of various types, news sources, and technique, are carefully considered. Required as a condition of eligibility for leading positions on the staffs of student publications.

Elective; sophomore, junior, or senior year; any term; 3 credits. Fee $1.00. Text: Spencer, News Writing. Professor Snow.

IJ 310. **Industrial Journalism.** Continuation of work in course IJ 200. Principles of journalism are applied to the treatment of

industrial subjects. Types of news stories are studied, feature stories being given special consideration.

Prerequisite: IJ 200. Elective; junior or senior year; second term; 3 credits; 3 lecture periods. Fee $1.00. Professor Snow.

IJ 320. **Editing.** Copy reading, head writing, proof reading, and make-up. Actual experience is given in editing copy for publication. Training is offered that fits students for the work of putting out campus publications.

Prerequisites: IJ 200, 310. Elective; junior or senior year; third term; 3 credits; 3 lecture periods. Text: Hyde, Newspaper Editing. Assistant Professor McIntosh.

IJ 330. **Technical Journalism.** Students are required to prepare copy on subjects pertaining to Agriculture, Engineering, Commerce, Home Economics, etc., and to submit it for publication in farm journals, trade journals, and other periodicals. A study is made of the demands of these publications for material of a more or less technical nature. Attention is given to illustration. Preparation of publicity matter is considered.

Elective; junior or senior year; third term; 3 credits; 3 lecture periods. Fee $1.00. Professor Snow.

IJ 440. **Editorial Writing.** 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 is given attention.

Prerequisite: IJ 320. Elective; senior year; first term; 3 credits; 3 lecture periods. Fee $1.00. Assistant Professor McIntosh.

IJ 204, 314, 334. **Journalism Practice I, II, and III.** Laboratory practice for courses IJ 200, IJ 310, IJ 330, respectively. Opportunity is given to put the fundamental principles of Journalism into practice. In IJ 204 and IJ 314, news "beats" are assigned and students receive practical experience in reporting. Special assignments are also given. Students are expected to write for publication. These courses offer students the advantages of training and experience in connection with instruction in corresponding courses.

Elective; 2 credits each. Fee $1.00. Professor Snow.

LIBRARY

IDA ANGELINE KIDDER, A.B., B.L.S., Librarian
LUCY MAY LEWIS, A.B., B.L.S., Assistant Librarian and Reference Librarian
LILLIAN MABEL GEORGE, B.L.S., In charge Continuations Department
HELEN McFARLAND, B. A., Cataloguer
BERTHA HERSE, B. S., In charge Circulation Department
LILA GRACE DOBELL, B. S., Assistant
GRACE REA SANDON, Assistant
ETHEL ALLEN, B. S., Assistant
ELLA MAY UTTERBACK, Assistant
HELEN GARDNER, Assistant

Equipment. The library is housed in a beautiful new building well adapted to library uses. The reading and general reference room is large and well-lighted, extending entirely across the building. It is supplied with about 600 reading magazines and newspapers. The books of the library consist of about 36,000 volumes of standard works of history, biography, engineering, agriculture, natural science, general literature and reference, about 3000 reports and other publications from the agricultural colleges and experiment stations of all the states, with about 50,000 bulletins and pamphlets. The library is a designated depository of United States Government publications, of which it has about 7,000 volumes. Over 2,000 of these were received as a gift from the library of the late United States Senator Dolph.

Practical use of the books has led to the establishment of small laboratory collections kept in the rooms of the following departments: General Chemistry, Agricultural Chemistry, Animal Husbandry, Agronomy, Horticulture, Botany, Forestry, Bacteriology, Zoology, Pharmacy, Commerce, and Civil, Chemical, Mechanical, Electrical, and Mining Engineering. Each department library is in charge of the head of the department, to whom application must be made for the use of the books.

All books are classified and catalogued according to the Dewey decimal system.

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 any reasonable time. Students desiring access to the shelves for special study,

must be recommended to the Librarian by the head of the department under whom they are studying.

The reference library in the reading room consists of encyclopedias, dictionaries, and standard reference books in the different departments of study. A collection of books for cultural reading is also kept in the reading room. In the same room, and accessible to all readers, is the card catalogue of the general library, including cards for the books of the department libraries. The catalogue includes both authors and subjects under one alphabet on the dictionary plan; there is also in the reading room, a card catalogue of the publications of the U. S. Department of Agriculture, and a card index to the publications of the state experiment stations.

Lib 100. **Library Practice.** This course teaches, by means of lectures and practical problems, the use of catalogues, indexes, and reference books, such as dictionaries, encyclopedias, atlases, handbooks of general information, handbooks of history, statistics, quotations, etc. It also teaches the use of periodical indexes for both general and technical periodicals.

Freshman year; one term; 1 credit; 1 lecture; 1 recitation; 1 one-hour laboratory period. Mrs. Kidder (lectures) and Miss Lewis (recitations).

MILITARY SCIENCE AND TACTICS

WILLIAM JASPER KERR, D.Sc., President of the College
COLONEL JOSEPH KEPNER PARTELLO, Infantry, U. S. Army, Professor of Military Science and Tactics; Commandant of Cadets
COLONEL WILLIAM FLETCHER SHARP, Field Artillery, U. S. Army, In charge of Field Artillery Unit
MAJOR EDWARD CORNELIUS HANFORD, Field Artillery, U. S. Army, Assistant Field Artillery Unit
CAPTAIN GOTTFRIED WELLS SPOERRY, Infantry, U. S. Army, Supply Officer and Acting Quartermaster
CAPTAIN ERNEST FLAGG AYRES, Corps of Engineers, U. S. Army, Instructor in Military Engineering
CAPTAIN EDWARD JAMES GULLY, Field Artillery, U. S. Army, Instructor in Field Artillery
CAPTAIN EVERETT BROCKWAY WETTENGEL, Field Artillery, U. S. Army, Instructor in Field Artillery
CAPTAIN DENNIS HAYES, U. S. Army, Retired, Acting Adjutant
FIRST LIEUTENANT MAYLON EDWARD SCOTT, Field Artillery, U. S. Army, Instructor in Field Artillery
REGIMENTAL SUPPLY SERGEANT FRANK GEORGE HUNTER, Infantry, U. S. Army, Assistant Instructor
FIRST SERGEANT JOSEPH ETIENNE ROBERGE, Infantry, U. S. Army, Assistant Instructor
FIRST SERGEANT FRANK JOHN HILTON, Field Artillery, U. S. Army, Assistant Instructor
SERGEANT LEWIS ELLSWORTH, Infantry, U. S. Army, Assistant Instructor
SERGEANT DORY LOUIS SOWERS, Field Artillery, U. S. Army, Assistant Instructor
CORPORAL RICHARD GORGENSON, Field Artillery, U. S. Army, Assistant Instructor.

The Act of Congress establishing the Agricultural and Mechanical colleges was passed in the midst of the Civil War; it inaugurated the cadet corps and required military training of all able-bodied male students. The object of this requirement was to provide well-trained officers for citizen soldiers. The Act was supplemented on June 3, 1916, by another Act of Congress, passed in the midst of the World War, 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 the college, 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. At the Oregon Agricultural College the War Department established in the fall of 1917 both the Basic and Advanced courses of the Reserve Officers

mutation of subsistence (board) at the rate of twelve dollars a month throughout the entire two years during which they are members of this section of the Corps. This includes the period of vacations, except when the student is in attendance at the regular summer camp.

Summer Training Camps. The summer training camps, which are held at strategic locations in different parts of the country, are designed to bring together, for six weeks of intensive training in the field, the R. O. T. C. units of the different colleges of the country. Students of the Oregon Agricultural College report to the Presidio, San Francisco, California. Members of the Basic courses are required to attend at least one summer camp, and members of the Advanced courses are required to meet the same condition. Every student, therefore, who completes the full four years of training in the R. O. T. C., must have attended at least two summer camps. Students incur no expense in attending these military camps, as the U. S. Government pays all necessary expenses incident to traveling to and from the camp and living at the camp, including railroad fare, board, lodging, clothing, and equipment.

Requirements. Four hours of military instruction each week are required in the two years of the Basic courses, and five hours each week in the two years of the Advanced courses of the R. O. T. C. The wearing of the military uniform is required during hours set apart for military instruction. All members of the Corps are required to protect from loss or damage the arms and equipment issued to them by the U. S. Government through the Military department.

Military Credits for Graduation. Twelve credits in military training are required of men students for graduation. This involves the usual three credits for each of the first two years and the six credits of the third year of military training at the College. Six additional units in the senior (fourth) year may also be counted as credits toward graduation. A total of eighteen military credits are thus available toward graduation.

Adjustment of Credits. Students transferring to the Oregon Agricultural College with advanced credits from other educational institutions of equal rank will not be exempt from the military

requirements, but will be required to offer an equivalent of credits for the back military credits represented or accumulated.

Students presenting credentials for military work taken at other educational institutions, or for service in the U. S. Army, may be given credit for such work in so far as it is deemed equivalent to the requirements of this institution.

If for any reason a student is relieved from the military requirements, except as specified in this section, other credits must be substituted for the military credits.

Cadet Officers. The cadet officers and the non-commissioned officers of the College regiment are selected at the close of each year, for the year following, by the Commandant, with the approval of the President of the College. Their appointment and promotion, together with their relative rank and standing in each grade, are determined on a basis of individual military efficiency and merit. Commissioned officers are selected from the senior class or from such students as have had three or more years of training. Sergeants are selected from seniors or juniors, or from such students as have had two or more years of military training, and corporals from juniors or sophomores, or such students as have had one or more years of training. The traditions of the College have made it a high honor to stand well in the military department, and the student commanders of the cadets have invariably been men of superior attainments and character.

Equipment. The Military department has a thoroughly modern and adequate equipment for its work. The College Armory is one of the largest and most efficient in the country, affording, in addition to offices for the Military staff, arms rooms, and assembly hall, ample space for drill in rainy weather.

New Enfield rifles are supplied to all men in infantry training. Springfield rifles are available for gallery practice.

The new Field Artillery unit has a five-section battery of American three-inch guns, complete. It has also one 155 mm. G. P. F. rifle; one 155 mm. howitzer; one 4.7 rifle; and one French, one British, and one American 75 mm. gun. For transport, the department has two heavy tractors, two light tractors, four mules, and ninety horses.

The department has fire-control instruments and signal corps and engineer corps equipment sufficient to outfit an entire battalion of field artillery. All the modern appliances and equipment that were developed for field artillery on field service during the War, including periscopes, range finders, telescopes, and flash batteries, are included in the new equipment.

The machine gun equipment includes four heavy Browning machine guns, and four Browning automatic rifles. For housing the artillery, modern gun sheds have been erected on the campus adjoining the new military stables that will accommodate the artillery horses and mules. These stables are built in approved military fashion and open onto a well-drained and completely equipped artillery corral.

A Distinguished Institution. By order of the War Department, as a result of comparative inspections, the Oregon Agricultural College has been designated a Distinguished Institution in respect to its military training. This distinction places it in the class with such institutions as Harvard and Yale, and the great land-grant colleges such as the universities of Illinois, Wisconsin, Minnesota, and California.

COURSES

MS 111, 112, 113. **Infantry.** First year Basic courses.

Optional; freshman year; three terms; 1 credit each term; 4 hours a week.

MS 211, 212, 213. **Infantry.** Second year Basic courses.

Optional; sophomore year; three terms; 1 credit each term; 4 hours a week.

MS 311, 312, 313. **Infantry.** First year Advanced courses.

Optional; junior year; three terms; 2 credits each term; 5 hours a week.

MS 411, 412, 413. **Infantry.** Second year Advanced courses.

Elective; senior year; three terms; 2 credits each term; 5 hours a week.

MS 121, 122, 123. **Field Artillery.** First year Basic courses.

Optional; freshman year; three terms; 1 credit each term; 4 hours a week.

MS 211, 222, 223. **Field Artillery.** Second year Basic courses.

Optional; sophomore year; three terms; 1 credit each term; 4 hours a week.

MS 321, 322, 323. **Field Artillery.** First year Advanced courses.

Optional; junior year; three terms; 2 credits each term; 5 hours a week.

MS 421, 422, 423. **Field Artillery.** Second year Advanced courses.

Elective; senior year; three terms; 2 credits each term; 5 hours a week.

MS 131, 132, 133. **Signal Corps.** First year Basic courses.

Optional; freshman year; three terms; 1 credit each term; 4 hours a week.

MS 231, 232, 233. **Signal Corps.** Second year Basic courses.

Optional; sophomore year; three terms; 1 credit each term; 4 hours a week.

MS 331, 332, 333. **Signal Corps.** First year Advanced courses.

Optional; junior year; three terms; 2 credits each term; 5 hours a week.

MS 431, 432, 433. **Signal Corps.** Second year Advanced courses.

Elective; senior year; three terms; 2 credits each term; 5 hours a week.

MS 141, 142, 143. **Engineer Corps.** First year Basic courses.

Optional; freshman year; three terms; 1 credit each term; 4 hours a week.

MS 241, 242, 243. **Engineers Corps.** . Second year Advanced courses.

Optional; sophomore year; three terms; 1 credit each term; 4 hours a week.

MS 341, 342, 343. **Engineers Corps.** First year Advanced courses.

Optional; junior year; three terms; 2 credits each term; 5 hours a week.

MS 441, 442, 443. **Engineers ..Corps.** Second year Advanced courses.

Elective; senior year; three terms; 2 credits each term; 5 hours a week.

PHYSICAL EDUCATION FOR MEN

ALFRED DAVID BROWNE, M. D., Director
HOMER W. HARGISS, Professor of Intercollegiate Athletics
....., Instructor
....., Instructor

Because physical health determines capacity for efficiently carrying out the work which a student prepares for in college, Physical Education in modern educational institutions is being emphasized more and more every year.

Physical Education in the Oregon Agricultural College includes the following subjects: (1) Gymnastics, Individual and Class Instruction; (2) Athletics, Intercollegiate and Intramural; (3) Physical Examinations; (4) Corrective Exercises; (5) Hygiene; (6) Physical-Training subjects not classified; (7) Teachers' courses in Physical Education.

Individual Instruction. This is given in the form of advice based upon the health examination of the student. Health examinations are given during the freshman and sophomore years. The examinations are utilized for the purpose of finding defects whose proper treatment may add to the health efficiency of the student. Advice given at this time is recorded and when a student reports for conference the advice on file is followed up. Students found with remediable physical defects are given special corrective work.

Physical Training. Students may devote themselves to any one of the three following phases of physical training: intercollegiate athletics, intramural athletics, gymnasium.

Intercollegiate Athletics. All intercollegiate athletics is under the jurisdiction of the Board of Control, composed of three members of the faculty, five members of the student body, and one alumnus. Representative teams are organized for baseball, basketball, cross-country running, football, soccer, tennis, track, and wrestling. Participation during the whole season of sport is accepted for one semester credit in Physical Education.

Intramural Athletics. The work in intramural athletics is supervised by a council consisting of the Director of Physical Education, Colonel of the Cadet Regiments, President of the Stu-

dent Body, Editor of the Student Barometer, Professor of Intercollegiate Athletics, and a representative elected by each of the following groups: Fraternities, Clubs, and Independents.

The department has organized the work in intramural athletics so that every student who is physically fit to take part in athletic contests has the opportunity to participate in scheduled competitive sports. "Every O. A. C. man an athlete" is the slogan of the College.

For credit, attendance of two hours each week is required of all freshmen and sophomores who elect this work. The activities include: **fall sports** (football, soccer, cross-country running, field events, swimming, tennis, fall baseball); **winter sports** (basketball, track and field events; wrestling, boxing, hand ball, volley ball, swimming, and advanced gymnastics); **spring sports** (baseball, track and field events, tennis, swimming, and cross-country running).

Gymnasium Classes. Individual and class instruction. Students who are unsuited (determined by examination and tests) to work in intercollegiate or intramural athletics are assigned to gymnasium classes, in which the students are given work for correcting defects, and for developing physical efficiency and muscular power.

Attendance of two hours each week is required of all freshmen and sophomores carrying gymnasium work.

Teachers Courses in Physical Education. The State of Oregon now has a law requiring courses in Physical Education in the public schools. The law takes effect September 1, 1919, under the supervision of the State Superintendent of Public Instruction. A great demand for part- and full-time Physical Education teachers has been created by the adoption of this law. In its endeavor to render every possible assistance to the schools of the State, and to give prospective teachers and physical directors every opportunity to meet the requirements of the physical education program, the College will conduct Teachers' Courses during the regular College year and the summer session. Before registering for Teachers' Courses students should consult with the Director of Physical Education in the main office of the Men's Gymnasium Building.

Summary of Oregon Physical Education Law. The new State law requiring Physical Education in the public schools of Oregon

provides for a minimum of one hundred minutes a week, or an average of twenty minutes daily, for physical training activities in elementary schools. A committee of experts appointed by the State Superintendent of Public Instruction is at work formulating a program and regulations to meet the requirements of the law. The law requires the work to consist of activities promoting physical vigor, physical posture, bearing, and mental and physical alertness, self control, disciplined initiative, sense of patriotic duty, and spirit of cooperation under leadership.

Equipment. The new Men's Gymnasium, two units of which have been completed, is equipped with all modern gymnastic apparatus and facilities for properly carrying on the work in physical education and recreation. The main floor, 90x150 feet in dimensions, furnishes ample space for the most efficient type of gymnasium and indoor athletic work. Features of the new gymnasium are: the large floor space providing for three regulation basketball courts, the large lobby for receptions, locker rooms and lockers to accommodate the men students, shower baths and dressing rooms, rooms for accommodating the varsity teams. The new east wing provides an auxiliary gymnasium for apparatus work, three handball courts, two wrestling and boxing rooms, and one large room for volley ball.

The O. A. C. field for athletics comprises a new quarter-mile track, varsity football field with bleachers for seating eight thousand spectators, one varsity baseball field, and six football, soccer, and baseball fields for intramural athletics.

Eight tennis courts have been constructed which afford adequate facilities for tennis.

The Armory, one of the largest of its kind in the United States, provides fine facilities for winter training during inclement weather in football, track, baseball, and various other sports. An indoor clay track, banked at the turns, which is but eight laps to the mile, and the extension clay floor space and high dome roof furnish facilities for conducting large winter track and field meets.

The swimming pool in Shepard Hall is under the direction of the department and is supervised by an instructor.

The Treasurer's receipt for the $1.00 physical-training fee each term entitles the holder to full privileges of the department

including: health examination, strength tests, locker, use of shower rooms, towels and soap, athletic fields, gymnasiums, etc.

COURSES

Physical Training

PhEdM 111, 112, 113. **Physical Training.** Required; freshman year; three terms; ½ credit each term; two periods.

PhEdM 211, 212, 213. **Physical Training.** Required; sophomore year; three terms; ½ credit each term; two periods.

PhEdM 311, 312, 313. **Physical Training.** Elective; junior year; three terms; ½ credit each term; 2 periods.

PhEdM 411, 412, 413. **Physical Training.** Elective; senior or graduate year; three terms; one or two periods.

Hygiene and Public Health

PhEdM 121, 122, 123. **Hygiene.** These courses consist of a series of lectures on personal and impersonal hygiene, sources and modes of infectious diseases, immunity, industrial and occupational diseases, and the like. One term required of all freshmen and first year vocational students. No credit toward graduation is given for these courses.

Teachers' Courses

PhEdM 231. **Elementary and Advanced Gymnastics.** Theory and practice of gymnastics.

Elective; second or third term; one credit; two periods.

PhEdM 232, 233. **Methods of Coaching Athletic Teams.** Football, basketball, track, baseball, wrestling, swimming, and soccer.

Sophomore year; second and third terms; 2 credits each term; 2 lectures.

PhEdM 141. **Red Cross Certificate in Aid to the Injured (for men.)**

Elective; first term; 1 credit; 1 lecture.

PhEdM 241. **Physical Department Methods and Physical Diagnosis.** Physical examinations; detection of abnormal health conditions.

Prerequisite: PhEdM 111, 112, 113, 123. Elective; first or second term; sophomore year; 2 credits; 2 lectures.

PhEdM 244. **Kinesiology.** Essentials of anatomy as related to physical education; muscles and their action; analysis of the movements of the body and their mechanisms as a working basis for the selection of gymnastic exercises; lectures and demonstrations on skeleton and human body.

Prerequisite: A course in Anatomy. Sophomore year; second term; 2 credits; 2 lectures.

PhEdM 341. **Physio-therapy.** Elements of corrective exercises; methods and exercises used for corrective and therapeutic purposes. Types of variations from the normal, and the effect of corrective exercises.

Elective; second term; 2 credits; 2 periods.

PhEdM 361. **Practice Teaching.** Students work under supervision as assistants in various courses. Conferences are held by the instructors in charge, and students submit reports.

Elective; junior year; any term; 2 credits; 3 periods.

PhEdM 274. **Community Recreation.** A course designed to prepare for leadership in recreational activities.

Elective; first term; 2 credits; 2 periods.

PHYSICAL EDUCATION FOR WOMEN

EDNA AGNES COCKS, A.M., Professor
MARY ISABELLE BOVEE, Instructor
BLANCHE MacCLATCHIE, Instructor
RUTH WININGER, Instructor

Purpose. The aim of this department is to bring each student to her best possible physical condition, and by careful training to correct faulty posture, to aid in the formation of habits of hygienic living, to establish a normal condition in the circulatory and respiratory systems, to secure bodily vigor, and to attain a healthy and symmetrical development.

Special Corrective and Medical Gymnastics. Students who are shown by physical examination to be unfit for the work of the regular classes in gymnastics and sports, are assigned to corrective classes where the work is light and emphasis is laid on correct breathing and posture, relaxation, and rest; or, whenever necessary, students are given private work in medical gymnastics according to individual needs. The physical condition of each student is carefully diagnosed and supervised. The instructors encourage conferences concerning matters of health and personal hygiene and cooperate with the resident physician in all cases.

Requirements. Work in Physical Education is required of all freshmen and sophomores four periods a week, and of all juniors and seniors two periods a week, unless deferrment has been granted by the director or unless excuse is given for physical reasons.

Examinations. All students are required to take a medical examination by the College Physician, and a physicial examination by the Director of Physical Education.

Uniforms. The gymnasium uniform consists of an all-black suit, black hose, and black gymnasium shoes. The shoes can be purchased in Corvallis but the suits must be ordered at the Gymnasium office at the time of registration. The out-door uniforms consist of a short, full skirt, white middy, and sport shoes or tennis shoes. Ballet shoes are used in the aesthetic dancing classes.

Fee. A fee of one dollar a term is charged for use of baths, lockers, towels, medical supplies for injuries, etc.

Equipment. The Women's Gymnasium has adequate floor space for regular gymnasium work, a balcony running-track, and playing space for basketball and other games. On the main floor are found horizontal bars, vaulting horses and bucks, parallel bars, swinging rings, traveling rings, Swedish box, stall bars, climbing ropes, ladders, dumb bells, Indian clubs and wands. There are lockers and dressing rooms for all needs, and shower bath rooms where hot and cold water is available throughout the year. The women's athletic field provides for such games as basketball, field hockey, soccer, tennis, baseball, and crossball. The swimming pool in Shepard Hall is under the direction of the department, and is supervised by an instructor.

COURSES

Required

PhEdW 111, 112, 113. **Practical Gymnastics.** A course in Swedish Gymnastics combining floor and apparatus work with training in correct posture and breathing.

Required of women in degree curricula; freshman year; three terms; 1 credit each term.

PhEdW 114, 115, 116. **Corrective Gymnastics.** Required of women not able to carry the regular gymnasium work; freshman year; three terms; 1 credit each term.

PhEdW 117, 118, 119. **Light Gymnastics.** For women not able to carry the regular gymnasium work; freshman year; three terms; 1 credit each term.

PhEdW 211, 212, 213. **Practical Gymnastics.** Second year work similar to PhEdW 111, 112, 113.

Prerequisites: PhEdW 111, 112, 113, or equivalent. Required of women in degree curricula; sophomore year; three terms; 1 credit each term.

PhEdW 214, 215, 216. **Corrective Gymnastics.** Continuation of PhEdW 114, 115, 116.

Sophomore year; three terms; 1 credit each term.

PhEdW 217, 218, 219. **Light Gymnastics.** Continuation of PhEdW 117, 118, 119.

Sophomore year; three terms; 1 credit each term.

PhEdW 121. **Hygiene.** Lectures on personal hygiene and sanitation.

Required of women in degree curricula (freshman year) and in vocational curricula (first year); first term; 1 credit.

Elective

One credit will be allowed for three hours of work a week throughout the term in any of the following subjects or combinations of them. This time may be spent upon one, two, or three subjects, according to the student's option. Credit will not be thus divided, however, and the student must designate in which one subject she prefers the credit to be assigned. Courses are open to all women physically qualified.

PhEdW 331, 332, 333. **Advanced Gymnastics.**
Prerequisite: PhEdW 111, 112, 113 and 211, 212, 213.

PhEdW 334. **Fencing.**

PhEdW 335. **Dancing.** Elementary, intermediate, and advanced courses in aesthetic, folk, and gymnastic dancing.

PhEdW 336. **Games.** Archery; baseball; basketball; captain ball; cricket; hockey; soccer; tennis; group games.

PhEdW 337. **Swimming.**

PhEdW 338. **Hand Apparatus.** Indian clubs; dumb bells.

Theory of Physical Education

Theory courses are offered as electives or as a major or minor in Physical Education. Students desiring to teach Physical Education in connection with Home Economics should consult the head of the department in regard to special courses.

PhEdW 141. **First Aid to the Injured.** Red Cross Certificate course. Third term; 1 credit.

PhEdW 144. **Applied Anatomy and Kinesiology.** Study of muscles and their mechanism.
A course in Anatomy; first term; 2 credits.

PhEdW 241. Physical examination and the detection of abnormal health conditions.
Prerequisite: A course in Anatomy; third term; 3 credits.

PhEdW 341, 342, 343. **Massage and Orthopedics.** Theory and practice.

Prerequisite: PhEdW 144. Three terms; 2 credits each term.

PhEdW 151. **History of Physical Education.** First term; 1 credit.

PhEdW 152, 153. **Theory of Gymnastics.** Two hours a week in class room and three hours a week practice teaching. Second and third terms; 3 credits each term.

PhEdW 252, 253. **Advanced Theory of Gymnastics.** A continuation of courses PhEdW 152, 153. One hour in class room and six hours a week in practice teaching.

Prerequisites: PhEdW 152, 153. Second and third terms; 3 credits each term.

PhEdW 361, 362, 363. **Principles of Teaching.** A study of the psychology of leadership and of the selection of the forms of exercise adapted to ages and types of groups.

Prerequisites: PhEdW 252, 253; PhEdW 364, 365, 366, prerequisite or parallel. Three terms; 3 credits each term.

PhEdW 364, 365, 366. **Practice Teaching.** One hour a week in demonstrations, criticisms, and arrangement of materials.

Prerequisites: PhEdW 252, 253. Three terms; 3 credits each term; six hours a week practice teaching.

PhEdW 461. **Advanced Hygiene.** This course includes the theory of teaching Hygiene in public schools. Junior or senior year; third term; 2 credits.

PhEdW 271, 272, 273. **Practical Conduct of Play and Playground Administration.** One hour a week in class room, devoted to the psychology of play; one hour in the study of playground games and activities; two hours on city playgrounds under supervision. Third term; 3 credits each term.

PhEdW 11, 12, 13. **Practical Gymnastics.** Swedish gymnastics; floor and apparatus work; breathing and posture training.

Required of women in vocational curricula; first year; three terms; 1 credit each term.

PhEdW 21, 22, 23. **Practical Gymnastics.** Continuation of the work of PhEdW 11, 12, 13.

Prerequisites: PhEdW 11, 12, 13, or equivalent. Required of women in vocational curricula; second year; three terms; 1 credit each term.

SCHOOL OF MUSIC

WILLIAM JASPER KERR, D.Sc., President of the College

WILLIAM FREDERIC GASKINS, Mus.B., Director of the School of Music; Professor of Music

Graduate student Hillsdale College Conservatory; graduate student American Conservatory; graduate student of Karlton Hackett, Chicago; J. D. Mehan, New York; and F. X. Arens, New York.

GENEVIEVE BAUM-GASKINS, Instructor in Voice, Piano, and Organ

Leschetizky method. The Dunning System for Beginners. Graduate of American Conservatory, Chicago; student of William Nelson Buritt, New York; Karlton Hackett, Chicago; William Frederic Gaskins, Chicago; John Dennis Mehan, New York; John J. Hattseaedt, Chicago; and Wilhelm Middleschulte, Chicago.

GUSTAV DUNKELBERGER, Mus.B., Instructor in Piano and Theory of Music

Graduate of Bethel College Conservatory; graduate student American Conservatory, Chicago; student of Heniot Levy, Arthur Oluf Anderson, and Adolph Weidig, Chicago; pianoforte pupil of Richard Buhlig, a pupil of Leschetizky; pupil of Dr. Percy Goetschins; pupil of Louis Victor Saar.

CARL GRISSEN, Instructor in Stringed Instruments and Orchestration

Student of Edmund Singer, Stuttgart; Gustav Hollaender, Berlin, Carl Halir, Berlin; Samuel de Lange, Berlin; Joseph Mayer, Berlin.

HARRY LYNDEN BEARD, Instructor in Band Instruments and Band Conducting

Student of Herbert L. Clarke of Sousa's Band.

The School of Music is a self-supporting department of the Oregon Agricultural College organized in 1908, under the present management, by the Board of Regents. Recognizing the value of musical experience and education to the life of the College community, the College authorities made provision for establishing the School by providing ample room, instruments, and other necessary facilities. Individual and class instruction involves tuition, according to an authorized schedule, which the students pay. Members of the faculty of the School of Music, however, give gratuitous instruction to certain of the student musical organizations of the College, such as the Glee Club, the Madrigal Club, and the Band. In this manner, and through other College functions, the School of Music contributes in a large way to the life of the institution.

Work is offered in the following subjects: elements of music; history of music; interpretation; languages; music form and analysis; music pedagogics; song, oratorio, opera, and choral singing; organ playing, organ structure; piano playing, piano structure; sight reading; stage deportment; string instrument, wind instrument, and brass instrument playing; theory; harmony; counterpoint; composition; voice culture.

Any student in the Oregon Agricultural College with a satisfactory record in scholarship in his major courses may take at least one hour a day in music, by arrangement with the Director. The authority to register and assign all applicants for music instruction is vested solely in the Director, who must first be consulted for the arrangement of details of registration, or at any time when information is required that pertains to study in the various departments of the School of Music.

Students in the School of Music may enter classes in other departments of the College, and they are encouraged to take at least one course throughout the college year in addition to their regular music work.

Applicants may take complete or part courses. Those registering for the former are classified as "regular music," while the others are classified as "special music." "Special Music" students have the option of selecting such music studies as they desire by registering for them with the Director in the regular manner and at the catalogue rate of tuition.

Regulations. Young women whose homes are not in Corvallis are expected to live in the dormitories, where they are under the supervision of the Preceptress. Outside rooming and boarding places may be obtained, subject to the approval of the Dean of Women. The rates for board and room are listed elsewhere in detail.

Students registered for study in the regular courses of the Oregon Agricultural College School of Music are subject to the same rules and regulations as other students.

No student is permitted to omit lessons or practice without sufficient excuse, and no refund will be made for absence from lessons or practice or for discontinuance, except in cases of severe personal illness; for such unavoidable absence lessons may be made up only by appointment, and before the expiration of the term.

Lessons falling on legal holidays, or on special holidays petitioned for by the student body or by special student organizations, which may be granted by the College authorities, will not be made up.

Students are not permitted to transfer tuition accounts to others, nor to receive credit for tuition fees beyond the assigned

registration period, except in cases of severe personal illness, or similar extreme necessity, attested by the College Physician, and then only by making suitable arrangements with the Director.

The college year in the School of Music consists of thirty-six weeks, divided into terms of about twelve weeks each, the first term beginning at the opening of the College on September 22, 1919. The Summer School offers special opportunities for intensive study in music.

The Orchestra. Students of string instruments in attendance at the College, who are sufficiently advanced, are admitted to membership in the College Orchestra by the Conductor on terms approved by the Director. Every reasonable encouragement is given the development and maintenance of a good orchestra under competent, progressive leadership. Students are invited to investigate these opportunities for excellent training in orchestra routine and solo playing. Such experience and drill are of great educational and cultural value.

The Orchestra library consists of works by the following composers: Dvorak, Brahms, Tschaikowsky, Grieg, Gounod, Verdi, Mendelssohn, Beethoven, Elgar, Wagner, Offenbach, Strauss, and others.

Ensemble: Sonatas for violin and piano; string trios; quartettes for two violins, viola, and 'cello, and for four violins, are available for study. All students in the above classes, or registered in any of the above courses, must perform from memory in public when requested by the Director. Membership in the ensemble classes is free, and instruction is to be given by the principal violin instructor.

The College Band. Instruction in the use of brass, wood-wind, and percussion instruments is given by the regular College band leader. To become a member of the College Band, a student must pass a satisfactory examination in the elements of music and ability to perform on his instrument. Members are required to attend daily rehearsals, and a reasonable amount of individual practice is expected. There is no charge for instruction in the band. Each member must furnish his own instrument and music stand, except basses, baritones, altos, and drums, which are furnished by the College. Any student desiring to enter the band should see that his instrument is in low pitch.

Piano and Organ Practice. Rooms located in the Administration Building have been suitably furnished for the use of students wishing to practice in private. These rooms may be rented for about one-third the cost of using pianos located in private houses, and without any of the disadvantages connected therewith. The rooms have steam heat, good ventilation, electric light for night practice, and janitor service, and are furnished with good pianos, kept in tune by the College. Students living in the College dormitories are required to practice upon these pianos. Students living away from the campus may arrange with the Director for practice on the same terms and conditions.

One pipe-organ, a new, modern Kimball two manual, concave pedal board instrument of beautiful tone, is available.

Rental Rates. The following rentals are charged for piano and organ practice:

Piano—	
Term of twelve weeks, one hour a day	$ 3.50
Two hours	5.00
Three hours	7.50
Four hours	10.00
Five hours	12.50
Organ—	
Term of twelve weeks, one hour a day	15.00
Two hours	20.00
Three hours	25.00

Tuition. Private individual instruction is given in lessons of thirty minutes each, in all departments of the School of Music. Class instruction in theoretical branches is required of candidates for graduation, as specified in the outlines of courses. Terms for instruction are as follows:

Voice Culture and Singing—Professor Gaskins, private instruction:

One lesson a week, a term	$18.00
Two lessons a week, a term	36.00

Voice Culture and Singing—Genevieve Baum-Gaskins, private instruction:

One lesson a week, a term	18.00
Two lessons a week, a term	36.00

Pianoforte—Gustav Dunkelberger, private instruction:
One lesson a week, a term 18.00
Two lessons a week, a term 36.00

Note: An inclusive pedagogical course for teachers in pianoforte and a special course for students desiring note-reading, ear-training, rhythm, and elementary composition of melodies, may be arranged for under Mr. Dunkelberger by application to the Director.

Pianoforte—Genevieve Baum-Gaskins, private instruction:
One lesson a week, a term 18.00
Two lessons a week, a term 36.00
Dunning system, class instruction, minimum requirement two lessons a week, a term 25.00

Violin, Viola—Carl Grissen, private instruction:
One lesson a week, a term 18.00
Two lessons a week, a term 36.00

Band Instruments of all kinds—Harry Lynden Beard, private instruction:
One lesson a week, a term 12.00
Two lessons a week, a term 24.00

Mandolin, Banjo—Private instruction:
One lesson a week, a term 12.00
Two lessons a week, a term 24.00

Theory Courses, Mus 10 to 18 inclusive, Gustav Dunkelberger or Gertrude Fisher, as assigned by the Director, class instruction two hours a week, a term 6.00
Private instruction, Mus 10 to 18 inclusive, an hour 3.00

Music History, Professor Gaskins, class instruction, free to students registered in the School of Music. To students not registered in the School of Music, two hours a week, a term 5.00

For additional information address William Frederic Gaskins, Director of the School of Music, Room 30, Administration Building, Oregon Agricultural College, Corvallis, Oregon.

COURSES

Voice

Mus 1. **Voice.** Exercises will be given for correct breath control; purity of tone production; freedom of action and blending of

registers; articulation and correct pronunciation and enunciation of vowels and consonants; elements of phrasing and style. Students must appear on programs if requested, singing from memory, and attend all rehearsals and recitals unless otherwise instructed by the Director. Harmony (Mus 10) and History of Music, two hours a week each; choir and chorus practice; and Physical Education must accompany this course.

Elective; any term; 2 lessons a week; 1 hour daily practice with instrument. Professor Gaskins and Mrs. Gaskins.

Mus 2. **Voice.** Exercises for tone placing; phrasing, and style; legato, marcato, and portamento delivery; physiology of the vocal mechanism; songs and exercises of medium grade of difficulty. Attendance and performance at recitals and rehearsals required, unless otherwise instructed by the Director. First-year Italian or French should accompany this course unless otherwise advised by the Director. Harmony (Mus 11) and Physical Education required as parallel courses.

Prerequisite: Mus 1 or equivalent. Elective; any term; 2 lessons a week; 1 or 2 hours daily practice with instrument.

Mus 3. **Voice.** Study of tone color, agility, the trill, messa di voce, recitation, declamation, phrasing, style; songs in English, French, Italian; attendance and performance at recitals and rehearsals required unless otherwise directed; singing from memory on programs of the School of Music. Harmony (Mus 14), choir and chorus practice, Physical Education, and second year of either French or Italian must be carried parallel with this course.

Prerequisite: Mus 2 or equivalent. Elective; any term; 2 lessons a week.

Mus 4. **Voice.** Advanced study of vocal technique by means of difficult exercises, songs, oratorios, operatic arias, declamation. Advanced composition throughout the year (Mus 16 and 17). Attendance at rehearsals required in preparation for public appearances, and at recitals, singing from memory. A graduation recital is required at the discretion of the Director. A diploma is granted to those satisfactorily completing this course.

Prerequisite: Mus 3 or equivalent. Elective; any term.

Piano

Mus 5. **Piano Preparatory Course.** For beginners. Training of the hand, fingers, wrist, and arm; extended preparation for

scales and arpeggios; easy studies by Bertini, Duvernoy, Loeschhorn, and others; selections from easier works of Clementi, Haydn, Beethoven, and other easy appropriate compositions.

Elective; any term; 2 lessons a week in piano; 1 to 3 hours daily practice with instrument.

Mus 6. **Piano.** Scales and arpeggios; exercises for endurance, speed, accent, and rhythm; etudes from Czerny, Cramer, Moszkowski, and others; easy sonatas of Haydn, Mozart, and Beethoven; easy compositions of Mendelssohn, Schubert, Schumann, Grieg, and others. Harmony (Mus 10), Music History, and Physical Education must accompany this course.

Prerequisite: Mus 5 or equivalent. Elective; any term; 2 lessons a week in piano; 2 to 4 hours daily practice with instrument.

Mus 7. **Piano.** Scales in various forms and technical exercises adapted to the particular needs of the student; etudes of Czerny, Cramer, Ruthardt, and others; suites and inventions by Bach; Mozart, Beethoven, and Weber sonatas of moderate difficulty; more difficult selections from Mendelssohn, Schumann, Chopin, Liszt, and others; transposition of easy hymns; sight reading; memory training. Harmony (Mus 11), German or French as advised by Director, and Physical Education must accompany this course.

Prerequisite: Mus 6 or equivalent. Elective; any term; 2 lessons a week in piano; 3 to 5 hours daily practice with instrument.

Mus 8. **Piano.** Exercises based on the technical difficulties in compositions studied in this course; a limited number of etudes by Rubinstein, Henselt, Haberbier, and others; well-tempered clavichord; the more difficult sonatas of Beethoven and solos by Mendelssohn, Chopin, Schumann, Grieg, Liszt, Brahms, and others; concertos by Mozart, Mendelssohn, Beethoven, and Moscheles. Harmony (Mus 12), Counterpoint (Mus 14) twice a week, German or French, and Physical Education required with this course. Students must perform in public as arranged by instructor or the Director.

Prerequisite: Mus 7 or equivalent. Elective; any term; 2 lessons a week in piano.

Mus 9. **Piano.** Comprehensive study of the principal classic and romantic composers; etudes by Chopin and Moszkowski; solo works of modern composers; concertos by Schumann, Chopin, Rubinstein, and others. Harmonic Analysis (Mus 16), Composition (Mus 17), and Orchestration (Mus 18) must accompany this course. Public performances under conditions approved by the Director. For graduation, students are required to perform publicly under the direction of the School of Music, playing a program not less than one hour in length, arranged by the instructor and approved by the Director. A diploma will be issued upon the satisfactory completion of this course.

Prerequisite: Mus 8 or equivalent. Elective; any term; 2 lessons a week in piano; 3 to 5 hours daily practice with instrument.

Theory

The courses in theory comprise systematic and progressive study in the science of music. Consideration is given to the theories of acoustics, to notation, scales, keys, modes, sight reading, intervals, melodic progression, tempo, dynamics, rhythm, and ear training. Advanced theory embraces harmony, counterpoint and its subdivisions, music history, form, composition, and orchestration. For graduation, thirty-six weeks each year must be devoted to the study of theory, as outlined in the following courses (Mus 10 to 18) or their equivalent.

Mus 10. **Harmony.** Consideration of the theories of acoustics, the formation of the diatonic scale, intervals, chord construction, the relative importance of triads within one key, connection of primary triads, rhythm, the elements of melodic construction, and part writing; harmonization of melodies and unfigured basses; original periods.

Mus 11. **Harmony.** Key relations; chords of the seventh; direct and extraneous modulation; altered and mixed chords.

Prerequisite: Mus 10.

Mus 12. **Harmony.** Inharmonic tones; accompaniment; original work; study of the various modern harmonic theories.

Prerequisite: Mus 11.

Mus 13. **Ear-training.** Aural recognition of intervals demonstrated orally and in writing; singing of diatonic and chromatic

intervals from given tones; writing at dictation of moderately difficult melodies and harmonic progressions.

Mus 14. **Counterpoint.** Simple counterpoint in five species employing from two to eight parts; original exercises; contropuntal chorale elaborations.

Prerequisite: Mus 11 or equivalent.

Mus 15. **Counterpoint.** Double, triple, and quadruple counterpoint; the canon, invention, and the various species of fugue, single and double.

Prerequisites: Mus 12, 13, and 14.

Mus 16. **Harmonic Analysis.** Detailed analysis of representative works of the masters and other compositions; harmonic memorizing of moderately difficult selections.

Prerequisites: Mus 12 and 13.

Mus 17. **Composition.** The application of harmonic material in original exercises in the various forms of composition, including the primary forms, the song, theme with variations, etude, rondo forms, sonatina and sonata.

Prerequisites: Mus 12, 13, and 14.

Mus 18. **Orchestration.** The arrangement of music for orchestra; theoretical study of orchestral instruments and their functions.

Violin

Mus 19. **Violin. Preparatory Course.** Designed to develop correct fingering, free bowing, and accuracy as to pitch, rhythm, and intonation. Studies: Sevcik School, Greenberg, major scales, minor scales in the first position; studies by Hohman, Kayser, and others, elementary solos; special sight reading duos by Mazas and Dancla. Other appropriate studies may be substituted for the above, if approved by the Director, the same to be satisfactorily performed before entering Mus 20. Students must appear in public recitals when required by the Director, playing from memory. The requirements include Harmony and Music History (Mus 10 and 11). Two lessons a week.

Mus 20. **Violin.** Studies by Kayser, Wohlfahrt, Schradieck, Mazas, Dont, and Kreutzer; scales by Musin, Schradieck, or acceptable equivalents; suitable solos, concertos, sonatas, etc. Students

must appear in performances at public recitals when required by the Director, playing from memory. The requirements include Harmony (Mus 11 and 12) and Counterpoint (Mus 14).

Prerequisite: Mus 19. Two lessons a week.

Mus 21. **Violin.** Advanced studies by Dancla, Fiorillo, Singer, Rode, Gravinies, Paganini; solos by Dvorak, Brahms, Vieuxtemps, Rovelli, Spohr, De Beriot, Viotti, Wieniawski, or equivalents. Students must appear in public recitals when requested, playing from memory. The requirements include Harmonic Analysis, Composition, and French or Italian as advised by the Director. As a qualification for graduation students perform publicly, under the direction of the School of Music, a program not less than an hour in length, arranged by the instructor and the Director. A diploma will be issued upon the satisfactory completion of this course.

Prerequisite: Mus 20. Two lessons a week.

Band Instruments

The work in theory required to complete these courses is that outlined in Mus 6 and 7.

Mus 22. **Cornet.** Methods by Arban; characteristic studies by St. Jacome.

Mus 23. **Clarinet.** Methods by Dieppo; studies by Dieppo and Blume.

Mus 24. **French Horn.** Methods by Franz; studies by Franz and Hayffman.

Mus 25. In all other band instruments, including the oboe, bassoon, saxophone, alto, and bass clarinets, drummer's trapps, xylophone, and orchestra bells, the courses will be similar to those given above.

SUMMER SESSION

WILLIAM JASPER KERR, D.Sc., President
EDWIN DeVORE RESSLER, A.M., Director

The chief purpose of the Summer School is to afford an opportunity for study to those unable to attend during the academic year. The courses are arranged for elementary and secondary teachers interested in agriculture, commercial branches, home economics, and manual training; for credit in regular college subjects, as well as for prospective students deficient in entrance credit; for those interested in music and art; and for those desiring practical instruction in agriculture, household economics, and manual arts.

During the session, a two-week course in Agriculture and Home Economics is given for boys and girls of the upper grammar grades and high school. Most of those attending are winners of local, county, or State prizes in the Boys' and Girls' Club contests. A limited number of boys and girls not prize winners are also admitted. A special bulletin gives particulars.

A large faculty, chiefly regular College instructors, supplemented by a number of specialists from other institutions and from other states, together with the extensive equipment in class rooms, laboratories, libraries, shops, and experimental fields, are at the service of the students.

RAILROAD RATES

To those attending the Summer School, the transportation companies grant a special rate of one and a third fare for the round trip, on the certificate plan. In order to receive the benefit of the reduction, the purchaser must pay full fare to Corvallis, securing a receipt from the ticket agent at the time of purchase. This receipt must be countersigned by the College secretary at Corvallis, and on presentation to the ticket agent at Corvallis will secure rate of one-third for the return. This special rate takes effect three or four days before the opening date of the summer session and remains in force until the same length of time after the closing date. Tickets on this plan may be secured at any time while the school is in session, and are also good for return at any time.

ADMISSION AND EXPENSES

There are no entrance examinations or other educational tests for admission. Students desiring collegiate credit must meet entrance requirements and satisfy all other standards of the College. The registration fee of five dollars entitles the student to admission to as many courses as he cares to attend during the entire session. Private, individual lessons in music are given at the regular price charged during the college year; students taking music only need not pay the College registration fee.

The College dormitories, conveniently situated on the campus, accommodate about three hundred students with board and lodging. A charge of one dollar a week is made to cover the cost of heat, light, use of laundry, etc. The rooms are provided with bed, mattress, table, and chairs. Each room has closet, hot and cold water, and electric light. Each student occupying one of these rooms must bring pillows, pillow-cases, sheets, blankets or comfort, bed-spread, towels, napkins, and soap. The laundry room is open for the use of students at Waldo Hall without extra charge. Students must provide electric irons.

Good board may be obtained at the College cafeteria at a reasonable rate. Lists of private lodging and boarding places will also be provided and every assistance rendered in finding satisfactory accommodations. Furnished rooms for light housekeeping may also be had.

Based on the experience of a number of students who reported at the last session, the entire cost in Corvallis of the six-week summer session need not exceed sixty dollars. This allows six dollars a week for board, one dollar for room in dormitory, five dollars registration fee, and thirteen dollars for drayage on baggage and incidentals. Expenses for text books and laboratory fees are not included in this estimate.

SOCIAL AND OTHER FEATURES

The informal and recreation diversions from the class and study routine have not only a social but an educational value as well. These are so controlled and directed as to be inexpensive and unobtrusive.

The College numbers among its faculty some of the best-known popular lecturers in the State. Several will be heard in illustrated

stereopticon addresses on interesting phases of Oregon's industrial development. In addition able lecturers and entertainers from other states appear at various occasions during the summer session. At least one evening each week is given up to entertainment, either in the form of a lecture of general interest, or a concert.

The tennis courts, baseball field, gymnasiums, and other recreational resources of the institution are used by the students and instructors, free of charge. Boating on the Willamette and Mary's rivers, picnics and excursions to various points of interest, including Mary's Peak, and week-end trips to the ocean at Newport, are available for those who desire to indulge in these recreations. The social features of the Summer School are given careful attention, so they may not come in conflict with the regular work, but at the same time be full of pleasure and interest.

SPECIAL ILLUSTRATED BULLETIN

Each spring, special circulars are issued, giving complete description of the various courses offered, statement in detail of living and other expenses, list of instructors, directions for registration, and other matters. Copies may be obtained by addressing the Oregon Agricultural College, Corvallis, Oregon.

THE EXPERIMENT STATION

WILLIAM JASPER KERR, President
ARTHUR BURTON CORDLEY, Director
CLAUDE ISAAC LEWIS, Vice-Director

The Agricultural Experiment Station bears an important relation to the College, as the scientific investigations conducted by the staff strongly support the instruction given in the class room and through the Extension Service. Aside from the original investigations of economic significance to agriculture, the work of the Station affords daily object lessons in modern farm methods.

About 650 acres of land are available for the use of the College and Station workers. This land is utilized by the various departments represented in the Station organization, including the departments of Chemistry, Farm Crops, Farm Management, Farm Mechanics, Horticulture, Animal Husbandry, Dairy Husbandry, Poultry Husbandry, Entomology, Bacteriology, Pharmacy, and Botany and Plant Pathology. Each department is actively engaged in the scientific investigation of problems presented by the different branches of agriculture.

In addition to the experimental work carried on by the departments of the School of Agriculture, experimental work is also conducted by the School of Engineering, the School of Home Economics, and the School of Pharmacy.

The value of such work, as an object lesson to the students in the various fields of study, can hardly be overestimated. Its value to the State, from the point of view of economic progress, has been greater, in the estimation of many careful observers, than the entire cost of the College to the people.

As an instance of the general appreciation on the part of Oregonians of the services rendered by the Experiment Station, mention may be made of the strong endorsement presented to the 1919 Legislature through special delegations. No less than six separate delegations representing respectively the horticultural interests, the dairy interests, the Hood River district, the Southern Oregon district, and the Astoria district, covering practically every part of the State, urged upon the Legislature that the assistance of the Experiment Station was essential to the progress and development of their work.

As an illustration of the comprehensive character of the investigational work carried on by the Station, the following brief summaries of projects, by departments, are presented:

Agricultural Chemistry. This department, either independently or in cooperation with other departments of the College, has under way a considerable number of experiments that are of wide significance both to the economic interests of the State and Nation and to the cause of science. Experiments with arsenical sprays, that represent a total annual expenditure throughout the country of six to eight million dollars, are directed to the object, first, of determining exactly how the efficiency of these arsenicals is best conserved, and second, how a less expensive form of a similar insecticide may be developed. The first object has been partly accomplished, with promise of conclusive results, and the second, through the use of calcium arsenate, seems also within reach of fulfillment. A study of the acid or sour soils of the State of Oregon is being made to ascertain, if possible, by means of pot experiments and laboratory tests; the causes of acidity and to what degree applications of various forms of lime will correct this abnormal condition. It has been found that some acid soils respond to lime treatment while others do not. A physical and chemical examination of these types of soil is being made as to treatment with different calcium salts in order that information regarding this inconsistency may be obtained. In cooperation with the Southern Oregon Branch Experiment Station, at Talent, the department has made a complete chemical survey of the soils of the Rogue River Valley, with a view to determining the deficiencies to be supplied by fertilizers. Sulfur is found to be the element, which, when added to certain of these soils, increases the production of alfalfa and other legumes by percentages running into the hundreds. These fertilizer experiments promise some very striking and valuable results. Incubation experiments, now reaching completion after several years of laborious and painstaking study, go to show that varying the conditions of incubation varies also the quality of the chicks produced. Limited experiments with loganberry juice have been conducted to determine what jelly-making acids are present in the juice, what modifications appear in the juice of the second pressing, and what use may be made of the pulp. Soil analyses conducted in connection with the reclamation service have comprehended one-half million acres of land.

Routine analyses of commercial fertilizers, especially of limestone, have shown the need of caution in the use of these fertilizers at current prices unless the quality is high. Analyses of all insecticides on the market are on file at the Chemist's office, where information concerning any of them may be had, free of charge, on application.

Animal Husbandry. Experiments in Animal Husbandry, which comprehend tests with horses, beef cattle, sheep, and swine, are conducted partly at the Corvallis Station and partly at the Eastern Oregon Branch stations. Experiments with horses are directed to determine the cost of horsepower for various types of farm and other work, the amount of work that may reasonably be expected from a horse, the cost of keep, etc. Experiments with beef cattle, conducted chiefly at Union, are concerned with fattening steers on various rations and with methods of maturing range cattle. Experiments with sheep have been directed to determine the cost of production, the carrying capacity of different types of pasture, methods of fattening sheep, maturing ewes, and methods of rearing and marketing lambs for meat purposes. Experiments with hogs involve the cost of production, including rapidity of gain; and comparison of different feeding rations and methods of feeding, including use of pasture.

Bacteriology. Experimental work in Bacteriology is chiefly concerned with soil analyses, dairy manufacturing, sanitation, and diseases of poultry. Three experimental projects of economic importance that are now under way are the following: (1) The effect of lime and landplaster on the growth of soil bacteria and therefore on the crop; (2) The effect of dryness and varying degrees of soil acidity on the growth of legume bacteria; (3) The facts concerning the prevalence, transmission, and means of control of chicken diseases such as tuberculosis and white diarrhoea.

Botany and Plant Pathology. The work in this department includes the following investigations: methods of control for grain smuts and their effect on the vitality of the seed; storage decays of potatoes and other vegetables and their prevention; wilt diseases of potatoes and other crops; the control of onion smut and onion mildew; relative efficiency of various fungicides both liquid and dust; control of peach diseases; walnut-blight control; brown-rot

prevention; bean diseases; Oregon crop-disease survey; poisonous-plant investigations; weed studies; etc. Emphasis is now being laid on work of particular importance in connection with the Government's increased food production campaign.

Dairy Husbandry. Experiments in this department are directed to standardizing the color of butter and to determining the amount of coloring matter to be added to cream of a certain test, by sample, in order to bring it to standard color, or "June shade;" to determine the keeping quality as affected by different methods of cream neutralization and pasteurization; to determine the cost of manufacture of different dairy products under commercial conditions; to determine, by testing the different factors in the handling of milk, what are the essentials in reducing the bacterial count of milk for market; to determine the function of the so-called milk veins and their bearing on milk production; to determine the factors influencing the percentage of fat content in milk; to determine the feeding value of alfalfa meal as a substitute for the usual grain feeds; to determine the value of kale as compared with silage as a succulent feed.

Entomology. Experiments in Entomology include tests to determine the toxicity of various insecticides with three objects in view: (1) To discover new and cheaper insecticides; (2) To discover possible combinations of sprays that will reduce the number of necessary applications; (3) To determine the actual amount of poison necessary to kill a given insect. Experiments also include tests to determine possible means of control for root borers and other root-infesting insects that carry plant diseases; and ecological and life-history studies on orchard plant lice.

Farm Crops. This department has in hand the following eleven specific experimental projects of chief importance; (1) Variety tests of wheat, oats, barley, flax, vetch, potatoes, and corn; (2) Cultural tests on miscellaneous crops such as sudan grass, sunflowers, mustard, soy beans, and cowpea; (3) Seeding experiments on the time, rate, and date of seeding cereals and legumes; (4) Selection and breeding work with cereals and legumes; (5) Grain and seed storage and handling investigations; (6) Hay handling and storage investigations; (7) Silage making; (8) Grain milling value and milling tests; (9) Crop rotations; (10) Cost of producing crops; (11) Effect of fertilizer on quality of crop.

Farm Management. By means of the farm survey and through farm-record keeping and study of individual cases, a number of the important phases of farm mangement are being investigated. These are as follows: (1) The determination of the chief factors in successful farming in six different counties of the State, through farm surveys and records; (2) Determination of the cost of production of different crop and live-stock products and the cost of various farm operations, in sixteen counties, through record keeping; (3) Methods, efficiency, and costs in manure handling and preservation, through a survey; (4) Farm organization and management planning on individual farms; (5) Methods and costs of land clearing under different conditions.

Some special study is being given to labor supply and labor efficiency on the farm at this time.

Horticulture. Experiments in Horticulture comprise the following types of investigations: (1) The pollination of the pomaceous fruits, including the gross morphology of the apple, fruit-bud development of the apple; variation of the internal structure of apple varieties, etc.; (2) Irrigation work with apples and pears; (3) Experiments with stocks of prunes; (4) Problems of both winter and summer pruning; (5) Strawberry variety tests; (6) Cover-crop investigations; (7) Fertilizer investigations; (8) Breeding investigations with cherries, apples, prunes, and strawberries; (9) Investigations in orchard economics; (10) Vegetable gardening investigations with greenhouse tomatoes, onions, and type selection for canning; (11) Investigations with by-products of fruits and vegetables; (12) Investigations in the relation of depth of planting to mortality of trees; (13) Harvesting and storage investigations with pears.

Poultry Husbandry. Experiments in Poultry Husbandry are chiefly concerned with problems of incubation and with breeding fowls for high average egg production, and for a combination of egg production and meat value. Results in both fields of experimentation have already been remarkable and promise still greater progress toward the objects desired. A new breed, the Oregon, seems to be established with the attributes sought.

Soils. The work in this department includes the following twelve specific investigational projects: Fertility rotations; fertilizer experiments; soil-acidity tests and lime trials; cooperative

soil survey; soil correction trials; toxicity of alkali salts to crops; cooperative tillage and soil moisture studies; surveys and feasibility of irrigation and drainage projects; cooperative duty of water and related investigations; experiments in the distribution of water and improvement of irrigation practice; drainage and improvement of wet soils; and evaporation and weather studies in relation to soil production. A comprehensive system of crop rotations and fertilizer trials is being conducted on some fifteen of the chief soils of the State to help develop a permanent system of agriculture. The duty of water and related investigations are conducted cooperatively with the U. S. Department of Agriculture. It is state-wide in scope with agents at Klamath, Redmond, and Burns in Eastern Oregon. The aim is to determine the right amount of water for the chief soil types and leading crops under the main types of farming in the principal irrigated valleys of the State. The surveys to determine the feasibility of proposed drainage or irrigation projects are made as demand arises. The experiments in drainage are to determine the most efficient depths and distance apart for placing drains in soils of different types, and for testing the efficiency of bedding drains in straw as compared with soils. Since there are one-half million acres of marsh lands in the State and three million acres of land periodically wet, the value of these investigations is obvious. If efficient drainage should add to the value of the land the average determined for this work in the Middle West, the reclamation of the State's wet soils would add at least $10 an acre to the value of these millions of acres.

Veterinary Medicine. The experimental work of this department has been devoted chiefly to finding means for prevention of sterilty in cattle, and to studying the so-called walking disease of horses.

EXTENSION SERVICE

WILLIAM JASPER KERR, D.Sc., President of the College
ORLO DORR CENTER, M.S., Director of Extension Service
MARGARET FARQUHAR COOK, Secretary of the Extension Service

LEONARD JOHN ALLEN, M.S., State Leader Pig Clubs
FRANK LEWELLYN BALLARD, B.S., Field Organizer, Bureau of Organization and Markets; Assistant State Leader County Agent Work
CHARLES STOCKTON BREWSTER, M.S., Assistant Professor of Poultry Husbandry; Extension Specialist in Poultry Husbandry
HELEN JULIA COWGILL, B. S., Assistant State Leader of Industrial Clubs
EDWARD BLODGETT FITTS, Professor of Dairy Husbandry
EZRA JAMES FJELDSTED, B.S., Assistant Professor of Animal Husbandry
REUBEN VEERIN GUNN, B.S., Farm Management Demonstrator
WALLACE LaDUE KADDERLY, B.S., Assistant State Leader County Agents
JESSIE DUNLAVY McCOMB, M.S., State Leader of Home Economics Extension and of Home Demonstration Agents
CHARLES JARVIS McINTOSH, B.S., Assistant Professor of Industrial Journalism; Editor of Press Bulletins, Extension Service
HECTOR MACPHERSON, Ph.D., Professor of Economics and Sociology; Director of the Bureau of Organization and Markets
PAUL VESTAL MARIS, B. S., State Leader County Agents
PAUL MEHL, M.S., Agent in Marketing
WILBUR LOUIS POWERS, M.S., Professor of Soils; Extension Specialist in Drainage and Irrigation
CARL EPHRIAM SCHUSTER, B.S., Assistant Professor of Horticulture
HARRY CASE SEYMOUR, State Leader Industrial Clubs
EDGAR LEROY WESTOVER, B.S., Field Dairyman

The Extension Service is one of the three great means of expression of the Oregon Agricultural College, whose functions are, resident instruction, experiment and research, 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 Extension Service includes all forms of 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.

To accomplish the objects sought, various methods are employed; namely, teaching by demonstration, giving of accurate and timely information, organization, planning for social and other recreation, and cooperating with Experiment Station and other organized forces. In a field so large, with such a multiplicity of problems and conditions, and with numerous methods of action, there is grave danger of unwise or wasteful undertakings. To prevent this the law requires the preparation of written plans for work and proposed expenditure of funds. These plans must be approved by the U. S. Secretary of Agriculture and by the President of the Oregon Agricultural College. These detailed plans of work are called projects. They must be approved before they are inaugurated, must be reported on at the close of each fiscal year, and when once adopted and signed cannot be altered or deviated from without the written consent of the authorities of the U. S. Department of Agriculture.

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 Extension Service, which also embraces a sub-project, Printing and Distribution of Publications; (2) County Agricultural Agents; (3) Home Economics and Home Demonstration Agents; (4) Boys' and Girls' Clubs; (5) Field Horticulture; (6) Field Dairying; (7) Farm Management Demonstrations; (8) Field Entomology; Plant Pathology, Bacteriology; (9) Rural Organization and Marketing; (10) Animal Husbandry; (11) Poultry Husbandry; (12) Farm Crops, Drainage and Irrigation; (13) Extension Schools and Meetings; and (14) Personal Information and Advisory Correspondence.

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.

The County Farm Bureau. The county farm bureau, a representative body of citizens of the county selected by individual communities, is an effective means of cooperation between the county, the College, and the U. S. Department of Agriculture. The complete farm bureau embraces representatives from every community in the county. Through local and county conferences the members of this bureau determine a complete "program of work" for the year. This program, which comprehends all phases of extension activity, becomes the basis for the budget item which the county acts upon in considering its appropriation for agricultural extension. Adopted by the farm bureau, and endorsed by the county board through an appropriation, this program thus becomes the basis for expenditures of the county, state, and Federal funds available for the agricultural extension work of any particular county.

Importance of Extension Work in Oregon. The magnitude of the problem of College Extension in Oregon can be fully realized only by keeping in mind that the State has a population of nearly 800,000 distributed over a total area of 95,600 square miles—a territory greater than the combined areas of Illinois and Indiana and almost as great as the combined areas of New York, New Jersey, and Pennsylvania. The State, moreover, has few railroads, and in certain sections is very sparsely settled. The people who are to be reached by extension methods represent the greatest extremes in age, capacity, education, and experience with the climate and the country. Oregon's great diversity in elevation, precipitation, temperature, soil, and climatic conditions, still further complicates the problem of Extension Service, and makes it important in proportion to its complexity.

All persons or communities in the State wishing to make use of the assistance which they are entitled to and which will freely be given in any of the lines indicated, should communicate with the county representative of the Extension Service (County Agent, Home Demonstration Agent, or County Club Leader) direct, or with the Extension Service, Oregon Agricultural College, Corvallis, Oregon, as far as possible in advance of the time the appointment is desired. Short-notice requests may not find the College in position to render the service desired. If an Extension School is desired, be sure to give particulars pertaining to the time proposed,

the nature of the subjects in which the community will be interested, and the plans for the meeting. If a single lecture or demonstration or exhibit is wanted, be equally prompt and explicit.

It must be remembered that while the College is eager and willing at all times to help all who apply, its staff, facilities, and funds are limited. On this account, the Extension Service is sometimes unable to give aid where it would like most to give it. Requests for instruction or other assistance, however, should not be withheld. The great majority of the State's needs have been, and generally can be, cheerfully and efficiently met.

ADMINISTRATIVE

The administrative work of the Extension Service is vested in a Director and heads of the various departments. The administrative duties consist of planning and coordinating the several lines of Extension work, dividing and assigning funds, planning the Extension campaigns, meetings, schools, conferences, demonstrations, etc., authorizing all Extension publications, planning and arranging exhibits, and supervising the prosecution of all phases of the work. Reports are required covering all lines of Extension Service and periodical reports are made to College officials and other cooperating agencies.

COUNTY AGENT WORK

The largest branch of the Extension Service at the present time is the County Agent work. In charge of this division are the State Leader and Assistant State Leaders. Prosecuting the work throughout the State are 23 County Agents, covering 24 counties, each agent being charged with the development of the agricultural interests of the county which he serves.

The work is conducted under the authorization of Section 3 of Chapter 10 of the Session Laws of Oregon for 1913. Counties with areas of less than 5000 square miles may appropriate up to $2000 for the employment of an agent and maintenance of his office and larger counties may appropriate up to twice that amount. The State duplicates the county appropriation. The average county appropriation is approximately $1800. The provisions of the Oregon law place the County Agent work under the direct supervision of the Agricultural College.

The County Agent is the representative of the United States Department of Agriculture, the State Agricultural College, and the county in which he is located. Through a union of these forces and working with a county organization he is able to bring the fullest measure of practical and scientific knowledge to the solution of the agricultural problems of the county and to the improvement of country life conditions.

Counties not provided with county agents and interested in securing them should correspond with the Director of Extension Service or the State Leader of County Agents, who will render every assistance possible in explaining the plan and methods of work and necessary steps to be taken in establishing it.

HOME ECONOMICS

Home Economics Extension offers a means by which the homemakers of the State may call upon the College for assistance in solving their special problems. This work is planned, first, to meet the demand of Oregon women who are interested in all subjects related to the home and better living conditions; and second, to create a greater interest in these subjects concerning the vital problems, three of which are:

1. Food—selection, preparation, and use.
2. House—arrangement, decoration, and conveniences.
3. Clothing—methods of removing stains, simple tests for wool, cotton, linen, and silks, selection, preparation, and use.

Five counties now employ Home Demonstration agents. This work is being developed along lines similar to those followed by the County Agents. Its aim and purpose is the betterment of the country home, the removal of household drudgery, more contented farm women, and a richer rural life. Through the Home Demonstration agent the worth-while things in home making and larger home efficiency are extended to the farm woman even as the more progressive things in farming are made possible to the men. This work is co-ordinated with that of the County Agents through the same county organization and a mutually agreed program of work. A State Leader is in charge of this division of Extension Service.

BOYS' AND GIRLS' CLUB WORK

The Junior Extension activities of the Oregon Agricultural College take the form of club and contest work among the boys and girls. Those who are, or can be, interested in the basic farm and home enterprises, such as the growing of plants, the rearing of animals, or the work in home economics, are encouraged to enroll for one or more Club projects.

The Club project, which is to be worked out at home, may take the form of growing one-sixteenth of an acre or more of corn, potatoes, vegetables, etc.; the management of a brood sow and litter, or a single pig; sheep raising; raising a flock of chickens; keeping a milk-and-feed record of a herd of dairy cows; the completion of ten lessons in sewing, baking, food preparation, or canning—14 different projects in all.

The Junior extension work represented by Clubs is coordinated with other lines of Extension activity, including the County Agent and Home Demonstration Agent work, and cooperates with the County Superintendent of Schools in each county.

Assistance is rendered, enthusiasm aroused, and interest sustained in the work by means of Club meetings, circulars and bulletins, and personal visitation by local, county, and State Club leaders.

Prizes are offered to the winners in Club projects at the local, county, and State Club festivals and fairs. The Club members are made to see, however, that the most worth-while prizes are the knowledge, skill, and profit that each one may derive from the work.

Club work in Oregon is maintained and supervised by the Oregon Agricultural College Extension Service in cooperation with the U. S. Department of Agriculture, and the State Department of Education. The activities of all these agencies are led by the State Leader of Club work.

HORTICULTURE

Extension Horticulture covers the whole subject of orchard operations, including cultivation, pruning, spraying, thinning, harvesting, and marketing, and laying emphasis upon the vital question of reducing the cost of producing and handling fruits.

Small fruits and vegetables have their share of attention and the improvement of the surroundings of our farm homes is emphasized as a matter of great importance.

Improvement in the quality of the exhibits of county and community fairs, better arrangements of such exhibits, and a clearer and more uniform method of classification of exhibits is a subject that is given considerable attention.

Special attention is given to two series of projects or farm schools—one for pruning and one for spraying. This work contemplates having the operations of pruning and spraying, under field conditions, performed by members of the classes enrolled under the direction of the Extension Horticulturist.

DAIRYING

Extension Dairying carries throughout the State, and helps to put into effective use, information regarding all branches of the dairy industry, such as the care and management of the herd, the raising of the calf, the treatment of diseases, the care of milk and cream, and the manufacture of dairy products. Emphasis and aid are given toward effecting dairy cooperative organizations such as Cow Testing Associations, Breeders' Associations, Bull Associations, Farmers' Cooperative Creameries, Farmer' Cooperative Cheese Factories, and Farmers' Cooperative Cream Selling Agencies.

FARM MANAGEMENT DEMONSTRATIONS

The purpose of the department of Farm Management Demonstrations is to demonstrate to farmers, in connection with their own farms, a practical and efficient method of summarizing and analyzing a farm business as a means of measuring the profit or loss incurred in conducting it and of deciding upon readjustments that promise to increase its net income.

In a management demonstration the business of each farm in a community is analyzed from an economic standpoint and then compared with the others to determine some of the changes which should be made in its organization to make it more profitable.

The Federal Income Tax makes necessary a more careful study of farm accounts and keeping of more accurate records. Special attention will be given to meet this requirement through the farm record work and farm business analysis.

FIELD ENTOMOLOGY, PLANT PATHOLOGY, BACTERIOLOGY

The Extension Service in the several sciences covered includes personal conferences and information, lectures, demonstrations, correspondence, and reports.

In entomology particular attention is given to the control of orchard and garden insect pests, field-crop pests, stored-product insects, and to apiculture. Onion smut problems, cereal smut, its control and prevention, grain rusts, and general disease identification, control and eradication of all classes of poisonous plants are given consideration by the plant pathologists. Special assistance is rendered through the department of Bacteriology in the preparation and distribution of legume bacteria, through control of serious contagious disease both human and animal and in conjunction with State departments in determining milk supply contamination and control.

Other departments render similar service along their particular lines.

ORGANIZATION AND MARKETS

The Extension Service Bureau of Organization and Markets takes up the investigation and marketing problems which are confronting the farmers of the State. One man is in the field constantly, working with the farmers who are attempting, through organization, to better their conditions. Other members of the staff are sent out on definite organization projects, such as creamery and cheese factory organizations. It is the aim of this department to help farmers' organizations to get started in such a way as to accomplish the most good with the least possible risk and outlay.

Systematic instruction is being carried on through extension lectures, press bulletins, and personal conference covering the whole field of marketing and rural credits.

ANIMAL HUSBANDRY

EZRA JAMES FJELSTED, Field Animal Husbandman

Extension Animal Husbandry takes up all problems connected with the improvement of beef cattle, horses, swine, sheep, and

goats. The slogan is, "Better breeding and more efficient feeding." Information is gathered from many sources and distributed throughout the State. The Extension work in animal husbandry is being much strengthened through the rapid accumulation of valuable live-stock data by the Experiment Station at Corvallis and by the Eastern Oregon Branch Experiment Station at Union. The great diversity of conditions in various parts of the State is given due consideration and the work planned to fit the particular locality where given.

POULTRY HUSBANDRY

Extension Poultry Husbandry covers all the branches of the poultry industry in a practical way as they apply to actual farm conditions in the State.

The work embraces such subjects as breeds and methods of breeding; feeds and methods of feeding; methods of housing and management of fowls for egg production and for market; hatching and rearing chickens; marketing of poultry and eggs. Particular attention is being given to the breeding of fowls for egg production.

Through cooperation with County Agents, special demonstrations in caponizing and in selecting and culling laying hens are made possible.

The general aim is to help the poultry raisers to produce better eggs and more of them at less cost.

FARM CROPS

Farm-crops Extension work covers the bulk handling of grain, the grading and classification of grain, potatoes, hay, etc., the selection of land for cropping purposes, the preparation of soil, seed selection, planting, culture, harvest, and storage methods for grain, potatoes, beans, peas, corn, flax, and other crops and forage plants, as well as potato certification, seed inspection, crop rotation, and special crop problems. This service is given through personal advisory conferences, special demonstrations, lectures, institutes, bulletins, correspondence, and extension schools.

DRAINAGE AND IRRIGATION

Drainage work includes soil management subsequent to installing drains as well as drainage construction work. Assistance is given in planning drainage systems as well as through personal

demonstration in the laying out of drainage systems for individuals and communities. Information is given through lectures, extension schools, personal conference, and correspondence. Assistance and advice are also given in the organization of feasible drainage districts.

Irrigation is concerned with economic use of water, handling of soils and crops under irrigation, removal of alkali by drainage, and like matters. Assistance is rendered in this work as outlined above under drainage. Design of farm distribution systems and individual pumping plants and organization of irrigation districts where feasible are among the activities of this department.

EXTENSION SCHOOLS, LECTURES, AND CORRESPONDENCE COURSES

Extension Schools. Extension Schools along definite project lines are organized in various sections of the State. These schools are arranged in such way that they may continue from year to year at the same points and yet not repeat the work previously given. The length of time spent at each place is dependent upon the subject matter to be handled in each case.

Extension Lectures. Lectures are furnished local organizations upon request through County Agents and Home Demonstration Agents in territory occupied by these agents, or direct through the Extension Service in case there is no agent in the territory. In all lecture work it is desirable both as regards economy and efficiency to arrange the work in circuits.

Fair Judging and Exhibits. Judges are furnished fairs as far as this is possible with the limited staff available. Exhibits are made at a few large fairs.

All the work outlined above is arranged directly through County Agricultural Agents, Home Demonstration Agents, and other representatives of the Extension Service in the territory from which requests are received.

Correspondence Courses. The aim of the Extension Service of the Oregon Agricultural College in offering correspondence

courses is to reach those who cannot be reached otherwise, and who are seeking special information along such lines of work as can be taught through correspondence.

It is assumed in the courses offered that the student has only a general acquaintance with the subject pursued and that he desires a practical working knowledge of it. Subjects, therefore, are presented in simple and direct language.

Students may begin correspondence courses at any time during the year. No preliminary examination is required for enrollment.

CATALOGUE OF DEGREES, HONORS, FACULTY, STUDENTS, AND ENROLLMENT

DEGREES CONFERRED, JUNE 10, 1919

BACHELOR OF SCIENCE DEGREES

AGRICULTURE

Charles Boone Ahlson ..... Hillsdale, Multnomah
Carl Henry Behnke ..... Sunnyside, Washington State
Alva Breithaupt ..... Portland, Multnomah
Elmo Barry Chase ..... Eugene, Lane
Henry Noris Christensen ..... Portland, Multnomah
Pennoyer Francis English ..... Salem, Marion
Fred Daniel Entermille ..... Bawer, Baker
Arthur Lawrence Fluharty ..... Corvallis, Benton
Elmer Dean Hunter ..... Portland, Multnomah
Ralph Edison Irving ..... Burns, Harney
Owen Hull Johnson ..... Quincy, Columbia
Robert Nolano Justo ..... Buenos Aires, Argentina
* Elvin Winfield McMindes ..... Milwaukee, Wisconsin
Howard Mason ..... Pasadena, California
Arthur Samuel Moulton ..... Portland, Multnomah
Clarence William Myers ..... Caruthers, California
Karl Frank Neuhaus ..... Corvallis, Benton
John Richard Nevius ..... Long Beach, California
Sidney Maurice Nielson ..... Ferndale, California
Hiram Eldridge Pratt ..... Coupeville, Washington State
Phillips Brooks Sweeney ..... Walla Walla, Washington State
* Hazlitt Vickers ..... Corvallis, Benton
Leslie Clinton Whitaker ..... Sacramento, California
John Samuel Wieman ..... Los Angeles, California

LOGGING ENGINEERING

Herbert Franklin Thomas ..... Mabel, Lane

HOME ECONOMICS

Christine Gordon Abbott ..... Caldwell, Idaho
Amy Isabella Armitstead ..... Portland, Multnomah
Marjorie Marian Barratt ..... Portland, Multnomah

* Degree granted at end of Summer Session, 1918.

Georgina Bertha Bendler ..... Cornelius, Washington
Florence Ernestine Berchtold ..... Corvallis, Benton
Kathleen Black ..... Portland, Multnomah
Genevieve Bolton ..... Seattle, Washington State
Mary Claire Carter ..... Aberdeen, Washington State
Estelle Wescott Chadbourne ..... San Francisco, California
Dorothy Ellen Childs ..... Independence, Polk
Hazel Christensen ..... Portland, Multnomah
Una Clementine Darby ..... Silverton, Marion
Mabelle Josephine Davis ..... Corvallis, Benton
Marilla Dunning ..... Stanfield, Umatilla
Evangeline Dye ..... Oregon City, Clackamas
* Bertha Edwards ..... Corvallis, Benton
Dorcas May Elliott ..... Vancouver, Washington State
Vesta Gardner Entermille ..... Baker, Baker
Tilda Berger Ericson ..... Bellingham, Washington State
Zelta Fern Feike ..... Portland, Multnomah
Bertha Marie Fisher ..... Haines, Baker
Hazel Garber ..... Nampa, Idaho
Helen Baldwin Haley ..... Chicago, Illinois
Coral Clarice Hall ..... Jerome, Idaho
Helen Harrington ..... Santa Fe, New Mexico
Lorena Mary Heider ..... Sheridan, Yamhill
Verda Hubbard ..... Rickreall, Polk
Velma Edwards Hull ..... Mayville, Gilliam
June May Kubin ..... Stayton, Marion
Esther Eliabeth Husbands ..... Hood River, Hood River
Telete Landram ..... Merced, California
* Dorothy Lane ..... Los Angeles, California
Alice Lundgren ..... Vancouver, Washington State
Lola Winifred McBride ..... Eddyville, Lincoln
Addie McCullough ..... Portland, Multnomah
Olive Hamilton McKellips ..... Portland, Multnomah
Esther Verna Magg ..... Salem, Marion
Hazel Johanna Magnuson ..... Everett, Washington State
Elsie Pauline Martin ..... McMinnville, Yamhill
Eula Ellen Miller ..... Corvallis, Benton
Edith Marie Murray ..... Ankeny, Iowa
Rita Norris ..... Corvallis, Benton
Maribel Cheney Pratt ..... Coupeville, Washington State
Opal Rains ..... Oregon City, Clackamas
Ruth Thayer Raymond ..... Raymond, Washington State
Gladys Rice ..... Corvallis, Benton
Mary Catharine Robertson ..... Portland, Multnomah
Helen Beatrice Sandon ..... Corvallis, Benton
Esther Louise Schreiber ..... Charlton, Iowa
Eleanor Marie Selover ..... Oneida, New York

* Degree granted at end of Summer Session, 1918.

Mabel Adeline Slayton ..... Prineville, Crook
Mildred Lura Slayton ..... Prineville, Crook
Victoria Soderstrom ..... Albany, Linn
Helen Maude Sprague ..... Portland, Multnomah
Katherine Marcelle Strome ..... Junction City, Lane
Anna Tromp ..... Ferndale, Washington State
Catherine Tweed ..... Corvallis, Benton
Hazel Margaret Vincent ..... Vici, Oklahoma
Ruth Elodie Voruz ..... Baker, Baker
Ethel Elaine Walker ..... Corvallis, Benton
Martha Jane Williamson ..... Corvallis, Benton
Edna May Woodsum ..... Corvallis, Benton

CIVIL ENGINEERING

Raymond Archibald ..... Albany, Linn
Henry Odeen ..... Jersey City, New Jersey
Ellsworth Gould Ricketts ..... Portland, Multnomah
George Vinton Robinson ..... Forest Grove, Washington
Mervyn Stephenson ..... Condon, Gilliam

ELECTRICAL ENGINEERING

Frank Gow Ding ..... Portland, Multnomah
Lawrence Fudge ..... Ballston, Polk
Floyd Myron Nichols ..... Monrovia, California
Orren Edgar Osburn ..... Mosier, Wasco
Edward Allen Paine ..... Portland, Multnomah
George Marion Schwarz ..... Portland, Multnomah

INDUSTRIAL ARTS

Leland Alexander Mentzer ..... Corvallis, Benton
Phillip Parcher ..... Maryville, Missouri

MECHANICAL ENGINEERING

Alfred Peter Agosti ..... Corvallis, Benton
Frank Bartu ..... Scio, Linn
Rodney Gregg ..... Gazelle, California
Jesse Lonson Holden ..... Portland, Multnomah
James Monroe Luebke ..... Toutle, Washington State
Benjamin Hodge Nichols, Jr. ..... Corvallis, Benton

MINING ENGINEERING

William Ricker Detering ..... Portland, Multnomah
Lewis Herman Edwards ..... Monroe, Benton

Elmer Fisher ..... Corvallis, Benton
Elton Mumpower Hattan ..... Oregon City, Clackamas
Earl Albert Hutchings ..... Corvallis, Benton
Sigurd Wilhelm Lagus ..... Astoria, Clatsop
Julian Stephens Marshall ..... Portland, Multnomah

CHEMICAL ENGINEERING

Ralph Lester Kellogg ..... Portland, Multnomah

COMMERCE

Runa Elizabeth Bacon ..... La Grande, Union
Altha Opal Cooper ..... Corvallis, Benton
Myrtle Blakley Husbands ..... Hood River, Hood River
* Lillian Dearmin Laythe ..... Tucson, Arizona
Eleanor Bailey Nichols ..... The Dalles, Wasco
Iva McGinnis Odeen ..... Jersey City, New Jersey
Inez Peterson ..... Mist, Columbia
Bessie Margaret Thompson ..... Santa Ana, California

PHARMACY

John Barcroft ..... Newberg, Yamhill
James Owen Foley ..... Corvallis, Benton
Katherine Douglas Waite ..... Roseburg, Douglas
Laura Elizabeth Ziegler ..... White Salmon Washington State

OTHER DEGREES AND DIPLOMAS

GRADUATE IN PHARMACY

James Owen Foley ..... Corvallis, Benton
John Emery Gillmore ..... St. John, Multnomah
Paul Robinson ..... Medford, Jackson
Loyal Edgar Scott ..... Creswell, Lane
Harold Stevenson ..... Halsey, Linn
Ervin Patton Stone ..... Lone Mountain, Tennessee
Katherine Douglas Waite ..... Roseburg, Douglas
Laura Elizabeth Ziegler ..... White Salmon, Washington State

PHARMACEUTICAL CHEMIST

Clyde Dale Horner ..... The Dalles, Wasco
Paul Willard Jewel ..... Corvallis, Benton
Guy Staiger ..... Corvallis, Benton

DIPLOMA, SCHOOL OF MUSIC

Rowena Adelaide Wood ..... Arlington, Gilliam

Certificate in Physical Education

Genevieve Moore ..... Corvallis, Benton
Dorothy Pernot ..... Corvallis, Benton

* Degree granted at end of Summer Session, 1918.

HONORS AND PRIZES

SENIOR HONOR STUDENTS

Senior honors are conferred by the College Council upon those members of the graduating class who have maintained throughout their entire college course the highest scholastic standing in their department. No student is eligible to this honor unless his general average for all subjects has been eighty-five percent or higher. Election is limited to ten percent of the graduating members of a department.

Selections for June, 1918

AGRICULTURE

Chester La Verne Firestone
Glenn Smyth Strome
Albert Otto Meier
Alfred Weaver Oliver
Eric Englund

COMMERCE

Theodore Cramer

ENGINEERING

Everett Willoughby Dye
Archer Olin Leech
Louis Happold

FORESTRY

Charles Adelbert McCollum

HOME ECONOMICS

Lulu May
Elizabeth Barker
Ethel Brinkerhoff
Carrie Castle
Emma Ione Gline
Katherine Howells

MINING AND CHEMICAL ENGINEERING

Harold Wayne Thoms

PHARMACY

Francois Archibald Gilfillan

Selections for June, 1919

AGRICULTURE

Lesile Clinton Whitaker
Arthur Lawrence Fluharty

COMMERCE

Mrs. Eleanor Bailey Nichols

ENGINEERING

Raymond Archibald
Benjamin Hodge Nichols, Jr.

PHARMACY

Elmer Fisher

HOME ECONOMICS

Marilla Dunning
Katharine Marcelle Strome
Zelta Fern Feike
Hazel Garber
Ruth Elodie Voruz
Christine Gordon Abbott

MINES

Katherine Douglas Waite

RECIPIENT OF THE SHAKOPEAN CUP, 1918

Theodore Cramer

This trophy, known as the Shakopean Cup, is presented annually to that member of the Senior Class who, during his whole College course has excelled all others in his class in forensics.

CLARA H. WALDO PRIZES

The Clara H. Waldo Prizes are awarded on a basis of both scholarship and general achievements as follows: (a) Proficiency in literary and scholastic attainments; (b) Success in student activities; (c) Qualities of womanhood; (d) Qualities of leadership. The selection is made by a joint arrangement between faculty and students. To the senior woman selected, a prize of forty dollars is awarded; to the junior woman, thirty dollars; to the sophomore woman, twenty dollars; and to the freshman woman, ten dollars. Students receiving second and third place in each class are given Honorable Mention.

Selections for June, 1918

SENIOR
Ruth Morton

SOPHOMORE
Helen Gardner

JUNIOR
Zelta Feike

FRESHMAN
Bernice Haines

The students in each class receiving second and third place, entitling them to Honorable mention, are:

SENIORS
Mary Elizabeth Barker
Josephine Marion Hammond

SOPHOMORES
Hazel Strief
Florence Holmes

JUNIORS
Christine Abbott
Katherine Strome

FRESHMEN
Frances Castner
Marjorie Rood

Selections for June, 1919

SENIOR
Marilla Dunning

SOPHOMORE
Dorothea Abraham

JUNIOR
Helen Gardner

FRESHMAN
Alma Scharpf

The students in each class receiving second and third places, entitling to Honorable Menton, are:

SENIORS
Zelta Feike
Katherine Strome

SOPHOMORES
Bernice Haines
Francis Castner

JUNIORS
Elsie Price
Ruth Kennedy

FRESHMEN
Alice Feike
Gladys Morton

ROSTER OF OFFICERS

Military Department, 1918-19

COMMANDANT OF CADETS

Colonel JOSEPH KEPNER PARTELLO, Infantry, U. S. Army

CADET OFFICERS

G. V. ROBINSON, Colonel
M. STEPHENSON, Lieutenant Colonel
C. F. BEATIE, Major, First Battalion
E. A. HUTCHINGS, Major, Second Battalion
O. A. DADMUN, Major, Third Battalion

STAFF

R. A. WATT, Regimental Adjutant
A. S. MOULTON, Regimental Supply Officer
E. M. HATTAN, Inspection
W. R. DETERING, Inspection
G. A. POWELL, Grenades
J. B. HYDE, Engineering
A. M. MANNING, Signal Corps

CAPTAINS

E. L. Freeland, Co. "C"
E. J. Keller, Co. "F"
S. W. Lagus, Co. "G"
K. F. Newhaus, Co. "H"
B. H. Nichols, Co. "I"
E. G. Ricketts, Co. "E"
P. B. Sweeney, Co. "D"
W. Waterman, Co. "B"
C. W. Williams, Co. "A"

FIRST LIEUTENANTS

W. M. Bain, Co. "E"
O. M. Bodle, Adj. Second Bat'n.
O. E. Cantrall, Co. "A"
A. B. Cockrum, Adj. Third Bat'n.
C. E. Crowell, Co. Engineers
L. L. M. Durham, Co. "C"
E. D. Hunter, Co. "B"
M. J. Loosley, Co. "F"
R. A. McClanathan, Co. "G"
A. W. McComb, Co. "B"
O. G. Paulson, Co. "D"
S. W. Smith, Co. "H"
G. E. Spriggs, Adj. First Bat'n.
L. H. Tuthill, Co. "I"

SECOND LIEUTENANTS

F. D. Atkinson, Supply
W. K. Belt, Co. "H"
K. Cook, Co. "A"
S. W. Dobson, Supply
E. N. Green, Co. "D"
R. F. Kyle, Co. "C"
W. F. Lathrop, Co. "G"
Carl Long, Co. "F"
R. M. Poole, Co. "E"
L. C. Regnell, Co. "I"

CATALOGUE OF FACULTY, 1919-20

ABBREVIATIONS

A, Armory
Ad, Administration Building
Ag, Agricultural Hall
CH, Cauthorn Hall
D, Dairy Building
F, Forestry Building
Fd, Foundry
HE, Home Economics Building
L Library
M, Mines Building
MA, Mechanic Arts Building
MH, Mechanical Hall
MG, Men's Gymnasium
NH, New Heating Plant
S, Science Hall
Sh, Shops
WG, Women's Gymnasium

ALLEN, ETHEL, B.S., Assistant in Library (L)
ALLEN, FREDERICK JOHN, B.S., H.E., Instructor in Chemistry (S)
ALLEN, LEONARD JOHN, M.S., State Leader Pig Clubs, Extension Service (Ag 127)
ANDERSON, WILLIAM BALLANTYNE, Ph.D., Professor of Physics (MH 22)
ATWOOD, WINFRED McKENZIE, Ph.D., Associate Professor of Plant Physiology (Ag 230)
AVERILL, WILLIAM SAMUEL, B.S., Foreman in Farm Crops (Ag)
AYRES, ERNEST FLAGG, Captain Corps of Engineers, U. S. Army, Instructor in Military Engineering (A)

BACH, LOUIS, M.A., Professor of Modern Languages (M 207)
BALDWIN, LOREN BURTON, A.M., Assistant Professor of English (L)
BALLARD, FRANK LEWELLYN, B.S., Field Organizer, Bureau of Organization and Markets (Ag 122)
BARROWS, HARRY PERCY, Ph.D., Professor of Agricultural Education (F 204)
BARSS, HOWARD PHILLIPS, A.M., M.S., Professor of Botany and Plant Pathology; Chief in Botany and Plant Pathology, Experiment Station (Ag 235)
BEARD, HARRY LYNDEN, B.S., Assistant Professor of Mathematics; Director of Cadet Band (D 304)
BEATY, EDWARD BENJAMIN, B.S., M.A., Associate Professor of Mathematics (D 200)
BECKWITH, THEODORE DAY, M.S.,* Professor of Bacteriology; Chief in Bacteriology, Experiment Station (Ag 410)
BELKNAP, JOHN HARRISON, B. S., Instructor in Physics (MH)
BERCHTOLD, FREDERICK, A.M., Professor of English Language and Literature (Ad 21)
BEVAN, WILLIAM ALFRED, B.S., Assistant Professor of Physics (MH)
BEXELL, JOHN ANDREW, A.M., Dean of the School of Commerce; Professor of Accounting and Business Management (Ag 220)
BILES, JESSIE, A.B., Instructor in Household Art (HE 306)
BILLIE, BREWER, B.S., Assistant Athletic Coach (MG)
BLACK, BURR, B.S., Assistant Entomologist
BOALS, RAY B., B.S., Instructor in Mechanical Engineering
BOUQUET, ARTHUR GEORGE, B.S., Professor of Vegetable Gardening; Vegetable Gardening Specialist, Experiment Station (Ag 135)
BOVEE, MARY ISABELLE, Instructor in Physical Education for Women (WG)
BOYER, SYLVESTER, A.B., Instructor in Chemistry
BRANDON, HENRY CLAY, A.M., Professor of Industrial Arts; Director of Shops (Sh 20)

---

* On leave of absence

BRANDT. PHILIP MARTIN. B.S.. A.M.. Professor in Dairy Husbandry: Chief in Dairy Husbandry. Experiment Station (D 204)
BREITHAUPT. ALVA. B.S.. Irrigation Field Agent
BREWSTER. CHARLES STOCKTON. M.S.. Assistant Professor of Poultry Husbandry (F 211)
BRODIE. RENTON KIRKWOOD. M.S..* Associate Professor of General Chemistry
BROWN. WALTER SHELDON. A.B.. M.S.. Professor of Pomology (Ag 325)
BRUMBAUGH. JESSE FRANKLIN. A.M.. LL.B.. Professor of Psychology (F 203)
BULLIS. DELOSS EVERETT. B.S.. Assistant in Agricultural Chemistry (S 210)
BUOL. EDWARD MARTIN. C.E.. Assistant Professor of Forestry
BURNAP. MYRTLE. B.S.C.. Secretary to the Dean of Mines
BURNS. LILLIAN. B.S.. Instructor in Stenography (Ag 303)

CALLAHAN. IDA BURNETT. B.S.. Associate Professor of English Language and Literature (Ad 20)
CENTER. ORLO DORR. M.S.. Director of Extension Service (Ag 129)
CHAMBERLIN. WILLARD JOSEPH. B.S.. Instructor in Entomology: Assistant in Entomology, Experiment Station
CHANDLER. ASA. Ph.D.. Assistant Professor of Zoology and Physiology
CHAPPELL. VINCENT DICK. M.S.. Assistant Professor of Dairy Husbandry (D 111)
CHENY. LAURA. B.S.. Instructor in Household Science (HE)
CLIFFORD. JOHN MYERS. Secretary to the Dean of Agriculture and to the Director of the Experiment Station (Ag 112)
COCKS. EDNA AGNES. A.M.. Professor of Physical Education for Women (WG)
COLEMAN. NEWEL HOWLAND. M.S.. Associate Professor of Economics and Sociology (Ag 110)
COMISH. NEWEL HOWLAND. M.S.. Associate Professor of Economics and Sociology (Ag 110)
COOK. MARGARET FARQUHAR. Secretary of the Extension Service (Ag 128)
COPSON. GODFREY VERNON. M.S.. Associate Professor of Bacteriology: Acting Head of the Department of Bacteriology (Ag 410)
CORBETT. RUTH LILLYN. B.S.. Home Economics Demonstrator
CORCORAN. JOHN J.. B.S.. Assistant Professor of Commercial Education
CORDLEY. ARTHUR BURTON. D.Sc.. Dean of the School of Agriculture: Director of the Agricultural Experiment Station (Ag 112)
COVELL. GRANT ADELBERT. M.E.. Dean of the School of Engineering and Mechanic Arts: Professor of Mechanical Engineering (MA 1)
COWGILL. HELEN JULIA. B.S.. Assistant State Leader of Industrial Clubs. Extension Service (Ag 127)
CRUISE. MARGARET WINONA ETHEL. M.A.. Instructor in Household Science (HE 207)

DAHLBERG. HATTY. M.S.. Associate Professor of Home Economics Education (HE 100)
DAVIS. BERTHA. M.S.. Associate Professor of Home Economics Education (HE)
DAVIS. HELEN LEE. A.B.. B.S.. Professor of Household Art (HE 307)
DEARBORN. RICHARD HAROLD. A.B.. M.E.. Professor of Electrical Engineering (MH 1)
DOBELL. LILA GRACE. B.S.. Assistant in Library (L)
DOLAN. SAMUEL MICHAEL PATRICK. C. E.. Assistant Professor of Civil Engineering (MH 25)
DOXSEE. EARL DeWIT. B.S., Instructor in Agricultural Education
DREESEN. WILLIAM HENRY. Ph.D.. Assistant Professor of Economics and Sociology

* On leave of absence.

DRYDEN, JAMES, Professor of Poultry Husbandry; Chief in Poultry Husbandry, Experiment Station (F 212)
DUBACH, ULYSSES GRANT, h.D., Professor of Government and Business Law (Ag 200)
DUFFY, EDWARD MICHAEL, Manager of Business Office (Ad 7)
Retired; Assistant Commandant; Post Adjutant (A)
DUGGER, CYRUS FRANKLIN, Post Commissary Sergeant, U. S. Army,
DUNCAN, ROBERT ANDREW, A.M., Instructor in Chemistry
DUNKLEBERGER, GUSTAV, Mus.B., Instructor in Piano (Ad)

ELLSWORTH, LEWIS, Sergeant, Field Artillery, U. S. Army, Assistant Instructor in Field Artillery (A)

FAWCETT, MARY ELIZA, A.M., Dean of Women (L)
FEIKE, ZELTA FERN, B.S., Secretary to the Dean of Home Economics (HE)
FINE, SOLOMON, M.S., M.A., Instructor in Dairy Husbandry (D 204)
FITTS, EDWARD BLODGETT. Associate Professor of Dairy and Animal Husbandry, Extension Service (D 203)
FJELDSTED, EZRA JAMES, B.S., Assistant Professor of Animal Husbandry (Ag 210)
FLARIDA, EDNA MAY, Instructor in Art (Ag 402)
FULTON, JOHN, M.S., Professor of General Chemistry; Director of Chemical Laboratories (S 216)
FRITCHOFF, ALMA CATHERINE, A.B., Instructor in Household Art (HE 306)

GASKINS, GENEVIEVE BAUM, Instructor in Pipe-organ and Piano (Ad 36-A)
GASKINS, WILLIAM FREDERIC, Mus.B., Professor of Music (Ad 30)
GEORGE, LILLIAN MABEL, B.L.S., In charge of Continuations Department, Library (L)
GILBERT, EARL, M.S., Instructor in Chemistry (S 301)
GILKEY, HELEN MARGARET, Ph.D., Assistant Professor of Botany; Curator of the Herbarium (Ag 228)
GILMORE, WILLIAM JAMES, B.S.A.E., Professor of Farm Mechanics (Ag 103)
GOLDMAN, OTTO BERGER, B.S., Professor of Heat Engineering (MH 21)
GOODE, DELMER MORRISON, B.A., Assistant to College Editor (Ag 114)
GOODSPEED GEORGE EDWARD, Jr., B.S., Professor of Geology (304)
CORPORAL RICHARD GORGENSON, Field Artillery, U. S. Army, Assistant Instructor in Field Artillery (A)
GRAF, SAMUEL HERMAN, M.S., Professor of Experimental Engineering (MH 5)
GRANNING, MARTIN LOUIS, Instructor in Machine Shop (Sh 5)
GRISSEN, CARL, Instructor in String Instruments; Director of College Orchestra (Ad 37-A)
GULLY, EDWARD JAMES, Captain of Field Artillery, U. S. Army, Instructor in Field Artillery (A)

HADWEN, SIBYLLA, Housekeeper Women's Dormitories; Preceptress, Waldo Hall (WH 1)
HAIGHT, KATHERINE BARBARA, Preceptress, Cauthorn Hall (CH)
HALVORSON, W. V., Instructor in Bacteriology
HANFORD, EDWARD CORNELIUS, Major, Field Artillery, U. S. Army, Assistant Field Artillery Unit
HARGISS, HOMER WOODSON, Athletic Coach (MG)
HARVEY, EDWARD MARIS, Ph.D., Research Professor in Horticulture (Ag 132)
HAYES, DENIS, Regimental Sergeant Major, U. S. Army, Retired; Acting Adjutant (A)
HERSE, BERTHA, B.S., In charge Circulation Department in Library (L)

HICKS, JOHN FREDERICK GROSS, Ph.D., Assistant Professor of General Chemistry (S 311)
HILL, GLENN HARTMAN, Instructor in Industrial Arts (MA 5)
HILTON, FRANK JOHN, First Sergeant, Field Artillery, U. S. Army, Assistant Instructor in Field Artillery (A)
HOBBS, ERNEST CHARLES, Superintendent of Print Shop (Sh)
HODGE, WILLIAM, M.A., Assistant Professor of Organic Chemistry (S 301)
HOLGATE, HELEN LUCILE, B.S., In charge of College Exchange (Ag 113)
HORNER, JOHN B., A.M., Litt.D., Professor of History (D 207)
HUNTER, FRANK GEORGE, Regimental Supply Sergeant, Infantry, U. S. Army, Assistant Instructor in Military Science and Tactics (A)
HYSLOP, GEORGE ROBERT, B.S., Professor of Farm Crops; Chief in Farm Crops, Experiment Station (Ag 205)

JACKMAN, CHARLOTTE HARRIS, Secretary to the Dean of Engineering (MA 1)
JACKSON, ELMER POLIC, B.S., Superintendent of Buildings (MA 4)
JENSEN, ANTON EVERETT, Instructor in Farm Mechanics
JENSEN, WILLIAM ARTHUR, Executive Secretary (Ad 1)
JOHNSON, ALMA GRACE, B.S., Professor of Household Administration (HE 122)
JOHNSON, CHARLES LESLIE, B.S., Professor of Mathematics (D 304)
JOHNSTON, WILLIAM WATERS, B.S., Field Agent in Soils
JONES, JOHN SHIRLEY, M.S., Professor of Agricultural Chemistry; Experiment Station Chemist (S)
JOYCE, ALICE VIRGINIA, Assistant State Leader Boys' and Girls' Club Work

KADDERLY, WALLACE LaDUE, B.S., Farm Management Specialist. Extension Service (Ag 122)
KEISER, LURA AMELIA, B.S., Instructor in Home Economics Education; Critic Corvallis High School (HE)
KELLEY, HAROLD, B.S., Instructor in Agricultural Chemistry (S 202)
KERR, WILLIAM JASPER, D.Sc., President of the College (Ad 1)
KIDDER, IDA ANGELINE, A.B., B.L.S., Librarian (L)
KIEFFER, MARY, B.S., Instructor in Household Science (HE 206)
KOCKEN, WALTER, B.S.A., Orchard Foreman
KOOPMAN, MINNIE C., Instructor in Office Training

LATHROP, FRANK HEIDTMAN, B.S., A.B., Instructor in Entomology: Assistant Entomologist, Experiment Station (Ag)
LAWRENCE, WILLIAM EVANS, B.S., Assistant Professor of Botany (Ag 234)
LEMON, ERWIN BERTRAN, B.S., Assistant Professor of Accounting Ag 306)
LEWIS, LUCY MAY, A.B., B.L.S., Assistant Librarian (L)
LEWIS, SARAH LOUISE, M.S., Professor of Household Science (HE)
LOVETT, LESTER, B.S., Professor of Entomology; Chief in Entomology, Experiment Station (Ag 320)

MacCLATCHIE, BLANCHE, Instructor in Physical Education for Women (WG)
McCOMB, JESSIE DUNLAVY, M.S., State Leader in Home Economics, Extension Service (Ag)
McELFRESH, GERTRUDE EWING, A.B., Instructor in English (L)
McFARLAND, KATHERINE, Assistant in Household Science (WH 1)
McFAUL, HELEN, B.A., Instructor in Household Art (HE 306)
McINTOSH, CHARLES JARVIS, B.S., Assistant Professor of Industrial Journalism; Agricultural Press Editor (Ad 11)
McKAY, MARION BERTICE, M.S., Assistant Plant Pathologist, Experiment Station (Ag 233)
McLOUTH, FARLEY DOTY, B.S., Professor of Art (Ag 402)
MACPHERSON, HECTOR, Ph.D., Professor of Economics and Sociology; Director of the Bureau of Organization and Markets (Ag 110)

McWILLIAMS, HERSCHEL BRIAN, Ph.C., B.S., Instructor in Pharmacy, (S 409)
MAGINNIS, ETHA MABEL, Instructor in Stenography (Ag 305)
MAGRUDER, FRANK ABBOTT, Ph.D., Associate Professor of Government and Business Law (Ag 200)
MARIS, PAUL VESTAL, B.S., State Leader County Agriculturists, Extension Service (Ag 122)
MARTIN, MELISSA MARGARET, A.B., B.S., Instructor in Modern Languages (M 203)
MAY, LULA, B.S., Instructor in Household Art (HE)
MEHL, PAUL, M.S., Marketing Specialist
MEREEN, DONALD KENNETH, B.S., Instructor in Industrial Arts
MILAM, AVA BERTHA, Ph.B., A.M., Dean of the School of Home Economics (HE 107)
MILLER, FREDERICK WILHELM, D.V.M., Instructor in Veterinary Medicine
MILLER, HARRY GEORGE, M.S., Assistant Professor of Agricultural Chemistry Research, Experiment Station (S 210)
MILLS, EDNA LOLA, B.S., Instructor in Household Science (HE)
MONK, ARDIS THOMAS, S.B., Instructor in Physics (MH 22)
MOREHOUSE, MARGARET, B.S., Instructor in Household Art (HE 307)
MURNEEK, ANDREW EDWARD, M.S., Research Assistant in Horticulture (Ag 132)
MYERS, FRANCIS PARKER, B.S., Instructor in Experimental Engineering (F 103)

NELSON, ORAN MILTON, B.S., Associate Professor of Animal Husbandry; Associate in Animal Husbandry, Experiment Station (Ag 210)
NEWINS, HAROLD STEPHENSON, Ph.B., M.F., Associate Professor of Forestry (F)
NEWTON, CHARLES EDWARD, E.M., Dean of the School of Mines (M 204)
NICHOLS, AMBROSE REUBEN, B.S., Instructor in Industrial Education; Critic, Corvallis High School

OLIVER, ALFRED WEAVER, B.S., Instructor in Animal Husbandry
O'NEALE, LILA MORRIS, A.B., B.S., Instructor in Household Art (HE)
OWENS, CHARLES ELMER, A.M., Assistant Professor of Plant Pathology (Ag 232)

PARTELLO, JOSEPH KEPNER, Colonel of Infantry, U. S. Army; Professor of Military Science and Tactics; Commandant of Cadets (A)
PATTON, PALMER, B.S., Research Fellow in Farm Management (Ag)
PEAVY, GEORGE WILCOX, M.S.F., Dean of the School of Forestry (F)
PECK, ARTHUR LEE, B.S., Professor of Landscape Gardening and Floriculture; Superintendent of Campus and Greenhouses (Ag 328)
PETERSON, SIGURD HARLAN, B.A., Assistant Professor of English (Ad 24)
PHILLIPS, MARK CLYDE, B.M.E., Associate Professor of Mechanical Engineering; Superintendent of Heating (MH 21)
PORTER, WILLIAM McCAULLY, Instructor in Forging (Sh 12)
POTTER, ERMINE LAWRENCE, B.S., Professor of Animal Husbandry; Chief in Animal Husbandry, Experiment Station (Ag 210)
POWERS, WILBUR LOUIS, M.S., Professor of Soils; Chief in Soils, Experiment Station (Ag 202)
PRENTISS, SARA WATT, B.S., Instructor in Household Science (HE 206)
PRESTON, ROBERT, M.A., Instructor in General Chemistry (S)

RAWSON, MERRILL OLIVER, Ph.C., B. S., Instructor in Pharmacy (S)
REED, EDWIN THOMAS, B.S., A.B., College Editor (Ag 114)
RESSLER, EDWIN DEVORE, A.M., Dean of the School of Vocational Education; Professor of Education; Director of the Summer School (F 200)
RICHARDS, DALE EVERETT, B.S., Assistant Professor of Animal Husbandry (Ag 210)

RIDENOUR, AMBROUSE ELLIOTT, B.S., Instructor in Foundry Practice (Fd 16)
ROBERGE, JOSEPH ETIENNE, First Sergeant, Infantry, U. S. Army, Assistant Instructor in Military Science and Tactics (A)
ROBINSON, MABLE, Secretary to the Dean of Commerce (Ag 220)
ROBINSON, LAWRENCE EUGENE, B.S., Assistant Professor of Rural Architecture (S 312)
ROBINSON, REGINALD HEBER, M.S., Associate Professor of Agricultural Chemistry Research, Experiment Station (S 210)
ROSENCRANS, MERLE WILLIAM, B.S., Instructor in Civil Engineering
RUFENER, LOUIS AUGUST, Ph.D., Assistant Professor of Economics and Sociology (Ag)
RUZEK, CHARLES VLADIS, B.S.A., Professor of Soil Fertility; Associate Professor of Soils, Experiment Station (Ag 108)
RYDER, AGNES, U. S. Department of Agriculture; Seed Analyst. (Ag 105)

SCHNEIDER, LOUISE ALBERTA, Instructor in Household Art (HE 306)
SCHOTH, HARRY AUGUST, M.S., Scientific Assistant U. S. Department of Agriculture, Forage Investigations (Ag 205)
SCHUSTER, CARL EPHRIAM, B.S., Assistant Professor of Horticulture, Extension Service
SCOTT, MAYLON EDWARD, First Lieutenant of Field Artillery, U. S. Army, Instructor in Field Artillery (A)
SCUDDER, HENRY DESBOROUGH, B.S., Professor of Farm Management; Chief in Farm Management, Experiment Station (Ag 107)
SEYMOUR, HARRY CASE, State Leader Industrial Clubs, Extension Service (Ag 127)
SHARP, WILLIAM FLETCHER, Colonel, Field Artillery, U. S. Army, In charge Field Artillery Unit (A)
SHEPHERD, FRANK HENRY, A.M., Professor of Industrial Education (F)
SIMMS, BENNETT THOMAS, D.V.M., Professor of Veterinary Medicine; Chief in Veterinary Medicine, Experiment Station (D 209)
SIMS, STUART HOBBS, B.S. in C.E., Professor of Civil Engineering
SKELTON, GORDON VERNON, C.E., Professor of Highway Engineering (MH 27)
SMART, WILLIAM ANDERSON, B.S., Research Assistant in Horticulture and Entomology (Ag)
SMITH, DEXTER RALPH, B.S., Instructor in Civil Engineering (Sh 29)
SMITH, EDWIN MONROE, Chief Clerk, Business Office (Ad 4, 5, 6)
SMITH, M. ELLWOOD, Ph.D., Dean of the Service Departments (L)
SMITH, VALDA EVELINE, A.B., Instructor in Chemistry (S 311)
SNOW, FRANCIS LAWRENCE, Professor of Industrial Journalism (Ad 11)
SPOERRY, GOTTFRIED WELLS, Captain of Infantry, U. S. Army, Supply Officer and Acting Quartermaster (A)
STRONG, RALPH KEMPTON, Ph.D., Professor of Industrial Chemistry (M 105)
SYKES, GEORGE FRANCIS, A.M., Professor of Zoology and Physiology. (Ag 322)

TARTAR, NICHOLAS, B.S., Assistant Professor of Mathematics (D 309)
TAYLOR, HAROLD ROY, B.S.A., Acting Superintendent John Jacob Astor Branch Experiment Station
TAYLOR, J. C., Fireman (NH)
TAYLOR, ETHEL, A.B., Instructor in Modern Languages
TEETER, THOMAS ANDERSON HENDRICKS, B.S., Professor of Irrigation Engineering (MH 21)
TENNANT, HAROLD MANLEY, Registrar (Ad 7)
THAYER, DARWIN GREEN, B.S., Instructor in Woodworking
THOMAS, CHARLES EDWIN, M.E., Assistant Professor of Experimental Engineering (MH 5)
TORGERSON, EDWARD FRITCHOFF, B.S., Assistant Professor of Soils (Ag 109)
TUCK, JOHN, Field Agent in Soils

VANCE, HERBERT TOWNSEND, Professor of Office Training (Ag)
VAN GROOS, JOHN ALBERT, M.S., Instructor in Mathematics (D)
VAN KIRK, MARY, Instructor in Household Art (HE 306)
VANORSDEL, JOHN POMOROY, Professor of Logging Engineering (F)

WELD, EMMA SKINNER, Ph.B., Instructor in Household Art (HE 207)
WENK, Morris, A.M., E.E., Instructor in Mechanical Engineering
WESTOVER, EDGAR LeROY, B.S., Field Dairyman, Extension Service (D 203)
WETTENGEL, EVERETT BROCKWAY, Captain of Field Artillery, U. S. Army, Instructor in Field Artillery
WHILLOCK, BERTHA ALICE, B.S., Instructor in Office Training (Ag 301)
WHITAKER, LESLIE C., B.S., Assistant in Bacteriology (Ag)
WIEGAND, ERNEST HERMAN, B.S., Assistant Professor of Horticultural Research (Ag)
WIEMAN, JOHN SAMUEL, B.S., Research Fellow in Horticulture (Ag)
WIGHT, HOWARD MARSHALL, M.S., Instructor in Zoology (Ag 314)
WILCOX, ERNEST ROSCOE, B.S., Met.E., Assistant Professor of Mining (M)
WILCOX, LYLE PORTER, B.S.A., Crop Pest Assistant
WILKES, CLAIR, B.S., Instructor in Farm Management (Ag)
WILKINS, FRANKLIN SCOTT, M.S., Assistant Professor of Farm Crops (Ag)
WILLIAMS, E. E., A.B., Instructor in Modern Languages
WILSON, LYLE PORTER, B.S.A., Research Assistant in Horticulture
WILTSHIRE, CHARLES GEORGE, Instructor in Plumbing and Steam Fitting
WING, LEON WALTON, B.S., M.A., Instructor in Dairy Husbandry (D)
WININGER, RUTH, Instructor in Physical Education for Women (WG)
WOOSTER, LAWRENCE FISHER, B.S.A., Assistant Professor of Electrical Engineering; Superintendent of Light and Power (MH 1)
WORKINGER, CLYTIE MAY, Secretary to the Dean of the School of Vocational Education (F 200)

YODER, JOSEPH BENJAMIN, B.S., Instructor in Mechanical Drawing

ZELLER, SANFORD MYRON, Ph.D., Assistant Plant Pathologist
ZIEFLE, ADOLPH, Ph.C., M.S., Dean of the School of Pharmacy (S 409)

CATALOGUE OF STUDENTS

(The following abbreviations are used to indicate the curriculum in which the student is registered and the classification within the curriculum: Agri., Agriculture; C. E., Civil Engineering; Com., Commerce; H. E., Home Economics; E. E., Electrical Engineering; For., Forestry; L. E., Logging Engineering; H. E., Highway Engineering; I. E., Irrigation Engineering; I. A., Industrial Arts; M. A., Mechanic Arts; M. E., Mechanical Engineering; Min., Mining Engineering; Phar., Pharmacy; Fr., Freshman; Soph., Sophomore; Jr., Junior; Sr., Senior; Voc., Vocational; Opt., Optional; Spec., Special.)

GRADUATE STUDENTS

Name	Course	Home Address
Allen, Lottie Mentzer	H. E.	Corvallis
Allinger, Henry Wesley	Agri.	Corvallis
Amis, Albert Hope	Agri.	San Fernando, Calif.
Bell, James C.	Agri.	Kendall, Mont.
Davis, Kerane Lee	H. E.	Corvallis
Hull, Velma Edwards	H. E.	Mayville
McKillips, Olive Hamilton	H. E.	Corvallis
Minton, Albert Nils	Com.	Salem
Myers, Stanley Howard	E. E.	Corvallis
Nevius, John R.	Agri.	Long Beach, Calif.
Patton, Palmer	Agri.	Chicago, Ill.
Reber, Albert Roy	Agri.	Kansas City, Kans.
Rogers, Mary Alice	Com.	Corvallis
Steinmetz, Avery Harold	Agri.	Portland
Stone, Herman Al	Agri.	Woodburn
Straughan, Orson L.	Agri.	Pendleton
Sweeney, Phillip	Agri.	Walla Walla, Wash.
Varma, Sanjihi Ram	Agri.	Botala, Punjalo, India
Wilson, Sinclair Albert	Com.	Linnton

UNDERGRADUATE STUDENTS

Name	Course	Rank	Home Address
Abbott, Charles Edward	C. E.	Fr.	Jacksonville
Abbott, Christine Gordon	H. E.	Sr.	Caldwell, Idaho
Abbott, Ernest Victor	Com.	Fr.	Ashland
Abbott, Gurnsey Harlan	Agri.	Jr.	Parma, Idaho
Abegg, Fred Anton	Agri.	Jr.	Portland
Abraham, Dorothea	H. E.	Soph.	Roseburg
Abraham, Gains Wade	M. E.	Voc.	Gaston
Abraham, Ray L.	Phar.	Fr.	Blaine, Wash.
Abscher, Albert	Agri.	Jr.	Portland
Adams, Carl Knight	C. E.	Fr.	Madoel, Calif.
Adams, Francis Bernard	M. E.	Voc.	Portland
Adams, James Arthur	Min. E.	Fr.	St. Helens
Adamson, Robert Kennedy	M. E.	Voc.	Portland
Adkinson, Russell Sage	Agri.	Soph.	El Toro, Calif.

Name	Course	Rank	Home Address
Aeils, Margaret Katheryn	Com.	Soph.	Dayton, Wash.
Agee, Leta Violet	H. E.	Soph.	Pendleton
Agosti, Alfred P.	M. E.	Sr.	Portland
Ahlskog, Iver	E. E.	Fr.	Raymond, Wash.
Ahlson, Alete	H. E.	Soph.	Hillsdale
Ahlson, Charles Boone	Agri.	Sr.	Hillsdale
Alber, Harold Leroy	M. E.	Voc.	Salem
Alcorn, Dale Seymour	Agri.	Fr.	Corvallis
Alderman, Delmar Von	M. E.	Voc.	McMinnville
Alderman, Urie Sampson	Agri.	Voc.	Dayton
Aldrich, Frederick C.	Com.	Soph.	Albany
Aldrich, Horace Burton	Agri.	Fr.	Silver Lake
Aldrich, Roy	M. E.	Soph.	Tacoma, Wash.
Alexander, Ethel Marjorie	H. E.	Jr.	Salem
Alexander, Harry James	Agri.	Jr.	Chehalis, Wash.
Alicante, Marcos	Agri.	Jr.	Iloilo, Philippines
Alford, Otto	C. E.	Fr.	Harrisburg
Allen, Alta Kathlyn	H. E.	Fr.	Shedd
Allen, Arthur Francis	Com.	Fr.	Corvallis
Allen, Carl Curtis	Agri.	Voc.	Saginaw
Allen, Davis J.	Agri.	Voc.	Corvallis
Allen, Ella Lorene	H. E.	Soph.	Lostine
Allen, Irving Courtney	E. E.	Voc.	Portland
Allen, Rea Elizabeth	Phar.	Jr.	Corvallis
Allen, Sam S.	For.	Voc.	Portland
Allphin, Eldon Roscoe	Agri.	Voc.	Albany
Alstadt, Geo. John	For.	Jr.	Portland
Allsup, Thelma Noriene	H. E.	Voc.	Mt. Vernon
Almquist, Edwin Alfred	M. E.	Fr.	Portland
Altimus, Otis Ellsworth	C. E.	Fr.	Portland
Amort, Alvina Marie	H. E.	Voc.	Corvallis
Anderson, Ellen Caroline	H. E.	Jr.	Portland
Anderson, Esther Isabelle	H. E.	Spec.	Salem
Anderson, Hedvig Pauline	H. E.	Voc.	Tangent
Anderson, Irene Frances	H. E.	Fr.	McMinnville
Anderson, Leander	M. E.	Voc.	South Bend, Wash.
Anderson, Oscar Eugene	Com.	Fr.	Linnton
Anderson, Otto Envin	Agri.	Soph.	Ilwaco, Wash.
Anderson, Virgirl Antias	M. E.	Fr.	Salem
Anderson, Wayne Jalmer	M. E.	Voc.	Astoria
Andrews, Abby	H. E.	Jr.	Corvallis
Andrews, Calvin Ewart	Agri.	Soph.	San Luis Obispo, Calif.
Andrews, Milton Sylvester	M. E.	Voc.	Portland
Andrews, Seth R.	Phar.	Spec.	Auburn, Wash.
Andruss, Ormond Charles	M. E.	Voc.	Gardiner
Angell, Lowell Everett	M. E.	Voc.	Portland
Anlauf, Chester Otto	Com.	Fr.	Portland

Name	Course	Rank	Home Address
Annala, Aalto Zachary	M. E.	Voc.	Hood River
Annala, John Rudolph	Agri.	Fr.	Hood River
Appelgren, Fredrik Waldemar	M. E.	Fr.	Portland
Appelman, Ruth Marguerite	Com.	Soph.	Corvallis
Appleby, Mary Emily	Com.	Fr.	Portland
Arbogast, Guy Lowell	Agri.	Voc	Stanfield
Arbogast, John Lewis	Opt.		Stanfield
Archibald, Glen	M. E.	Fr.	Corvallis
Archibald, Raymond	C. E.	Fr.	Albany
Areola, Cecilio Carbonell	Agri.	Fr.	Binalonan Pangasman, P. I.
Arey, Hebert Hopkins	C. E.	Fr.	Timber
Armstead, Amy Isabella	H. E.	Sr.	Portland
Armitstead, Army Isabella	H. E.	Sr.	Portland
Ariss, Dorothy Crosfield	H. E.	Jr.	Portland
Armstrong, Sam Walter	M. E.	Jr.	Bandon
Arnhart, Owala Corinne	Phar.	Fr.	Florence
Arnold, Harry Hamilton	M. E.	Voc.	Oakland
Arnold, John Cecil	M. E.	Voc.	Oakland
Arthur, Ernest Chas.	Agri.	Soph.	Portland
Ash, Julian Samuel	Com.	Fr.	La Grande
Atkinson, Francis Decker	Agri.	Fr.	La Jolla, Calif.
Atkinson, Louise Decker	H. E.	Jr.	Corvallis
Atwood, Alice Lillian	H. E.	Jr.	Corvallis
Atwood, Dale D.	Agri.	Fr.	Jerome, Idaho
Atwood, Harlow Edward	Agri.	Fr.	Corvallis
Atwood, Hazel Julian	H. E.	Fr.	Corvallis
Auld, Jeanne Leroux	H. E.	Spec.	Oakland, Calif.
Austin, Lawrence Wesley	M. E.	Fr.	Salem
Avery, Donald Stafford	M. E.	Voc.	Sissom, Calif.
Avery, Joseph Conant	C. E.	Soph.	Klamath Falls
Avrit, Roy Calvin	E. E.	Soph.	Corvallis
Axtell, Edith Elizabeth	Opt.		Corvallis
Ayres, Leonard Harry	Com.	Fr.	Wamic
Backman, Emil J.	Agri.	Soph.	Marshfield
Bacon, Runa Elizabeth	Com.	Sr.	La Grande
Badger, Raymond Eugene	Agri.	Soph.	Oakland, Calif.
Badley, Joy Elmore	Agri.	Fr.	Portland
Baertlein, Gorden John	M. E.	Voc.	Lebanon
Bagley, Elmer Ellsworth	Com.	Fr.	Ashland
Bailey, Clarke Edward	M. E.	Fr.	Portland
Bailey, Hazel Rachel	H. E.	Fr.	Cathlamet, Wash.
Bailey, Lawrence Dudley	For.	Fr.	Portland
Bailey, Lester Wm.	Agri.	Soph.	Gladstone
Bailey, Lewis James	M. E.	Fr.	Portland
Bailey, Margaret Edna	Com.	Jr.	Junction City
Bailey, Wm. Harvey	Agri.	Fr.	Roseburg
Bails, Philip Alfred	E. E.	Voc.	Corvallis
Bailiff, Edith D.	Com.	Jr.	Corvallis

Name	Course	Rank	Home Address
Bair, Ray Elmer	I. A.	Spec.	Hood River
Bain, Walter Marion	C. E.	Jr.	Portland
Baker, Alden Lawrence	M. E.	Voc.	Ash
Baker, Emmet Melvine	M. E.	Voc.	Sherwood
Baker, Harry	M. E.	Voc.	Corvallis
Baker, James Henry	M. E.	Voc.	Oakland
Baker, John Walter	M. E.	Voc.	Creswell
Baker, Raymond Victor	For.	Fr.	Portland
Balderree, Caryl Dorothy	Com.	Soph.	Corvallis
Baldwin, Arthur Erwin	M. E.	Fr.	Portland
Ball, Dewey Lawton	Com.	Fr.	Eugene
Ball, Elmer Edwin	M. E.	Voc.	Turner
Ball Marjory	Com.	Fr.	Toledo
Ball, Robert Louis	Phar.	Fr.	Corvallis
Ball, Ted Maurice	Agri.	Soph.	Corvallis
Ball, Welman Aubrey M.	M. E.	Fr.	Coquille
Ballenger, Glenn	M. E.	Voc.	Portland
Banks, Reno Parkman	Agri.	Jr.	Brookline, Mass.
Barbare, Peter Jerome	M. E.	Fr.	Portland
Barber, Joseph Eugene	I. A.	Voc.	Salem
Barker, Augustus Dodge	Com.	Soph.	Portland
Barnes, Roy Earl	Agri.	Voc.	Salem
Barney, Ray Archie	Agri.	Voc.	Oregon City
Barnum, Arline Mildred	H. E.	Soph.	Grass Valley
Barnum, Marion Elizabeth	Com.	Soph.	Medford
Barrett, Edmond Montgomery	Agri.	Fr.	Ashland
Barrett, Marjorie Marian	H. E.	Sr.	Portland
Bartel, Gayle	M. E.	Fr.	Alsea
Bartels, Fred J.	Min.	Spec.	Cottage Grove
Bartholomew, Buell Ann	Com.	Fr.	Corvallis
Bartholomew, Frank Harmon	Com.	Fr.	Portland
Barthlemay, Wm. John	Min.	Fr.	Boring
Bartlett, Raymond LeRoy	Com.	Soph.	Portland
Bartlett, Robert Renneslear	M. E.	Voc.	Astoria
Bartlett, Willard Stephen	M. E.	Voc.	Salem
Bartlett, Willis Henry	C. E.	Voc.	Lamoine, Calif.
Bateman, Joseph Neilson	E. E.	Fr.	Medford
Bartmess, Roy Leslie	Agri.	Voc.	Portland
Bartruff, Eric Edwin	Agri.	Voc.	Salem
Bartu, Frank	M. E.	Sr.	Scio
Barzee, Eugene	M.E.	Voc.	Beaverton
Barzee, Wilma	Com.	Fr.	Corvallis
Bashaw, Vernon Hester	M. E.	Voc.	Portland
Bates, Jean Clara	Com.	Fr.	Portland
Battaglia, Frank	M. E.	Fr.	Portland
Bauer, Albert	C. E.	Fr.	Portland
Bauer, Pansy Howser	Com.	Spec.	Corvallis
Bayly, Carrie M.	Com.	Spec.	Eugene

Name	Course	Rank	Home Address
Bayly, Elmer Lawrence	C. E.	Fr.	Eugene
Beagle, Glenn Elwood	Agri.	Jr.	Kerby
Beal, Phillipp Brians	Phar.	Fr.	Vancouver, Wash.
Bealey, William Herbert	M. E.	Voc.	Ontario, Calif.
Beall, Malcolm John	Agri.	Jr.	Portland
Beals, Erma Elizabeth	H. E.	Jr.	Corvallis
Beals, Ray William	M. E.	Voc.	Alsea
Beals, Russell Ellis	Com.	Fr.	Forest Grove
Bean, Bruce Chesley	Agri.	Fr.	Colton, Calif.
Bean, Ellis E.	M. E.	Voc.	La Grande
Bean, Lewis Ney	M. E.	Voc.	Vale
Beard, Elmer Jewett	M. E.	Voc.	Vancouver, Wash.
Beard, Harry Lunden	Opt.		Corvallis
Beare, Edward Norman	M. E.	Voc.	Portland
Beatie, Charles Fountain	C. E.	Sr.	Oregon City
Beauchamp, Bernard Deane	M. E.	Voc.	Freewater
Beck, John George	Min.	Soph.	Astoria
Beck, J. Ralph	Agri.	Sr.	Corvallis
Becken, Margaret	Com.	Voc.	Astoria
Becker, Loretta Clare	Phar.	Soph.	Corvallis
Becker, Reuben Edward	Agri.	Voc.	Independence
Bedell, Richard	M. E.	Fr.	Alsea
Bedrick, Myer	Com.	Fr.	Fall River, Mass.
Bedynek, John Placidus	I. A.	Voc.	Corvallis
Beeler, Frank Grady	M. E.	Voc.	Warren
Beeson, Grant	M. E.	Voc.	Mayville
Begg, Ronald Chas.	M. E.	Voc.	John Day
Behnke, Carl H.	Agri.	Sr.	Sunnyside, Wash.
Belisle, Edmond	M. E.	Voc.	Vancouver, Wash.
Bell, Burton Charles	C. E.	Voc.	Rickreall
Bell, Charles Kenneth	M. E.	Voc.	Salem
Bell, Don Afair	M. E.	Voc.	Beaver
Bell, George Foster	Agri.	Soph.	Corvallis
Bell, James Douglas	C. E.	Spec.	Pioneer
Bellinger, Ralph Newquist	M. E.	Fr.	Lebanon
Belmore, Ralph Westley	E. E.	Fr.	Portland
Belt, Nina McColl	H. E.	Spec.	Corvallis
Belt, Walter K.	Phar.	Jr.	Corvallis
Belts, Chas. Lionel	M. E.	Voc.	Pendleton
Belz, Lonnie	M. E.	Voc.	Camas, Wash.
Bendler, Georgina Bertha	H. E.	Sr.	Cornelius
Benedict, Arthur Harold	M. E.	Soph.	Hermiston
Benner, Robert Lenox	Agri.	Soph.	Oakland, Calif.
Bennet, Charles Stuart	For.	Fr.	Dallas
Bennett, Meryle P.	Com.	Fr.	Seattle, Wash.
Bennett, Olive Carolyn	H. E.	Spec.	Laurel
Bennett, Warren Caster	M. E.	Fr.	Klamath Falls
Bentley, Robert Allen	M. E.	Voc.	Baker
Bentson, Clifford Byron	Phar.	Fr.	Silverton

Name	Course	Rank	Home Address
Beougher, Ethel Olive	H. E.	Soph.	Albany
Berchtold, Florence	H. E.	Sr.	Corvallis
Berg, Edward Joseph	M. E.	Voc.	Portland
Berg, Winifred Barbara	H. E.	Fr.	Neverstill
Bergsvik, Loyalty	C. E.	Voc.	Portland
Bernard, Bertram Lawrence	Agri.	Fr.	Vancouver, B. C.
Bernhardt, John	M. E.	Voc.	Cushman
Berni, Holt Wilson	Log. E.	Fr.	Portland
Bernstein, Joseph Chas.	Com.	Voc.	Portland
Berry, Marie Evans	H. E.	Fr.	Hood River
Bertsch, Berton Edwin	M. E.	Voc.	Corvallis
Best, Chas. Acheson	M. E.	Voc.	Medford
Beswick, Belle Mollie	H. E.	Spec.	Corvallis
Beswick, Frank	Agri.	Spec.	Liberty, Mo.
Betzing, Rudolph Ludwig	M. E.	Voc.	Vancouver, Wash.
Bevens, Dorval V.	M. E.	Fr.	Corvallis
Bewley, James Frank	M. E.	Voc.	Sodaville
Beihler, Bessie Marion	H. E.	Fr.	Lynden, Wash.
Bidwell, Frank Deane	M. E.	Fr.	North Powder
Biersdorf, Edgar Alwin	Agri.	Fr.	Portland
Biermann, Raymond Frank	Com.	Voc.	Oregon City
Billeter, Calvin	E. E.	Soph.	Portland
Billinglsey, Neva Ione	H. E.	Jr.	Ontario
Bingaman, Harold Franklin	M. E.	Voc.	Imbler
Bingham, Curtis Harry	Agri.	Soph.	Alhambra, Calif.
Bingham, Marshal Lackey	M. E.	Voc.	Portland
Binns, Mary Anderson	H. E.	Spec.	Corvallis
Bisher, Glenn S.	M. E.	Voc.	Halfway
Bitney, Dewey Hobson	M. E.	Soph.	Wodburn
Black, Grace Mae	Com.	Voc.	Mt. Vernon
Black, Iva Helen	H. E.	Spec.	Pendleton
Black, Kathleen	H. E.	Sr.	Portland
Black, Theodore Eddison	Phar.	Fr.	The Dalles
Black, William Plummer	Agri.	Spec.	Caro, Mich.
Blaid, Robert Morrison	Agri.	Fr.	Marshfield
Blakney, Leslie Baxter	E. E.	Fr.	Milwaukie
Blann, Leah	Com.	Spec.	Mitchell
Bleakney, Francis Valentine	M. E.	Voc.	Maupin
Bledsoe, Eugene Vincil	M. E.	Fr.	Long Beach, Calif.
Blinn, Geo. Mack	M. E.	Voc.	Prairie City
Blinn, Robert Murray	M. E.	Voc.	Pasadena, Calif.
Bloom, Daniel	M. E.	Voc.	Portland
Boak, Gail Carrie	H. E.	Fr.	Bandon
Bobzein, Helen Carolyn	H. E.	Soph.	Grants Pass
Bock, Fred Neale	M. E.	Fr.	Condon
Bodle, Orval M.	M. E.	Jr.	Bay City
Bodner, Michael James	E. E.	Fr.	Spion Kop, Mont.
Boetticher, Marion Louis	M. E.	Soph.	Albany

Name	Course	Rank	Home Address
Boge, Chas. E.	Min.	Soph.	Cornelius
Boge, Frank Henry	Agri.	Spec.	Cornelius
Bolt, Leland Eddy	M. E.	Fr.	Freewater
Bolton, Genevieve	H. E.	Sr.	Seattle, Wash.
Bonesteele, Ernest Francis	M. E.	Fr.	Tigard
Bonesteele, Russell Fred	M. E.	Fr.	Tigard
Bonney, Harlan Lawrence	M. E.	Voc.	Lebanon
Boord, Opal Irene	H. E.	Jr.	Corvallis
Bonner, Jone Henry	Agri.	Fr.	Crystal
Borrelli, Ralph	Com.	Voc.	Portland
Booth, Emmett	E. E.	Fr.	McMinnville
Boquist, August Clarence	Com.	Fr.	Tillamook
Bowden, Florence	Com.	Spec.	Corvallis
Bowersox, John Maxwell	Phar.	Fr.	Monmouth
Bowker, Morris Crawford	Com.	Fr.	Roseburg
Bowman, Frank George	Com.	Fr.	Portland
Bowman, Ivan Marion	Agri.	Voc.	Langlois
Boyakin, Joseph Simpson	M. E.	Soph.	Nehalem
Boyd, Kenneth Arvid	M. E.	Fr.	Brownsville
Boyce, Ruth Esther	Com.	Soph.	John Day
Boyer, Ralph Sidney	Agri.	Voc.	Philadelphia
Boylan, Lester Mervin	M. E.	Voc.	Oregon City
Boyles, Forrest Ewing	M. E.	Voc.	Sodaville
Bradbury, Aubra Edna	Com.	Fr.	Klamath Falls
Bradford, Gordon Martell	Com.	Fr.	Grants Pass
Bradford, Harold Irwin	M. E.	Voc.	Portland
Bradley, David Wells	M. E.	Voc.	Monroe
Bradley, Pearl R.	H. E.	Jr.	Woonsocket, S. D.
Brander, Alexander	Agri.	Voc.	Huntley, Scotland
Brandt, Carl Herman	Com.	Fr.	Weston
Brandon, Ralph Leo	Com.	Voc.	Medford
Brannan, Walter Daniel	C. E.	Fr.	Salem
Branson, Harlan Morse	M. E.	Voc.	Salem
Branstetter, Wm. Jennings	M. E.	Voc.	Echo
Bratt, Verne Perry	M. E.	Voc.	Baker
Braun, Elsie M.	H. E.	Jr.	Portland
Brayton, Everett Hiram	E. E.	Voc.	Medford
Breithaupt, Alva	Agri.	Sr.	Portland
Bremer, John Herman	M. E.	Voc.	Sherwood
Brennan, Andrew Frank	For.	Jr.	Boise, Idaho
Brennan, Claude Cecil	M. E.	Voc.	Paulina
Brennan, Frank Lawrence	M. E.	Voc.	Portland
Brettell, Harold Ruthford	M. E.	Voc.	Lents
Brewer, Marjorie M.	H. E.	Fr.	Portland
Brewer, Ruth Hannah	H. E.	Jr.	Chemawa
Brewster, Ray Lewis	Agri.	Jr.	Wheaton, Ill.
Bridges, Robert Lloid	M. E.	Fr.	Roseburg
Briggs, Edward Everett	Agri.	Fr.	Los Gatos, Calif.

Name	Course	Rank	Home Address
Briggs, Elam Owen	M. E.	Voc.	La Grande
Briggs, Merton Benjamin	E. E.	Fr.	Salem
Bright, Bernice	Com.	Fr.	The Dalles
Brimmer, Porter Amos	Agri.	Fr.	Rialto, Calif.
Brinn, James Orville	Agri.	Voc.	Yankton
Brisebat, Louis Miguel	M. E.	Fr.	Sunnyvale, Calif.
Britt, Herbert Samuel	Com.	Fr.	Roseburg
Broadway, Clifton Prentice	Phar.	Spec.	Jonesboro, Ark.
Broders, Chester O.	Com.	Fr.	Corvallis
Brokke, Helmer Gerhard	M. E.	Voc.	Silverton
Brooke, James Kenneth	C. E.	Fr.	Portland
Brookings, Paul Dewey	M. E.	Voc.	Bend
Brothers, Mable Ellen	H. E.	Fr.	Long Beach, Calif.
Brounstein, Nathan	M. E.	Voc.	Portland
Brown, Eldon M.	Agri.	Fr.	Amity
Brown, Frank Rively	Agri.	Voc.	Salem
Brown, Frances Roberta	H. E.	Jr.	Haines
Brown, Carl M.	Agri.	Voc.	Salem
Brown, George Edward	M. E.	Voc.	Salem
Brown, Luther Townsend	Agri.	Voc.	Condon
Brown, Olga Stoller	H. E.	Spec.	Camas, Wash.
Brown, Paul Pemberton	M. E.	Fr.	Condon
Brown, Philipp Arthur	M. E.	Voc.	Vancouver, Wash.
Brown, Roland S.	Com.	Soph.	St. Helens
Brown, Ruth Elizabeth	H. E.	Spec.	Los Angeles, Calif.
Brown, Shirley Grace	H. E.	Soph.	Corvallis
Brown, Walter Raleigh	M. E.	Fr.	Gresham
Bruce, Herbert Newman	I. A.	Voc.	Astoria
Brugger, Anna Marie	H. E.	Soph.	Gresham
Brumbaugh, Atla	Com.	Voc.	Silver City, Idaho
Brunner, Roland Walter	Com.	Voc.	Portland
Bryant, Theodore Lawrence	Min.	Soph.	Ladysmith, B. C.
Brye, Irene Anna	H. E.	Jr.	Auburn, Calif.
Buchanan, John Dudley	M. E.	Voc.	Portland
Buchner, Lynn C.	M. E.	Soph.	New Plymouth, Ida.
Buchner, Merle Conrad	Com.	Fr.	Albany
Buchner, Mertice Benjamin	Com.	Fr.	Albany
Buchner, Olive Dorothea	H. E.	Soph.	Salem
Bucklin, Percy	Com.	Fr.	Hood River
Buell, Chester Albert	Com.	Soph.	Forest Grove
Buhman, Lawrence Orlef	M. E.	Voc.	Wasco
Bukowsky, George Carl	M. E.	Voc.	Portland
Bullard, Frank Wesley	Agri.	Soph.	Bullards
Bumbaugh, Harold L.	E. E.	Fr.	Coffeyville, Kans.
Bunting, Clyde Ellis	Com.	Fr.	La Grande
Burch, Ben P.	Chem. E.	Fr.	Dundee
Burcham, Clyde Anderson	Agri.	Fr.	Cottage Grove
Burchell, Hulda Catherine	Com.	Jr.	Corvallis

Name	Course	Rank	Home Address
Burdick, Carrol Davis	M. E.	Voc.	Portland
Burgard, Alfred Norman	M. E.	Voc.	Portland
Burdick, Vurl Clarence	Agri.	Voc.	Portland
Burgy, Augustus Francis	M. E.	Voc.	Vancouver, Wash.
Burkholder, Belle	Com.	Spec.	Cottage Grove
Burkholder, Charles S.	I. A.	Voc.	Corvallis
Burnap, Florence DeEtta	H. E.	Jr.	Corvallis
Burns, Earl Hubert	M. E.	Voc.	Portland
Burns, Frederick William	Agri.	Voc.	Boardman
Burns, Robert Andrew	E. E.	Fr.	Astoria
Burns, Mason Lawrence	M. E.	Voc.	Portland
Burns, Tom	M. E.	Fr.	Portland
Burres, Zola Lee	M. E.	Voc.	Condon
Burris, Fred	Agri.	Voc.	Corvallis
Bursell, Hazel Olivia	H. E.	Fr.	Monmouth
Burton, Ralph Emanuel	Agri.	Voc.	Silver Lake
Busch, Esther Marie	H. E.	Fr.	Salem
Bushong, Earl Clinton	M. E.	Voc.	St. Helens
Bush, Zetta Zeretta	H. E.	Jr.	Hoskins
Butler, Arnel Porter	For.	Fr.	Medford
Butler, Bessie Viola	H. E.	Spec.	Corvallis
Butler, Edmond Glenn, Jr.	Agri.	Voc.	Ontario
Butler, Guy H.	Chem. E.	Soph.	Albany
Butler, Orval Lawrence	Agri.	Spec.	Yakima, Wash.
Butler, Rexford Gray	M. E.	Voc.	Portland
Butler, Walter Ernest	M. E.	Voc.	Scottsburg
Butte, Henry	Chem. E.	Fr.	Salem
Buttervich, Vincent Floyd	Agri.	Jr.	Fairbanks, Alaska
Butterworth, Harold H.	Com.	Spec.	Pasadena, Calif.
Butts, Albert Russell	M. E.	Voc.	Yankton
Buxton, Henry Oliver	Agri.	Fr.	Molalla
Buumala, Otto John	M. E.	Voc.	Astoria
Bybee, Coyle Eugene	Agri.	Fr.	Chico, Calif.
Cain, Leonard Thomas	Agri.	Fr.	Nehalem
Calef, Carl Stevens	C. E.	Fr.	Eugene
Callahan, David Joseph	Com.	Fr.	Portland
Calvert, Ralph Jennings	Agri.	Fr.	Portland
Camberg, Herbert Travis	Com.	Voc.	Birkenfeld
Cameron, Beatrice Lorraine	Com.	Voc.	Corvallis
Cameron, Clinton Ephiram	Com.	Voc.	Roseburg
Cameron, Orey	M. E.	Voc.	Hood River
Campbell, Carvel Churchman	Com.	Voc.	Dallas
Campbell, Donald Barcher	Chem. E.	Fr.	Portland
Campbell, Falconer Everett	Agri.	Voc.	Portland
Campbell, James S.	M. E.	Fr.	Roseburg
Campbell, John Earl	Phar.	Fr.	Amity
Campbell, Mary Pearl	H. E.	Fr.	Roseburg
Campbell, Ralph Henry	Agri.	Soph.	Amity

Name	Course	Rank	Home Address
Campbell, Ruby Elizabeth	H. E.	Soph.	Puyallup, Wash.
Canedy, Marthellen Grant	Agri.	Fr.	Everson, Wash.
Cannard, Albert Gustive	M. E.	Voc.	St. Johns
Cannon, Clarence Dempster	E. E.	Fr.	Oregon City
Cannon, Roy Edwin	Opt.		Corvallis
Canny, Elisha Phillip	M. E.	Voc.	Boring
Cantrall, Edward Levi	E. E.	Fr.	Klamath Falls
Cantrall, Otto Lamar	E. E.	Jr.	Ruch
Carbonell, Hermogennes	Com.	Fr.	Bacnotan La Union, P. I.
Carder, Dean Samuel	Min.	Soph.	Medford
Cardwell, Arthur Sidney	Agri.	Fr.	Long Creek
Carey, Marion William	Agri.	Voc.	Halsey
Carlberg, Axel	Com.	Fr.	Portland
Carlisle, Harold Perry	M. E.	Voc.	Ogallala, Nebr.
Carlson, Arthur Albert	Com.	Jr.	Portland
Carlson, Elnar William	I. A.	Voc.	Astoria
Carlson, Jennie G.	H. E.	Soph.	Marshfield
Carlson, Roy Victor	M. E.	Voc.	Astoria
Carlysle, Mildred	H. E.	Spec.	Forest Grove
Carnes, Clarke Herman	Agri.	Voc.	North Powder
Carnes, Dierdre	H. E.	Jr.	North Powder
Carpenter, Archie Everett	M. E.	Voc.	Veneta
Carpenter, Emil	M. E.	Voc.	Monroe
Carrol, Lester Leland	M. E.	Voc.	Rogue River
Carson, Carl Carnegie	M. E.	Fr.	Salem
Carswell, Herbert	Com.	Voc.	Truckee, Calif.
Cartan, Frederick Roger	E. E.	Fr.	Corvallis
Carter, Cecil	M. E.	Fr.	Pomeroy, Wash.
Carter, Claire Mary	H. E.	Sr.	Aberdeen, Wash.
Carter, Edwin Elson	Agri.	Voc.	Myrtle Point
Carter, Loyd Frank	E. E.	Jr.	Portland
Carter, Robert Aaron	M. E.	Voc.	Rogue River
Case, Austin M.	Chem. E.	Soph.	Klamath Falls
Casey, Edmond Thomas	Agri.	Fr.	Colton, Calif.
Cason, Donald	Agri.	Voc.	Fulton, Mo.
Castner, Frances Lillian	H. E.	Soph.	Hood River
Cathcart, Walter James	Com.	Fr.	Alsea
Cathey, Wm. Ross	M. E.	Voc.	Fortuna, Calif.
Catton, Mildred Wheeler	Opt.		Portland
Caudle, Earl Cecil	Chem. E.	Soph.	Hillsboro
Caughey, Andrew Ben	Agri.	Spec.	San Francisco, Calif.
Cayce, William Goebel	M. E.	Voc.	San Diego, Calif.
Celorie, Camillus James	M. E.	Voc.	Portland
Cereghino, Elsie Virginia	H. E.	Spec.	Portland
Chabot, Remi Robert	M. E.	Voc.	Aberdeen, Wash.
Chadbourne Estelle W.	H. E.	Sr.	San Francisco, Calif.
Chadbourne, Howard B.	Agri.	Soph.	San Francisco, Calif.

Name	Course	Rank	Home Address
Chaffee, Nathan Alburtus	M. E.	Voc.	Springfield
Chambers, Dorothy	Com.	Spec.	Salem
Chambers, Frank	M. E.	Voc.	Prairie City
Chambers, Ruth Anna	H. E.	Soph.	Portland
Chandler, Annabel C.	Phar.	Soph.	Corvallis
Chandler, Chas. R.	Agri.	Soph.	Fresno, Calif.
Chandler, Ollive May	H. E.	Fr.	Walla Walla, Wash.
Chandler, Robert Edward	M. E.	Voc.	Seattle, Wash.
Chandler, Veva Mary	Com.	Fr.	Walla Walla, Wash.
Caney, Juanita Mae	H. E.	Soph.	Corvallis
Chapel, Franklin Gage	M. E.	Soph.	Portland
Chapman, Harry L.	M. E.	Fr.	Portland
Chapman, Margaret	Com.	Soph.	Sheridan
Chappel, Walter Lee	Agri.	Voc.	Fresno, Calif.
Charock, William	Com.	Voc.	Portland
Chase, Elmo B.	Agri.	Sr.	Eugene
Chase, Marion Lois	H. E.	Soph.	Corvallis
Cheshire, Verne Anderson	M. E.	Voc.	Cheshire
Childress, Noel Isaac	M. E.	Voc.	Afton, Tenn.
Childs, Dorothy Ellen	H. E.	Sr.	Independence
Christiansen, Arthur B.	M. E.	Fr.	Moro
Christiansen, Emile H.	Agri.	Soph.	Portland
Christiansen, Hazel	H. E.	Sr.	Portland
Christiansen, Henry Noris	Agri.	Sr.	Portland
Christiansen, Lena Dolores	Com.	Fr.	Chinook, Mont.
Christiansen, Lulu M.	H. E.	Jr.	Chinook, Mont.
Church, Ernest Bruce	Com.	Fr.	Tillamook
Church, Leighton Frederick	E. E.	Jr.	Williams, Calif.
Churchill, Jennie Babb	Opt.		Corvallis
Clark, Samuel Charles	Agri.	Spec.	Troy
Clark, Chester Frank	Com.	Fr.	Fresno, Calif.
Clark, Donald Frank	M. E.	Voc.	Philomath
Clark, Elizabeth V.	Agri.	Spec.	Washington, D. C.
Clark, James H.	Agri.	Sr.	Mattoon, Ill.
Clark, Norville Shelton	M. E.	Voc.	Halfway
Clark, Orville O.	Agri.	Voc.	Portland
Clausen, Paul G.	Agri.	Voc.	Albany
Claxton, Reeve	M. E.	Voc.	Hood River
Clay, Adolphus Burleigh	Com.	Fr.	Portland
Claypool, Raymond Stanley	I. A.	Voc.	Roseburg
Cleaver, Harry Morris	Agri.	Fr.	Imbler
Clemenson, Charles Alfred	Agri.	Voc.	Newberg
Clevenger, Gladys M.	Com.	Spec.	Albany
Clifford, Ida Awilla	H. E.	Soph.	Portland
Clifford, William Straight	M. E.	Voc.	Portland
Clink, Russell T.	Agri.	Soph.	Modesto, Calif.
Closner, James Martin	M. E.	Voc.	Estacada
Clough, Alfred Blakely	Agri.	Fr.	Portland

Name	Course	Rank	Home Address
Clyde, Dorothea Virginia	Opt.		Corvallis
Coble, Lloyd Vernon	M. E.	Voc.	New Bridge
Cockrum, Arthur Bishoff	Com.	Soph.	Ontario
Cofer, Eldon Howard	C. E.	Fr.	Klamath
Coffery, Harrison Victor	C. E.	Fr.	Warrenton
Cochill, Victoria	H. E.	Jr.	Portland
Cohn, Sol Jerome	M. E.	Voc.	Portland
Cole, Maple Lucile	H. E.	Jr.	Canby
Coleman, Earl Sylvester	Phar.	Fr.	Riffe, Wash.
Coleman, Kenneth Edward	M. E.	Voc.	Portland
Collins, Bertha Claire	Com.	Soph.	Corvallis
Collins, Burton Thane	Min.	Soph.	Corvallis
Collinson, Barnes	Com.	Voc.	Portland
Collison, George Frederick	M. E.	Fr.	Portland
Collver, Chester Alfred	Agri.	Fr.	Marshfield
Colpetts, Olive Percis	H. E.	Jr.	Trinidad, Colo.
Combs, Calhoun Morey	Agri.	Voc.	La Grande
Commons, Fred Grant	M. E.	Voc.	Ona
Compton, Glenn	M. E.	Voc.	Portland
Condit, William Clyde	Agri.	Fr.	Portland
Cone, Clyde E.	H. E.	Soph.	Corvallis
Conklin, Don R.	Agri.	Jr.	Ontario
Conklin, Philip Arthur	M. E.	Jr.	Cove
Conklin, Eldon La Rue	Phar.	Fr.	Imbler
Conklin, Robert Pierson	For.	Fr.	Portland
Conklin, Roscoe B.	M. E.	Fr.	Ontario
Conklin, Thomas Richard	M. E.	Fr.	Cove
Conner, David Clare	M. E.	Voc.	Harrisburg
Conner, Evangeline	Com.	Spec.	Corvallis
Conner, Florence Bailiff	Com.	Spec.	Corvallis
Conner, Rita Lorie	H. E.	Fr.	Corvallis
Connet, Darwin Bardwell	M. E.	Fr.	Lebanon
Connet, Floyd Funston	M. E.	Fr.	Lebanon
Connors, John Fred	M. E.	Fr.	Portland
Conroy, Jewell Ruth	Phar.	Fr.	Anaconda, Mont.
Cook, Clarence Lee	M. E.	Voc.	Gold Hill
Cook, Kelsey Wellington	M. E.	Voc.	Portland
Cook, Kenneth	Phar.	Soph.	Portland
Cook, Manley Marion	M. E.	Voc.	Portland
Cooke, Robert S.	C. E.	Fr.	Silverton
Cooksey, Elmer Rufus	Com.	Fr.	Gold Hill
Cooley, Earl Ray	Agri.	Fr.	Harrisburg
Cooley, Myrtle	Com.	Soph.	Brookings
Coomans, Claude Leroy	M. E.	Voc.	The Dalles
Coop, Ivor Clarence	M. E.	Voc.	Estacada
Cooper, Atha Opal	Com.	Sr.	Corvallis
Cooper, Calvin Charles	Chem. E.	Fr.	Dufur
Copeland, Arthur Lee	Agri.	Voc.	Oakland

Name	Course	Rank	Home Address
Copeland, Alvin Silas	Agri.	Spec.	Glendale, Calif.
Corbett, Philip Lynn	M. E.	Fr.	Corvallis
Cordelle, Howard Albert	E. E.	Jr.	Weiser, Idaho
Cordley, Dorothea McLouth	H. E.	Fr.	Corvallis
Cornelius, Harry L.	M. E.	Voc.	Portland
Cornell, Jesse Carl	M. E.	Voc.	New York, N. Y.
Cornes, George Alton	M. E.	Voc.	Portland
Corrigan, Marion Francis	M. E.	Voc.	McMinnville
Corwin, Guy James	M .E.	Voc.	Madras
Cory, Wm. McKinley	Agri.	Sr.	Etna Mills, Calif.
Cosovich, Peter George	M. E.	Voc.	Astoria
Cottnair, Lawrence Abel	E. E.	Fr.	Monroe
Cotton, Howard Hudson	M. E.	Voc.	North Bend
Cousins, Albert Joseph	M. E.	Voc.	Portland
Covell, Margaret	H. E.	Jr.	Corvallis
Covell, Walter Page	Agri.	Soph.	Corvallis
Cowan, Lewis Eugene	Min.	Fr.	Portland
Cowley, Doris R.	Com.	Jr.	Central Point
Cox,Dwight	Min.	Fr.	Ontario
Cox, Everett	M. E.	Voc.	Portland
Cox, George Dewey	M. E.	Voc.	Canby
Cox, Stephen L.	Chem. E.	Soph.	Ontario
Crabtree, William Jennings	M. E.	Fr.	Monmouth
Craddock, Chester William	Com.	Voc.	Silvies
Craft, Emma	Com.	Soph.	Forest Grove
Craft, Joseph Earl	Phar.	Fr.	Sheridan
Craft, Welling Hall	C. E.	Fr.	Sheridan
Craig, Clark Mann	Com.	Fr.	Portland
Cramer, Arthur P.	M. E.	Fr.	Grants Pass
Cramer, Floyd Samuel	I. A.	Spec.	Corvallis
Crampton, Palmer David	Phar.	Jr.	Albany
Cran, Donal McMaster	M. E.	Soph.	Vancouver
Crandall, Grace Evelyn	H. E.	Soph.	Vancouver
Crane, Aver D.	Com.	Spec.	Corvallis
Crane, Harold Albert	Agri.	Spec.	Vergennes, Vt.
Crane, Norman David	M. E.	Voc.	Corvallis
Crawford, Eda Maude	H. E.	Spec.	Chicago, Ill.
Crawford, Lillian Louise	Com.	Soph.	Portland
Cresswell, James Harold	Agri.	Voc.	Pendleton
Crittenden, Ruth Delilah	Com.	Fr.	Portland
Croft, Carl Wesley	Com.	Voc.	Pasadena, Calif.
Crofts, Earl Joseph	Com.	Voc.	Portland
Croison, Geo. W.	Agri.	Fr.	Salem
Cronenberger, Miriam Grace	H. E.	Spec.	Corvallis
Crosfield, George Newton	Com.	Fr.	Wasco
Crouter, Herbert Steven	Agri.	Fr.	Baker
Crouter, Mary Catherine	Com.	Fr.	Union
Crow, John Wm.	Agri.	Voc.	Pendleton

Name	Course	Rank	Home Address
Crowe, William Lambert	M. E.	Fr.	Arlington, Iowa
Crowell, Chester E.	Min.	Jr.	Portland
Crumb, Ervie Frederick	M. E.	Voc.	Kelso, Wash.
Cullen, Clair Edwin	M. E.	Voc.	Hillsdale
Cunning, Mamie	Com.	Soph.	Baker
Cunningham, Joseph Hobart	C. E.	Fr.	Portland
Curl, Byron A.	Chem. E.	Soph.	Lebanon
Curry, Raymond	Agri.	Voc.	Crane
Curtis, Harold Callender	Agri.	Fr.	La Manda Park, Calif.
Curtis, Irene	H. E.	Jr.	Salem
Cushman, Esther Elizabeth	Com.	Fr.	Moro
Daddysman, Reginald Allen	C. E.	Fr.	Medford
Dadmun, Orwin D.	C. E.	Spec.	Independence
Dalgren, Carl Clifford	M. E.	Voc.	Portland
Dalgren, Helen	Com.	Fr.	Astoria
Dallas, Bliss Byran	Agri.	Voc.	Corvallis
Dallas, Earle Wesley	Agri.	Jr.	Corvallis
Dallas, Mabel Tabeaux	H. E.	Jr.	Corvallis
Dalton, Lionel Carl	Com.	Voc.	Portland
Danaher, Frank Joseph	Com.	Fr.	Portland
Daniel, Beverly Clay	M. E.	Voc.	Mohler
Daniel, Margaret	H. E.	Soph.	Bonanza
Daubner, Everett Francis	M. E.	Fr.	Gooding, Idaho
Danstrom, Edith May	H. E.	Spec.	Creswell
Darby, Claude Harold	Min.	Fr.	Salem
Darby, Una	H. E.	Sr.	Silverton
Darnell, Richard Eli	Agri.	Voc.	Kalama, Wash.
Das Gupta, Surendra Nath	Agri.	Soph.	Calcutta, India
Daue, Clifford Oliver	M. E.	Fr.	Salem
Davids, Arnold G.	Agri.	Fr.	Pasadena, Calif.
Davidson, Claude Barton	M. E.	Fr.	Hood River
Davidson, Kenneth Ellsworth	Agri.	Voc.	Gold Hill
Davie, George Ernest	M. E.	Voc.	Tacoma, Wash.
Davies, Gerald Huntington	M. E.	Voc.	Banks
Davis, Berkley Anthony	M. E.	Fr.	San Pedro, Calif.
Davis, Chas. Leslie	Com.	Voc.	Lebanon
Davis, Charles Ward	Com.	Fr.	Portland
Davis, Edgar Guy	M. E.	Fr.	La Grande
Davis, Frank Marion	M. E.	Voc.	La Grande
Davis, Harry Merriweather	M. E.	Voc.	Santa Ana, Calif.
Davis, Hubert Webster	C. E.	Fr.	Corvallis
Davis, James Baxter	Agri.	Voc.	Oakland, Calif.
Davis, LeRroy	Agri.	Voc.	Grandview, Wash.
Davis, Leonard Cecil	Com.	Voc.	Oswego
Davis, Lois Grace	H. E.	Jr.	Myrtle Creek
Davis, Lyle Marion	C. E.	Voc.	Roseburg

Name	Course	Rank	Home Address
Davis, Mabelle Josephine	H. E.	Sr.	Corvallis
Davis, Norma M.	H. E.	Fr.	Corvallis
Davis, Nellie Martha	H. E.	Fr.	La Grande
Davis, Wayne Keith	Com.	Fr.	Pomeroy, Wash.
Dawson, Janet Elizabeth	Com.	Fr.	Albany
Day, Delbert Samuel	For.	Fr.	Portland
Day, Everett Augustus	M. E.	Fr.	Portland
Day, Harry Elmer	M. E.	Voc.	Portland
Day, Leotta	Com.	Fr.	Victoria, B. C.
Deal, Delbert Chester	M. E.	Fr.	Dallas
Dearborn, Dorr Nathan	Agri.	Fr.	Ontario
Deckebach, Frederick Carl	Chem. E.	Jr.	Salem
DeClark, Glen A.	M. E.	Voc.	Portland
Dedman, Craig Charles	Phar.	Fr.	Canby
DeFrance, Irving Alfred	C. E.	Soph.	Philomath
DeLancey, Charles Gerald	Min.	Fr.	Albany
Denham, Earle Oliver	E. E.	Fr.	Baker
Denlinger, Wendall H.	Chem. E.	Soph.	Maplewood
Denman, Melvin Hornbeck	Agri.	Voc.	Crane
Denny, Derle Margaret	H. E.	Jr.	Beaverton
Dennin, John Wm.	M. E.	Voc.	Orchards, Wash.
Denson, Harold Allen	M. E.	Voc.	Knappton, Wash.
Dent, Milton A.	M. E.	Soph.	Amity
Dental, Russell James	M. E.	Voc.	Aurora
Denzel, Otto Baker	M. E.	Voc.	Silverton
Deter, Carey Clifford	M. E.	Voc.	Jennings Lodge
Detring, Wm. R.	Min.	Sr.	Portland
Detmering, Carl Swick	M. E.	Fr.	Dayton
DeVeny, Lloyd Raymond	Com.	Soph.	Portland
Dexter, Ernest Franklin	M. E.	Voc.	Montague, Calif.
Dexter, Roy Rex	Com.	Fr.	Bellingham, Wash.
Dick, Bertram Gale	Agri.	Voc.	Alber
Dick, Ernest Frederick	M. E.	Voc.	Bend
Dickerson, Jesse Earl	Agri.	Spec.	Parma, Idaho
Dickerson, Raymond Wilson	Agri.	Fr.	Parma, Idaho
Dickinson, Arthur Louis	Agri.	Fr.	Corvallis
Dickinson, Dorain Hamilton	M. E.	Voc.	Independence
Dickinson, Roy	M. E.	Fr.	Corvallis
Dickson, Clayton Perry	M. E.	Fr.	Toledo
Didtel, Katheryn Margaret	H. E.	Soph.	Riddle
Dieffenbach, Emery Marcus	M. E.	Fr.	Creswell
Dillingham, Jean	H. E.	Fr.	Barstow, Calif.
Dimm, John Calvin, Jr.	M. E.	Voc.	Portland
Dimmick, Don B.	M. E.	Voc.	Rogue River
Dimmick, Neil Gordon	Agri.	Spec.	Yakima, Wash.
Ding, Albert Poy	M. E.	Soph.	Portland
Ding, Frank Gow	E. E.	Sr.	Portland
Dinger, Viola Ruth	H. E.	Soph.	Sublett, Idaho

Name	Course	Rank	Home Address
Dinsmore, John Owen	I. A.	Voc.	Alton, Calif.
Dishman, Mildren	Com.	Fr.	Prineville
Dishman, Ruth	H. E.	Fr.	Prineville
Ditter, Eugene A.	M. E.	Voc.	Sblimity
Dively, Dewey A.	Agri.	Voc.	West Stayton
Dixon, Ellis W.	C. E.	Fr.	Yakima, Wash.
Dixon, Ezra Samuel	M. E.	Voc.	Amity
Doane, Royal Wm.	M. E.	Voc.	Eugene
Dobson, Smith Weed	C. E.	Fr.	Pacific Beach, Calif.
Dodson, Leona	Opt.		Baker
Dohring, Willia Albert	E. E.	Fr.	Halsey
Dolly, Roy Pearce	Min.	Fr.	Long Beach, Calif.
Dolp, Albert C.	M. E.	Voc.	Portland
Donaca, Natheel Reva	Com.	Fr.	Albany
Donaldson, John Manley	Agri.	Fr.	Riverton
Donegan, Patrick Hubert	Chem. E.	Fr.	Burns
Dooley, John Raymond	M. E.	Voc.	Baker
Doons, Charles	M. E.	Voc.	Medford
Dormer, DeWitt William	Agri.	Fr.	Covina, Calif.
Dorn, Lois	H. E.	Jr.	Pasadena, Calif.
Dosett, Ralph E.	M. E.	Voc.	Yakima, Wash.
Dotson, Leland Albert	M. E.	Voc.	Portland
Dougherty, Charles Haden	Chem. E.	Fr.	Baker
Dougherty, Otto John	M. E.	Voc.	Salem
Dougherty, Serle Alvin	M. E.	Fr.	Brownsville
Dougherty, Wm.	Agri.	Voc.	Salem
Doving, Walter	Phar.	Fr.	Portland
Dowell, Raymond Arthur	M. E.	Voc.	Mitchell, S. Dak.
Dowling, Frank Joseph	For.	Fr.	Portland
Downing, Everett	M. E.	Voc.	Amboy, Wash.
Downs, Ada Adelaide	H. E.	Soph.	Drain
Downs, Della D.	Spec.	Voc.	Ontario
Downt, Lillie M.	Com.	Fr.	Ontario
Doyle, Peter Ambrose	M. E.	Voc.	Portland
Draper, Dale D.	Agri.	Soph.	West Linn
Dresser, Margery Belle	Com.	Fr.	Eugene
Drews, Ernest Charles	M. E.	Voc.	Portland
Duke, William Douglas	Com.	Fr.	Southerlin
Dunbar, James Rudolph	Agri.	Voc.	Portland
Dunbar, William Lamont	M. E.	Voc.	Portland
Duncan, Elmer Claud	M. E.	Voc.	Pendleton
Duncan, Gordon Alexander	Agri.	Spec.	Portland
Dungan, Ruth Phillips	H. E.	Fr.	Portland
Dunlap, Floyd Elwin	M. E.	Voc.	Condon
Dunn, Cecil Forest	Com.	Fr.	Portland
Dunn, Mary Matilda	H. E.	Sr.	Kimberly, Idaho
Dunn, Paul E.	M. E.	Soph.	Cascade Locks
Dunn, Rufus Earl	Agri.	Voc.	Meda

Name	Course	Rank	Home Address
Dunn, Wallace W.	Agri.	Fr.	Tumalo
Dunne, David Morris, Jr.	Min.	Fr.	Portland
Dunning, Eva M.	H. E.	Sr.	Stanfield
Dunning, Marilla C.	H. E.	Sr.	Stanfield
Dunning, Orpha J.	H. E.	Fr.	Stanfield
Durbin, Frank W.	Com.	Fr.	Salem
DuRette, Louise Merle	H. E.	Spec.	Gervais
Durfey, Chas. Jarvis	M. E.	Voc.	Hermiston
Durham, Howard McCormack	M. E.	Voc.	Hemet, Calif.
Durham, Lee L. M.	Agri.	Jr.	Hemet, Calif.
Durham, Lois E.	H. E.	Spec.	Hemet, Calif.
Durnam, Philip Monser	M. E.	Voc.	Portland
Durland, Alfred Clarence	M. E.	Fr.	Seattle, Wash.
Durrer, George Wm.	Agri.	Voc.	Tillamook
Durst, Henry Edward	Phar.	Fr.	Lebanon
Duryee, George Wesley	M. E.	Voc.	San Diego, Calif.
Duyck, Peter John	Agri.	Voc.	Carnation
Dye, Evangeline	H. E.	Sr.	Oregon City
Dykes, Thelma	H. E.	Jr.	Portland
Dykstra, Theodore Peter	Agri.	Fr.	Clem
Dyskow, Margaret M.	Com.	Voc.	Galvin, Wash.
Eaden, James Jonathan	Agri.	Voc.	Seattle, Wash.
Earhart, Chas. Keith	Phar.	Voc.	Montague, Calif.
Earl, Audrey Irene	Com.	Voc.	Tillamook
East, Gertrude	H. E.	Jr.	Salem
Eastlund, Neil Fred	Agri.	Voc.	Portland
Eaton, Frances	H. E.	Sr.	Riverside, Calif.
Eberly, Floyd Franklin	M. E.	Voc.	Oregon City
Ebert, Elizabeth F.	Com.	Fr.	Colton, Calif.
Eby, Marvin Robert	M. E.	Fr.	Oregon City
Ediy, Arthur Abbott	For.	Fr.	Langlois
Eddy, Frank Clarence	M. E.	Voc.	Independence
Eddy, Irene Cole	Opt.		Independence
Edison, Evald T.	C. E.	Fr.	Astoria
Edwards, Addison Hurcill	Phar.	Voc.	Corvallis
Edwards, Dorothy Margaret	H. E.	Soph.	Monroe
Edwards, Elias Jackson	Agri.	Jr.	Buck Fork
Edwards, Edwin Paul	M. E.	Voc.	Gladstone
Edwards, Floyd Marvin	Agri.	Fr.	Monroe
Edwards, Lewis Herman	Min.	Sr.	Monroe
Edwards, Miles Lowell	E. E.	Fr.	Tillamook
Edwards, Robert Roy	M. E.	Voc.	Vancouver, Wash.
Edwards, Ruth	H. E.	Fr.	Portland
Effinger, Robert Patterson	M. E.	Fr.	Portland
Eichelberger, Donal O.	M. A.	Spec.	Yakima, Wash.
Eichinger, Cecil Sprague	Phar.	Fr.	Scio
Eickelman, John Albert	Agri.	Jr.	San Bernardino, Calif.
Eilertson, John Edwin	Log. E.	Jr.	Clatskanie

Name	Course	Rank	Home Address
Eilertson, William T.	Agri.	Jr.	Clatskanie
Eisman, Stanley Cady	Com.	Fr.	Portland
Elkstrom, Albin LeRoy	M. E.	Fr.	Beaverton
Elkins, Helen Oaks	Com.	Jr.	Prineville
Elliott, Dorcas May	H. E.	Sr.	Vancouver, Wash.
Elliott, Homer	Agri.	Voc.	Pendleton
Elliott, Howard Maxwell	Agri.	Spec.	Newberg
Elliott, Lawrence	Agri.	Voc.	Pendleton
Elliott, Miles Hayden	Agri.	Voc.	Gaston
Elliott, Robert Boyd	E. E.	Fr.	Klamath Falls
Ellis, Carl Robert	M. E.	Voc.	Lebanon
Ellison, Huey Elmer	Com.	Voc.	Crosbyton, Texas
Elmgreen, Enoch Victor	M. E.	Fr.	Sweden
Emery, Burdette	Com.	Jr.	Portland
Emmett, Paul Hugh	Chem. E.	Fr.	Portland
Emmons, Alton Walter	Chem. E.	Fr.	Beaverton
Emmons, Harold Wilcox	M. E.	Fr.	Portland
Encke, Wilbur Milton	M. E.	Voc.	Roby, Texas
English, Felix A.	C. E.	Soph.	Salem
English, Pennoyer F.	Agri.	Sr.	Salem
Enke, William H.	Chem. E.	Fr.	Portland
Entermille, Fred D.	Agri.	Sr.	Baker
Entermille, Vesta Gardner	H. E.	Sr.	Salem
Erickson, Atlee E.	Agri.	Voc.	Estacada
Erickson, Martin Luther	C. E.	Voc.	Portland
Erickson, Otto Lester	M. E.	Voc.	Oswego
Ericksen, Norma Elizabeth	H. E.	Jr.	Orland, Calif.
Ernest, Daisy Linden	H. E.	Soph.	Claremont, Calif.
Erwin, Ada Ruth	H. E.	Jr.	Prescott, Wash.
Erwin, James Stewart	For.	Jr.	Knappa
Eslinger, Jake B.	M. E.	Voc.	The Dalles
Esteb, Leonard Albert	M. E.	Voc.	Albany
Etzel, Sim Floyd	M. E.	Voc.	Sublimity
Evans, Daryl Glenn	Agri.	Voc.	Salem
Evans, Geo. Lynn	M. E.	Voc.	Vancouver, Wash.
Evans, William Byron	M. E.	Voc.	La Grande
Everest, Alfred Rubin	M. E.	Voc.	Newberg
Everhart, Leslie Edward	E. E.	Fr.	Portland
Ewell, Elaine	H. E.	Jr.	Portland
Faber, Minnie A.	H. E.	Voc.	Albany
Fairchild, Russel L.	M. E.	Fr.	Baker
Falk, Alfred Theodore	M. E.	Voc.	Albany
Falkenhagen, Dolph Geo.	M. E.	Voc.	Madras
Famme, Millie Mae	H. E.	Soph.	Forest Grove
Fancher, Galen Calvin	Agri.	Voc.	Portland
Farmer, Roy	C. E.	Fr.	Nampa, Idaho
Farnam, Lester Bennie	Agri.	Voc.	Glendale
Farrell, Miller Starr	M. E.	Soph.	Portland

Name	Course	Rank	Home Address
Farrington, Donald Homer	Agri.	Voc.	The Dalles
Faucett, Robert Lund	M. E.	Fr.	Stanfield
Feese, Fred Fraker	M. E.	Voc.	Boise, Idaho
Feike, Geneva Alice	H. E.	Fr.	Portland
Feike, Zelta	H. E.	Sr.	Portland
Feldhousen, John Sieck	Agri.	Soph,	Boise, Idaho
Felker, Maybelle	H. E.	Soph	Portland
Feller, Harland Eugene	M. E.	Fr.	Hubbard
Fendall, Kenneth Duvall	Agri.	Fr.	Newberg
Ferguson, Alice	H. E.	Jr.	Walla Walla, Wash.
Ferguson, Delos Worick	M. E.	Fr.	Portland
Ferguson, Earl Lester	Agri.	Voc.	Salem
Ferguson, Isabel	Com.	Fr.	Marshfield
Ferguson, Natalie	H. E.	Sopr.	Walla Walla, Wash.
Ferguson, Ruth Gladys	Opt.		Portland
Fields, John Davis	M. E.	Voc.	Salem
Fikan, Will Herman	M. E.	Voc.	Woodburn
Finch, Dora Alice	Com.	Fr.	Portland
Findley, Archie Oliver	Com.	Voc.	Albany
Finney, Edward A.	Agri.	Soph.	Astoria
Firestone, Norma Ellen	H. E.	Soph.	Vancouver, Wash.
Fisher, Ardis Loraine	Com.	Voc.	Corvallis
Fischer, Jean Corrinne	H. E.	Voc.	Springfield
Fish, Edward Hinsdale	Agri.	Fr.	Bandon
Fish, Florence	Phar.	Fr.	North Bend
Fish, Henry W.	M. E.	Spec.	Albany
Fisher, Bertha Marie	H. E.	Sr.	Haines
Fisher, Elmer	Min.	Sr.	Orchards, Wash.
Fisher, Glenn E.	Agri.	Soph.	Haines
Fiske, Henry James	E. E.	Fr.	Cornelius
Fitch, Paul Levering	M. E.	Voc.	Cornelius
Fitts, Anna Snow	Opt.		Mansfield
Fjelstead, Kate Lorraine	H. E.	Fr.	Preston, Idaho
Fjelstead, Milford W.	Agri.	Fr.	Preston, Idaho
Flack, Paul Lewis	M. E.	Voc.	Portland
Flavin, John Paul	M. E.	Voc.	Portland
Fleischman, Amelia F.	Com.	Spec.	Corvallis
Fleming, Harley Raymond	Agri.	Voc.	Jacksonville
Fleming, Henry Wm.	M. E.	Voc.	Jacksonville
Fleming, Homer Robert	Agri.	Jr.	Joseph
Fleming, Ralph Cecil	Agri.	Voc.	Ontario
Fletcher, Rita Belle	H. E.	Jr.	Corvallis
Fleigel, Joseph Frank	M. E.	Fr.	Salem
Flinn, Clyde Wm.	Agri.	Voc.	Wapinitia
Florendo, Silverio Perez	Agri.	Fr.	Bacnotan La Union P I
Fluharty, Arthur Lawrence	Agri.	Sr.	Clarkaton, Wash.
Flynn, Elinor E.	Com.	Soph.	Eugene
Focht, John Hasbrook	C. E.	Fr.	Ballston
Foiles, Arthur Columbus	M. E.	Voc.	Vale

Name	Course	Rank	Home Address
Foley, James Owen	Phar.	Sr.	Corvallis
Foley, Margaret Ellen	H. E.	Fr.	Corvallis
Foley, Mary Johanna	H. E.	Fr.	Corvallis
Follis, Roy Edwin	M. E.	Fr.	Scio
Folsom, Jean Jaques	Phar.	Fr.	Pendleton
Foltz, Edward John	Agri.	Voc.	Scio
Fong, Arthur	For.	Fr.	Baker
Foote, Glen Hazel	M. E.	Voc.	Woodburn
Foote, Lucius K.	Com.	Fr.	Portland
Force, Harry David	M. E.	Voc.	Central Point
Ford, Norman Darcey	Phar.	Fr.	Portland
Foreman, Byron Starr	Agri.	Jr. T.	Tacoma, Wash.
Foreman, Louis	M. E.	Voc.	Chicago, Ill.
Forsburg, Fred Alvin	M. E.	Voc.	Fargo, N. Dak.
Forsythe, Louis Hampton	M. E.	Voc.	Portland
Foster, Guy Clifton	Phar.	Voc.	Portland
Foster, Herman Charles	E. E.	Fr.	Klamath Falls
Foster, John Jacob	M. E.	Fr.	Portland
Foster, William Harry	M. E.	Soph.	Portland
Fourier, Irene	Com.	Fr.	Marshfield
Fowler, Floyd Edgar	M. E.	Voc.	Dayton
Fowler, Frank Chesny	M. E.	Fr.	Oak Grove
Fraederick, Everett E.	Agri.	Voc.	Coquille
Fredell, Herbert Geo.	Agri.	Fr.	Anaconda, Mont.
Frederick, Marianne	Phar.	Fr.	Chicago, Ill.
Freeland, Eugene Louis	Chem. E.	Sr.	Shedd
Freeman, Leonard J.	Agri.	Jr.	Central Point
Freeman, Lola	H. E.	Jr.	Central Point
Freeman, Pansy Ferne	Phar.	Fr.	Halsey
Freitas, Francis Edith	H. E.	Fr.	Corvallis
French, Mildred A.	H. E.	Fr.	Portland
Frey, Michael Jacob	Com.	Voc.	Portland
Freyberger, George Hyatt	Chem. E.	Fr.	Portland
Friar, Otella M.	Com.	F.	Perryvale
Fries, Samuel Morton	Com.	Spec.	Portland
Frink, Virgil Jewell	Phar.	Fr.	Philomath
Frost, John Dewey	Agri.	Voc.	Los Molinos, Calif.
Fry, Minot Searles	M. E.	Voc.	Portland
Frye, Clayton	M. E.	Soph	Portland
Fryer, Claude Henry	Com.	Voc.	Portland
Fudge, Lawrence	E. E.	Sr.	Balston
Fugle, James Bennett	M. E.	Voc.	San Diego, Calif.
Fullager, Chas. Robert	M. E.	Voc.	Halsey
Fuller, Lowell Willard	Agri.	Fr.	Fresno, Calif.
Fullerton, Nathan	Agri.	Spec.	Roseburg
Fulton, Helen Louise	H. E.	Jr.	Corvallis
Fung, Timothy Locke	M. E.	Voc.	Portland
Funk, Luther Lawrence	C. E.	Soph.	Sheridan

Name	Course	Rank	Home Address
Funk, Vera	H. E.	Jr.	Corvallis
Furnish, James Roy	Agri.	Fr.	Pendleton
Futtrup, Ellen Marie	Com.	Jr.	Vancouver, Wash.
Gabbert, Holmes Bristow	M. E.	Voc.	Glendale
Gabel, Ruth,	Opt.		Chehalis, Wash.
Galdsby, Cameron Jeffrey	M. E.	Voc.	Portland
Gain, M. Jane	Com.	Spec.	Birch Run, Mich.
Gaither, James Terrance	Com.	Soph.	Toledo
Gale, Donald Robert	Agri.	Fr.	Union
Gale, Henry Carlton	Phar.	Fr.	Baker
Ganopole, Albert	M. E.	Voc.	Portland
Gall, Cecil Christopher	M. E.	Fr.	Medford
Gant, Homer Calvin	Com.	Fr.	Myrtle Point
Gant, Orvin Thomas	Com.	Fr.	Myrtle Point
Gaona, Elpsisio Delmendo	Agri.	Fr.	Bocanotin La Union, P. I.
Garber, Hazel	H. E.	Sr.	Nampa, Idaho
Garbutt, Philip Stanley	Com.	Fr.	Sheridan, Wyo.
Gardner, Abner D.	Com.	Fr.	Stayton
Gardner, Esther Marie	Com.	Soph.	Portland
Gardner, Francis Hartt	Opt.		Portland
Gardner, Helen Corinne	H. E.	Jr.	Portland
Garhardt, Malcolm E.	Com.	Fr.	Noblesville, Ind.
Garner, Lawrence	M. E.	Voc.	Philomath
Garnjobst, Laura Florence	Phar.	Soph.	Salem
Garrigus, John Jeptha	Agri.	Voc.	Banks
Garrison, Leonard Earl	M. E.	Fr.	North Powder
Garst, Clyde	Agri.	Soph.	Dayton, Ohio
Garvey, Edward Pence	M. E.	Voc.	Pasadena, Calif.
Gates, Floyd Leslie	M. E.	Voc.	Camas, Wash.
Gates, Harvey Foster	E. E.	Fr.	Redmond
Gavin, Nancy	Com.	Fr.	Portland
Gay, Earl Harold	M. E.	Voc.	Corvallis
Gay, John Herbert	Com.	Fr.	Hemet, Calif.
Gay, Ruth Leah	H. E.	Jr.	Corvallis
Geddes, Otto Ebbert	M. E.	Voc.	Hereford
Geiberger, Anna Huldah	Com.	Fr.	Tualatin
Geiberger, Ray Charles	C. E.	Fr.	Tualatin
Gentry, Jesse Lee	Agri.	Voc.	Medford
George, Howard Stephens	Com.	Jr.	Lewiston
Gerhard, Geo. Earl	M. E.	Voc.	Gardiner
German, Frank Vermilia	M. E.	Voc.	Palmer Junction
Geyer, Fred A.	Com.	Spec.	Medford
Gerow, Douglas Roland	M. E.	Voc.	Chinook, Wash.
Gibbons, James Lane	Agri.	Soph.	Corvallis
Gibbs, Roy Harry	M. E.	Voc.	Gresham
Gibson, Guy	Agri.	Fr.	Siletz
Gibson, Harry Leigh	M. E.	Voc.	Lebam, Wash.

Name	Course	Rank	Home Address
Giebisch, Gordon	M. E.	Fr.	Portland
Gilbert, Don	Phar.	Fr.	Tillamook
Gilbert, Lovina	H. E.	Spec.	Tacoma, Wash.
Gilbertson, Harry William	Com.	Fr.	Portland
Gilchrist, Chas. Cleo	M. E.	Voc.	Sams Valley
Giles, Mary Laura	Com.	Fr.	Mission City, B.C.,Can.
Gilfillan, Hobart Ralph	M. E.	Spec.	Portland
Gilkey, Orville Elgin	Agri.	Fr.	Scio
Gill, Whitney George	Com.	Soph.	Salem
Gilliam, Herman P.	E. E.	Fr.	Amity
Gilette, Edith S.	H. E.	Fr.	La Verne, Calif.
Gilliam, Merlie Althea	Com.	Spec.	Dallas
Gillin, Averitt Vendall	M. E.	Voc.	Portland
Gilson, Mervin Joseph	Agri.	Voc.	Lebanon
Gilson, Rosa Elizabeth	Phar.	Fr.	Dallas
Gilstrap, Alice Gertrude	H. E.	Fr.	Portland
Girod, Ralph Adolph	Agri.	Voc.	Salem
Glaser, John	M. E.	Fr.	Lebanon
Glaney, William John	Phar.	Fr.	Dufur
Glaze, George Dewey	Chem. E.	Fr.	La Grande
Gleeson, Marguerite	Com.	Jr.	Pendleton
Glenn, Charles Arthur	M. E.	Voc.	Corvallis
Glennon, Fenton James	Com.	Soph.	Portland
Glossop, Esmond	M. E.	Fr.	Marshfield
Glossop, Herman Frederic	C. E.	Fr.	Marshfield
Goebel, Lawrence H.	Agri.	Fr.	Wallowa
Goetz, Carl Raymond	Agri.	Fr.	Portland
Goetz, Kenneth Harold	M. E.	Fr.	Portland
Goff, Othel Guy	E. E.	Fr.	Burns
Gold, Paul	M. E.	Voc.	Portland
Goldman, Ysabel	Com.	Fr.	Wren
Goldstraub, Josephine Pearl	Phar.	Fr.	Portland
Goldstone, Abe	Com.	Fr.	Portland
Gooch, Sylvia Geneva	Phar.	Fr.	Mill City
Gooding, Lorin Randolph	E. E.	Fr.	Harrisburg
Goodman, Austin Edward	E. E.	Fr.	Burns
Goodman, Floyd Olin	M. E.	Voc.	Lowden, Wash.
Goodman, Leo	M. E.	Voc.	Tidewater
Goodman, Verne	M. E.	Voc.	Tidewater
Goos, Botho George	I. A.	Voc.	Corvallis
Gordon, Harold Dumbar	M. E.	Voc.	Stabler, Wash.
Gordon, Robert R.	E. E.	Fr.	Fort Klamath
Gordon, Wayne William	Phar.	Fr.	Caldwell, Ida
Gorman, Helen Marie	Com.	Spec.	Metzger
Gossman, Spurgeon Sanford	Agri.	Spec.	Wyndmere, N. Dak.
Gould, Edwin Curtis	For.	Fr.	Hood River
Gould, George Thornton	M. E.	Fr.	Medford
Gould, Otis Oscar	M. E.	Voc.	Weston

Name	Course	Rank	Home Address
Gourley, Harold B.	E. E.	Voc.	Eugene
Gowans, David Hunter	Com.	Fr.	Portland
Gowdy, Vigil Whitfield	M. E.	Voc.	Cottage Grive
Grafton, Jack Holmes	Agri.	Jr.	Chehalis, Wash.
Gragg, Bessie	H. E.	Fr.	Corvallis
Gragg, George Steven	M. A.	Voc.	Corvallis
Graham, Willa Annette	Com.	Fr.	Corvallis
Gramse, Fred Martin	Com.	Fr.	Ontario
Gramse, Marlin	Com.	Fr.	Ontario
Grandy, Lewis Stephen	E. E.	Fr.	Eden, Wyo.
Grandy, Lynn Wilfred	Agri.	Fr.	Eden, Wyo.
Granholm, Fred A.	M. E.	Fr.	Pendleton
Granrud, Harold H.	Chem. E.	Soph.	Tacoma, Wash.
Grant, Mildred Harriet	H. E.	Soph.	Portland
Grant, Sherman	For.	Fr.	Portland
Graser, John Frank	M. E.	Fr.	Tangent
Graves, Alvin Taylor	M. E.	Voc.	Newberg
Graves, Horatio Richmond	M. E.	Voc.	Klamath Falls
Gray, Ethylwynne Glenva	H. E.	Fr.	Corvallis
Gray, Harold M.	C. E.	Fr.	Milton
Gray, Joseph A.	M. E.	Fr.	Philomath
Gray, Lawrence Vigil	M. E.	Voc.	Philomath
Gray, Leon Geo.	M. E.	Voc.	Corvallis
Gray, Lisle Marion	M. E.	Voc.	Milton
Gray, Raymond Lourenza	Phar.	Fr.	Corvallis
Gray, Thomas Lee	Agri.	Voc.	The Dalles
Green, Ellsworth Nelson	Min.	Jr.	Pasadena, Calif.
Green, Faye E.	H. E.	Voc.	New Pine Creek
Green, Julia Melvine	H. E.	Fr.	Alturas, Calif.
Green, Marshall	Min.	Jr.	Pasadena, Calif.
Green, Max Cowley	C. E.	Soph.	Alturas, Calif.
Green, Seth Wellington	E. E.	Fr.	Pasadena, Calif.
Green, Warren Sherman	M. E.	Voc.	Vancouver, Wash.
Greenbaum, Adolph	Min.	Fr.	Salem
Greenhagen, Herman Russell	Agri.	Spec.	Toledo
Greenwald, Emrald Germaine	Com.	Fr.	Pendleton
Gregg, Glenn Harold	E. E.	Fr.	Salem
Gregg, Margaret Davis	H. E.	Soph.	Adna, Wash.
Gregg, Rodney	M. E.	Sr.	Gazelle, Calif.
Gregg, Vernon LeRoy	Agri.	Fr.	Santa Ana, Calif.
Gregg, Whitney Alvis	Phar.	Fr.	Portland
Gregson, Agnes Irene	H. E.	Jr.	Salem
Gresham, Ida Lillian	Phar.	Soph.	Boise, Idaho
Grete, Gwendolyn Alice	Com.	Fr.	Caldwell, Idaho
Gribskov, Valborg	H. E.	Fr.	Junction City
Grider, Eddie Franz	Com.	Fr.	Elma, Wash.
Griffin, Marjory	H. E.	Spec.	Corvallis
Griffiths, Ernst William	M. E.	Voc.	Oak Grove

Name	Course	Rank	Home Address
Griffith, Lewis D.	C. E.	Spec.	Salem
Grigsby, Floyd Benjamin	M. E.	Voc.	Hoaquiam, Wash.
Griggs, Rex Edward	Com.	Fr.	Union
Grigsby, Helen	H. E.	Fr.	Albany
Grimm, Frank Lawrence	Opt.		Onalaska, Wash.
Grose, Lemont Edward	M. E.	Voc.	Lebanon
Gross, Harold Owen	M. E.	Voc.	Portland
Grossenbacher, Armen L.	Com.	Fr.	Oregon City
Groves, Roshal Meryl	Agri.	Jr.	Lebanon
Grubb, Hollis	E. E.	Fr.	Halfway
Gulliford, Daphne Marie	Com.	Fr.	Portland
Gurwell, George Wm.	M. E.	Fr.	Jerome, Idaho
Gustin, Kenneth Plants	Com.	Fr.	Portland
Gundersen, Oliver Eugene	Agri.	Voc.	Lebanon
Gunn, Henry Martin	Agri.	Spec.	Hermiston
Gurian, Ellie	M. E.	Voc.	Portland
Guthrie, Eunice Jane	H. E.	Sr.	Corvallis
Haberer, Erwin Sam	For.	Sr.	Chicago, Ill.
Hackett, Joe F.	Com.	Jr.	Corvallis
Hacking, Margaret May	Com.	Soph.	Santa Cruz, Calif.
Hadley, Glen Hannum	Agri.	Voc.	Airlie
Hadsall, Leonard N.	Chem. E.	Fr.	Bandon
Haftorson, Clifford	C. E.	Voc.	Salem
Haertle, Edward John	M. E.	Voc.	Medford
Hagerup, Vincent Soren	C. E.	Fr.	Astoria
Haines, Bernice Mae	H. E.	Soph.	Portland
Hajicek, Henry	M. E.	Voc.	Klamath Falls
Haldeman, William F.	C. E.	Spec.	Cottage Grove
Hale, Earl Andrews	M. E.	Voc.	Spray
Haley, Eldon Ward	M. E.	Fr.	Camas, Wash.
Haley, Helen Baldwin	H. E.	Sr.	Chicago, Ill.
Haley, Susan Baldwin	Com.	Soph.	Chicago, Ill.
Hall, Charles Wesley	M. E.	Voc.	McMinnville
Hall, Coral Clarice	H. E.	Sr.	Union, Iowa
Hall, Edward Leon	M. E.	Voc.	Hermiston
Hall, George Jay	Agri.	Jr.	Cottage Grove
Hall, Herbert LeRay	M. E.	Voc.	Hermiston
Hall, Kenneth B.	E. E.	Soph.	Portland
Hall, Mary M.	H. E.	Fr.	Innisfail, Alberta, Can.
Hall, Melvin Louis	Com.	Fr.	Portland
Hall, Neil Dawson	M. E.	Fr.	Woodburn
Hall, Verne Malcolm	Phar.	Fr.	Portland
Haller, Virgil Hall	Phar.	Fr.	Woodburn
Hamblen, Kenneth Earle	Min.	Fr.	Milwaukie
Hamilton, John Jr.	Agri.	Voc.	Pasadena, Calif.
Hamilton, Lorenzo Glen	Com.	Fr.	Medford
Hamilton, Paul Howard	M. E.	Fr.	Pasadena, Calif.
Hammond, Lucile Anna	Com.	Spec.	Corvallis

Name	Course	Rank	Home Address
Hammond, Louise Kerr	H. E.	Soph.	Hubbard, Ohio
Hamnett, Earl Victor	E. E.	Fr.	Portland
Hampton, Thomas Eugene	Agr.i	Soph.	Pendleton
Hampton, Wayne Edwin	Phar.	Fr.	Canby
Hanauska, Joseph	Agri.	Voc.	Shaw
Hanger, Reid	Com.	Fr.	Portland
Hangered, Erling Johan	M. E.	Voc.	Scappoose
Hanigan, John Thomas	Agri.	Spec.	Payette, Idaho
Hanks, Harold F.	M. E.	Soph.	Portland
Hanson, Ernest Arthur	Com.	Fr.	Portland
Harbke, Helen Mate	Com.	Soph.	Portland
Hardebeck, Clarence Wm.	M. E.	Fr.	Dilley
Harden, George	M. E.	Fr.	Lebanon
Hardie, Alex Dewey	Agri.	Fr.	Condon
Harding, George Edwin	Com.	Fr.	Portland
Hardie, Marjory	Com.	Soph.	Condon
Harding, Gustav Thayer	M. E.	Fr.	San Diego, Calif.
Hargett, Clayton Fordham	Agri.	Voc.	Holdman
Harms, Leo Hobson	M. E.	Voc.	Portland
Harnisch, Henry	E. E.	Fr.	Albany
Harper, Alton Vernon	M. E.	Voc.	Springfield
Harper, Vernon Willard	M. E.	Fr.	Corvallis
Harper, William George	Agri.	Fr.	Corvallis
Harrington, Helen	H. E.	Sr.	Santa Fe, N. Mex.
Harrington, Merle Russell	Chem. E.	Fr.	Portland
Harris, Arthur J.	M. E.	Fr.	Corvallis
Harris, Claud Henry	Agri.	Voc.	Oregon City
Harris, Herbert Allen	Com.	Voc.	Corvallis
Harris, Robert Burns	Agri.	Spec.	New Plymouth, Ida.
Harris, Russell L.	Min.	Soph.	Central Point
Hart, Corintha Eleanor	Com.	Soph.	Albany
Hartman, Charles Harold	Agri.	Jr.	Hollister, Calif.
Hatrung, Frederick Elmer	Agri.	Fr.	Eugene
Harvey, Andrew Frank	Agri.	Soph.	Pendleton
Harvey, Eudora Mae	H. E.	Jr.	La Center, Wash.
Harvey, Eugene Wesley	M. E.	Voc.	Portland
Harvey, Joseph Paul	Chem. E.	Jr.	Corvallis
Harvey, Lawrence Edwin	M. E.	Voc.	Portland
Harvey, Wm. Martin	M. E.	Fr.	Monmouth
Harwood, Clarence Henry	M. E.	Voc.	Silverton
Haseltine, Frances Gordon	H. E.	Voc.	Portland
Hastings, Marie M.	Com.	Soph.	Springfield
Hatch, Horace Clinton	M. E.	Soph.	Roseburg
Hathway, Rudolph Edson	Agri.	Fr.	Corvallis
Hattan, Elton M.	Min.	Sr.	Oregon City
Hattan, Guy Earl	M. E.	Voc.	Oregon City
Hague, Osmond Johann	Agri.	Soph.	Woodburn
Hauxwell, Lester Ray	M. E.	Voc.	Lebanon

Name	Course	Rank	Home Address
Hawk, Helen	Phar.	Fr.	Portland
Hawkins, LeRoy Alva	M. A.	Voc.	Toledo
Hawley, Francelle	H. E.	Jr.	McCoy
Haworth, Alfred Roscoe	Agri.	Spec.	Newberg
Hayden, George Roberts	Agri.	Voc.	Mohawk
Hayes, Donald Hugh	M. E.	Fr.	Dallas
Hayes, Lynn Loren	M. E.	Voc.	Eugene
Hayes, Martin Oren	M. E.	Voc.	Vale
Hayes, Wm. Brewster	Agri.	Soph.	Pasadena, Calif.
Haynes, George Wayne	M. E.	Voc.	Ballston
Haynes, Joseph David	Agri.	Fr.	Boyd
Hays, Edward Lane	M. E.	Voc.	Pendleton
Hayter, Charles Cary	Com.	Fr.	Dallas
Hazen, Winifred	H. E.	Soph.	Snohomish, Wash.
Healey, Wm.	Com.	Fr.	Gladstone
Healy, Melvin Ross	M. E.	Voc.	Culver
Heater, Rollin Alfred	M. E.	Fr.	Springbrook
Heath, Antoinette Dorothy	H. E.	Spec.	Corvallis
Heath, James Adrian	M. E.	Voc.	Raymond, Wash.
Hecker, Lorin Thomas	E. E.	Voc.	Ione
Hecker, Ralph	Agri.	Voc.	Albany
Hedlund, Clara	H. E.	Spec.	Portland
Hefner, Lyda	Phar.	Fr.	Portland
Heidenrich, Philip August	E. E.	Fr.	La Grande
Heider, Lorena	H. E.	Sr.	Sheridan
Heinrich, Willmar Eugene	Com.	Fr.	Forest Grove
Heinz, Dorothy Evelyn	H. E.	Spec.	McMinnville
Heinz, Lloyd Adair	Phar.	Fr.	Silverton
Heisen, Roy Francis	M. E.	Voc.	Heisson, Wash.
Heitmeyer, Powis Lee	Phar.	Fr.	Albany
Helm, Geo. Darby	Opt.		Dallas, Texas
Helmer, Oscar Marvin	Chem. E.	Fr.	Portland
Hemphill, Samuel Grant	M. E.	Fr.	Portland
Henderson, Elmo Drisco	Phar.	Fr.	Portland
Henderson, Gene	Com.	Fr.	Davenport, Wash.
Henderson, George	Com.	Jr.	Barstow, Calif.
Henderson, Grace Winona	Com.	Spec.	Corvallis
Henderson, Loyal Wilbur	Agri.	Spec.	Salem
Henderson, Norman Philip	M. E.	Fr.	Roseburg
Henderson, Winfield Lester	Agri.	Jr.	Davenport, Wash.
Hendren, Robert Lee	M. E.	Fr.	Monmouth
Hendricks, Ida Belle	H. E.	Soph.	Woodburn
Hennagin, Pearl	H. E.	Fr.	Moro
Henry, Wm. Bryan	Com.	Soph.	Jerome, Idaho
Henry, Wilford Lee	Chem. E.	Fr.	Klamath Falls
Herigstad, Wm. Joseph	M. E.	Voc.	Silverton
Hermann, Otto Henry	C. E.	Fr.	Astoria
Hershmer, Francis Marion	Chem. E.	Fr.	Portland

Name	Course	Rank	Home Address
Hess, Ferrel Emerson	Com.	Fr.	North Powder
Hess, Iva	H. E.	Soph.	North Powder
Hesseltine, Earl Handley	Agri.	Jr.	Tulare, Calif.
Hesseltine, Emily Bliss	H. E.	Fr.	Tulare, Calif.
Hessemer, Robert Andrews	E. E.	Fr.	Portland
Hewett, Roy Packer	M. E.	Voc.	Portland
Heyden, Theo. A.	Agri.	Fr.	Echo
Hickey, Raymond Geo.	M. E.	Voc.	Redding, Calif.
Hickok, Wrex Earl	M. E.	Voc.	McMinnville
Hicks, Hazel	H. E.	Jr.	Weiser, Idaho
Hicks, Jessie Rae	Com.	Fr.	Woodburn
Higby, Katherine	H. E.	Fr.	Forest Grove
Higgins, Harriet Margaret	H. E.	Fr.	Polson, Mont.
Hight, Homer Emory	Agri.	Voc.	Lynch, Neb.
Hildebrand, Frank F. T.	Com.	Fr.	Astoria
Hill, Alfred Ryland	M. E.	Soph.	Wilbur
Hill, Elizabeth Stewart	Com.	Fr.	Medford
Hill, William Harold	Agri.	Spec.	Eugene
Hillstrom, Rudolph John	M. E.	Fr.	Marshfield
Hillyard, Verl Jackson	Com.	Voc.	Gresham
Hirsch, Abe Leonard	Chem. E.	Fr.	Portland
Hitchcock, Geo. B.	Min.	Fr.	Portland
Hoar, Glenn Leonard	Agri.	Fr.	Forest Grove
Hobart, Alvin Dewey	Agri.	Soph.	Silverton
Hobart, Anna Marie	H. E.	Fr.	Silverton
Hobbs, Bernadine	H. E.	Soph.	Walla, Walla, Wash.
Hobbs, Rita Celestine	Com.	Jr.	Walla Walla, Wash.
Hodes, Louis	Com.	Voc.	Brooklyn, N. Y.
Hodler, Albert	Com.	Fr.	Portland
Hoefer, Andrew	M. E.	Voc.	Fresno, Calif.
Hoefler, Myron Page	Com.	Fr.	Astoria
Hofer, Wallace Robert	C. E.	Fr.	Portland
Hoffman, Carl	Com.	Voc.	Portland
Hoffman, Emmett Merle	Com.	Fr.	Grants Pass
Hoflich, Anna Irene	Com.	Fr.	Albany
Hogg, Ronald Valentine	Agri.	Fr.	Salem
Hoggatt, Andrew Carl	Agri.	Voc.	Kalama, Wash.
Hogshire, Joann	H. E.	Soph.	Corvallis
Hogshire, Jean K.	H. E.	Spec.	Thorntown, Ind.
Holbrook, Dewitt Clinton	Agri.	Fr.	Durkee
Holcomb, Ernest James	M. E.	Voc.	Portland
Holcomb, Norman Stanley	M. E.	Voc.	Clackamas
Holcomb, Scott	Agri.	Fr.	San Bernardino, Cal.
Holden, Jesse Lonson	M. E.	Sr.	Portland
Holderman, Harry Scoll	M. E.	Voc.	Disston
Hollingworth, Esther	Com.	Jr.	Newberg
Hollingworth, Merrill Arthur	Agri.	Fr.	Portland
Hollingworth, Ralph Edward	M. E.	Voc.	Hood River

Name	Course	Rank	Home Address
Holgate, Leo Lester	Com.	Voc.	Sutherlin
Holm, Fred Adam	M. E.	Voc.	Tigard
Holman, Cecilia Helen	Com.	Fr.	Portland
Holman, Roy Robert	For.	Fr.	Hood River
Holmes, Eugene Lee	M. E.	Voc.	Palermo, Calif.
Holmes, Florence	Agri.	Jr.	Portland
Holmes, Frederick Aram	Com.	Spec.	Enterprise
Holmes, Henry P.	Min.	Jr.	Corvallis
Holmes, Joseph Folger	For.	Jr.	Oakland, Calif.
Holmes, Lee Stanley	For.	Soph.	Portland
Holmes, Margaret Coleman	H. E.	Spec.	Moro
Holmes, Mary Vincent	Phar.	Soph.	Portland
Holmes, Wakefield	M. E.	Voc.	Portland
Holroyd, Imojean	H. E.	Jr.	Corvallis
Homuth, Harry Philip	M. E.	Voc.	Portland
Hongell, Geo. F.	Min.	Fr.	Marshfield
Hood, John Ernest	M. E.	Voc.	Smithton, Mo.
Hooper, Lester Elmer	Agri.	Fr.	Amboy, Wash.
Hossier, Edgar Arden	M. A.	Voc.	Stanfield
Hooton, Arthur LeRoy	M. E.	Fr.	Coquille
Hoover, Bessie Ellen	H. E.	Soph.	Albany
Hopkins, Lynn Blair	Phar.	Fr.	Corvallis
Hopson, Eric Ernest	C. E.	Soph.	Portland
Horner, Jay Edson	Agri.	Voc.	Portland
Horner, Levitt Dealey	M. E.	Fr.	Waterloo
Horning, Gladys Louise	H. E.	Jr.	Corvallis
Horning, Martha Alberta	Com.	Spec.	Corvallis
Hotchkiss, Clyde Gerold	M. E.	Voc.	Vancouver, Wash.
Hoskins, John Verne	M. E.	Voc.	Portland
Houck, Agnes Catherine	H. E.	Sr.	Portland
Houck, John Edwin	Com.	Soph.	Portland
Houck, William Lester	Agri.	Voc.	Portland
Houghton, Paul Cyrus	M. E.	Voc.	Ontario, Calif.
Houston, Ivan D.	M. E.	Voc.	Ashland
Houston, Merle	Com.	Fr.	Eagle Point
Hovenden, Grace Bonita	H. E.	Fr.	Portland
Howard, Clement Martin	Com.	Soph.	Stanfield
Howard, John Hasler	Agri.	Voc.	McMinnville
Howe, Ralph Mark	M. E.	Voc.	Portland
Howe, Ralph Palmer	E. E.	Fr.	Dallas
Howe, Ray Kipling	Phar.	Fr.	Corvallis
Howell, Ervan Leston	Com.	Soph.	Oregon City
Howey, Hazel Della	Com.	Spec.	Corvallis
Howey, Mary Olive	H. E.	Jr.	Corvallis
Howry, Charles Wm.	M. E.	Voc.	Baker
Hoxsie, Ernest Plumb	Agri.	Soph.	Folsom, Calif.
Hubbard, Arnold Elihu	E. E.	Fr.	Caldwell, Idaho
Hubbard, Clarissa Susan	H. E.	Jr.	Junction City

Name	Course	Rank	Home Address
Hubbard, Eugene Field	Agri.	Spec.	Corvallis
Hubbard, Ina Mary	Phar.	Soph.	Rickreall
Hubbard, Roland Asabel	Agri.	Fr.	Medford
Hubbard, Verda	H. E.	Sr.	Rickerall
Hubbard, Walter Philip	Agri.	Soph.	Junction
Hudson, Clyde	C. E.	Spec.	Cloverdale
Hudson, Emil Paul	C. E.	Fr.	Crabtree
Huffaker, Neal McMillan	M. E.	Soph.	Idaho Falls, Idaho
Hufner, Albert	Phar.	Fr.	Salem
Huffman, Wm. Earl	M. E.	Voc.	Portland
Hug, Mable	H. E.	Fr.	Elgin
Huggins, Jessie	Com.	Fr.	Camas
Hughes, Charles Henry	M. E.	Voc.	Corvallis
Hughes, Lester Samuel	Com.	Fr.	Forest Grove
Hughes, Robert Emmett	Phar.	Soph.	Heppner
Hughet, Albert Daniel	M. E.	Voc.	Narrows
Huiras, Fred Otto	Agri.	Voc.	Canby
Hukill, William Virgil	M. E.	Fr.	Corvallis
Hultquist, Franz Leonard	M. E.	Fr.	Portland
Hume, Russell Eugene	M. E.	Voc.	Molalla
Humfield, Harry	Agri.	Jr.	Stanfield
Humphrey, Indianus Andrew	Agri.	Fr.	Corvallis
Humphrey, Winfred Earl	E. E.	Fr.	Klamath Falls
Hunspergerfi Nora Violet	H. E.	Fr.	Corvallis
Hunt, Herbert Edwin	Com.	Fr.	Baker
Hunter, Elmer Dean	Agri.	Sr.	Portland
Hunter, Warren Clair	Phar.	Jr.	Albany
Huntington, Mary	H. E.	Fr.	Yoncalla
Huntington, Sara	H. E.	Fr.	Yoncalla
Huntress, Fred	For.	Voc.	Portland
Hurner, Frank Joe	M. E.	Jr.	Carlton
Husbands, Emily R.	H. E.	Soph.	Mosier
Husbands, Esther Rorden	H. E.	Sr.	Hood River
Husbands, Myrtle	Com.	Sr.	Hood River
Huson, Jane Evelyn	Opt.		Cornelius
Hutchens, Clyde E.	E. E.	Fr.	Goshen
Hutchings, Earl Albert	Min.	Sr.	Corvallis
Hutchins, Gladys G.	H. E.	Jr.	Portland
Hutchinson, Fred Dan	M. E.	Voc.	Dundee
Hutchinson, Grace C.	Com.	Spec.	Ontario, Canada
Huycke, Lyman Gerald	M. E.	Voc.	Camas, Wash.
Hyde, James B.	Min.	Jr.	Portland
Ide, Marion A.	H. E.	spec.	McMinnville
Ingersoll, Clarence Claude	E. E.	Fr.	Salem
Ingham, Emery Claire	C. E.	Fr.	Portland
Ingle, Dollie Alice	H. E.	Spec.	Mt. Vernon
Inglis, John Allen	M. E.	Voc.	Quincey

Name	Course	Rank	Home Address
Ingman, Edwin Leonard	C. E.	Voc.	Portland
Ingram, Fred	C. E.	Fr.	Monroe
Ingram, Medford Leroy	M. E.	Voc.	Harrisburg
Inman, Ben. Harrison	Agri.	Voc.	Adams
Inman, Loris Franklin	Agri.	Fr.	Veneta
Inman, Weslie Oliver	M. E.	Soph.	Vader, Wash.
Ireland, David Kenneth	Com.	Soph.	Bellingham, Wash.
Ireland, Edith	H. E.	Jr.	Portland
Ireland, Orlin LeRoy	Phar.	Jr.	Portland
Irving, Leonard Darval	Agri.	Voc.	Portland
Irving, Ralph E.	Agri.	Sr.	Crane
Irvin, Ordo Wm.	Min.	Fr.	Oakley, Kans.
Isaacson, Myrtle C.	H. E.	Fr.	Marshfield
Isham, Harvey Harold	M. E.	Voc.	Grants Pass
Itzikowitz, Eliot Simon	M. E.	Voc.	Portland
Iverson, Arthur Clayton	C. E.	Voc.	Portland
Ivie, Merle Roy	Com.	Fr.	Salem
Jack, Geo. Harvey	Chem. E.	Fr.	Portland
Jackman, Louise	Com.	Fr.	Lynden, Wash.
Jackman, Orel Eva	H. E.	Soph.	Lynden, Wash.
Jackson, Chester Wayne	M. E.	Fr.	Molalla
Jackson, Mildred Mae	Com.	Fr.	Corvallis
Jackson, Wm. Cecil J.	M. E.	Voc.	Lookingglass
Jackson, William Edwin	E. E.	Fr.	Harrisburg
Jackson, Zelma Geneva	Opt.		Grants Pass
Jacobson, Ben	M. E.	Voc.	Portland
Jacobson, Elma Emelia	H. E.	Spec.	Astoria
Jacobson, Herbert Jacob	M. E.	Voc.	Portland
Jacobson, Roma	Com.	Soph.	La Grande
Jager, Jacob	M. E.	Fr.	Junction City
James, Hardin Luther	Chem. E.	Fr.	Rainier
Jamieson, Edna Vere	H. E.	Fr.	Jewell
Jamieson, Frank Jas.	Agri.	Voc.	Jewell
Janes, Theodore Charles	Agri.	Voc.	Pendleton
Jasper, Merrell Clair	M. E.	Soph.	Baker
Jayne, Egbert Wesley	Agri.	Fr.	Santa Ana, Calif.
Jeffress, Lloid Alex.	E. E.	Fr.	Portland
Jenkins, Carl Bristow	M. E.	Fr.	Corvallis
Jenkins, Doris Mildred	H. E.	Soph.	Portland
Jenkins, John Donald	Chem. E.	Jr.	Portland
Jenks, Marylee	H. E.	Soph.	Tangent
Jennings, Evangeline	H. E.	Fr.	Salem
Jennings, Geo. Thomas	Com.	Fr.	Portland
Jennings, John Wm.	For.	Voc.	Corvallis
Jensen, Clarence Jack	M. E.	Voc.	Portland
Jensen, Harold Dewey	M. E.	Voc.	Portland
Jeppeson, John	M. E.	Fr.	Bacona
Jewel, Paul W.	Phar.	Jr.	Corvallis

Name	Course	Rank	Home Address
Jewell, Robert L.	Min.	Soph.	Portland
John, S. Helen	Com.	Jr.	Corvallis
Johnson, Adell	Com.	Fr.	Corvallis
Johnson, Alfred Lincoln	M. E.	Fr.	Prairie City
Johnson, Alfred James	Com.	Fr.	La Grande
Johnson, Arthur Alva	Agri.	Voc.	Echo
Johnson, Cecil Byron	M. E.	Voc.	Gold Hill
Johnson, Clarence Albert	M. E.	Voc.	Riverton
Johnson, Clifford William	C. E.	Fr.	Oak Grove
Johnson, Dora Mary Helen	H. E.	Spec.	The Dalles
Johnson, Doris L.	H. E.	Fr.	Polson, Mont.
Johnson, Earl A.	Agri.	Fr.	Portland
Johnson, Edwin Alvin	Com.	Voc.	North Bend
Johnson, Edwin Martin	M. E.	Voc.	Blackly
Johnson, Ellen Otten	H. E.	Soph.	Portland
Johnson, Emil John	Com.	Fr.	Boring
Johnson, Ernest Norton	C. E.	Fr.	Stanfield
Johnson, Eulalie	H. E.	Jr.	Shullsburg, Wis.
Johnson, Frances Irene	Com.	Fr.	Portland
Johnson, Frank Ralph	Phar.	Fr.	Florence
Johnson, Freida Elvira	H. E.	Fr.	Cooston
Johnson, Gladys Viola	H. E.	Soph.	Scappoose
Johnson, Hadden Lawrence	M. E.	Fr.	Boring
Johnson, Harold William	C. E.	Fr.	Mulino
Johnson, Helmar Samuel	Agri.	Voc.	La Grande
Johnson, John Iver	Agri.	Sr.	Winlock, Wash.
Johnson, Lester James	Agri.	Fr.	Victor, Mont.
Johnson, Loren A.	Agri.	Soph.	Scappoose
Johnson, Mildred Lewis	Agri.	Jr.	St. Paul, Minn.
Johnson, Ragnor Olai	Com.	Voc	Astoria
Johnson, Theodore	M. E.	Voc.	North Bend
Johnson, Theodore Arthur	M. E.	Fr.	Portland
Johnson, William Phenizy	Com.	Voc.	Oswego
Johnson, Ture Harold	M. E.	Fr.	Woodburn
Johnson, Willard	For.	Spec.	Corvallis
Johnson, Winfield Haakon	E. E.	Soph.	Linnton
Johnston, Harold George	Com.	Voc.	Metolius
Johnston, Marie E.	Com.	Voc.	Portland
Johnston, Millard Marion	E. E.	Fr.	Rickreall
Johnston, Ruth	Com.	Fr.	Corvallis
Joice, Alfred William	Chem. E.	Fr	Portland
Jones, Albert Warren	M. E.	Voc.	Newberg
Jones, Burke Allen	M. E.	Voc.	Salem
Jones, Edward Dee	M. E.	Soph.	Corvallis
Jones, Ellis Leonard	M. E.	Voc.	Clackamas
Jones, Floyd Clark	M. E.	Fr.	Airlie
Jones, Fred Algernon	M. E.	Fr.	Portland
Jones, Frieda Buryl	Com.	Soph.	Corvallis

Name	Course	Rank	Home Address
Jones, Genevieve	Com.	Soph.	Hoff
Jones, Helen Maurene	Com.	Fr.	Vale
Jones, Herbert Gail	M. E.	Voc.	Silverton
Jones, Howard Gaylor	Agri.	Fr.	Albany
Jones, James Gordon	Agri.	Fr.	Gervais
Jones, Lloid Moore	Agri.	Voc.	Sherwood
Jones, Lloyd Helton	Agri.	Fr.	Tillamook
Jones, Margaret	H. E.	Soph.	Corvallis
Jones, Otto Norman	Agri.	Voc.	Portland
Jones, Randall Stewart	M. E.	Voc.	Portland
Jones, Walter Amos	M. E.	Voc.	New Bridge
Jones, Wm. Hugh	C. E.	Fr.	Portland
Jones, Winnifred	H. E.	Fr.	Portland
Joplin, Edward Ray	M. E.	Voc.	Knappa
Jordan, John Walton	M. E.	Voc.	Albany
Jower, Henry Wm.	M. E.	Soph.	Portland
Joyce, Richard Bishop	Agri.	Voc.	Sherwood
Judy, Norman Ewing	M. E.	Voc.	Medford
Junken, Addison Loid	Phar.	Fr.	Willamette
Justo, Robert Nolano	Agri.	Sr.	Buenos Aires, Argta.
Kaegi, Morrice C.	Phar.	Jr.	Wilbur
Kamath, Fred Julius	Agri.	Fr.	Oregon City
Kass, Louis Paul	Phar.	Fr.	Walla Walla, Wash.
Katzky, Milton Jerome	For.	Fr.	Portland
Kean, Geo. Kenneth	Phar.	Fr.	Albany
Kearney, Francis Paul	M. E.	Voc.	Astoria
Keckritz, Edwin Cedric	E. E.	Fr.	Union
Keen, Carl	M. E.	Voc.	Halsey
Keene, Roy Servais	Agri.	Jr.	Salem
Keeney, Kenneth Graham	M. E.	Fr.	La Grande
Keesee, Vernon Bradburn	M. E.	Voc.	Klamath Falls
Keever, Clyde Alonzo	Agri.	Voc.	Springfield
Keiski, Semri Seigfred	C. E.	Fr.	Ilwaco, Wash.
Keith, Byron	Phar.	Fr.	Talent
Kellems, Edgar Eugene	I. A.	Voc.	Eugene
Keller, Eugene John	Agri.	Jr.	Newberg
Keller, Robert J.	M. E.	Fr.	Ashland
Kelleway, Helen	H. E.	Fr.	Corvallis
Kelley, Francis B.	Com.	Fr.	Cove
Kelley, Vera May	H. E.	Fr.	Portland
Kellis, Willard Wilford	E. E.	Fr.	Scotts Mills
Kellog, Chandler	Com.	Soph.	Los Angeles, Calif.
Kellog, Elmer Smith	Agri.	Voc.	Portland
Kellog, Mark James	Agri.	Fr.	Fresno, Calif.
Kellog, Ralph Lester	Chem. E.	Sr.	Portland
Kelly, Eva	H. E.	Jr.	Portland
Kelly, Martimer A.	Com.	Fr.	Portland
Kelly, Tobias Joseph	Com.	Fr.	Chico, Calif.

Name	Course	Rank	Home Address
Kelsey, Hazel	H. E.	Jr.	Columbia City, Ind.
Kelso, Gordon Francis	Com.	Fr.	Junction City
Keltner, Theron Alfred	Agri.	Voc.	Norway, Oregon
Kendall, Georgia Orlo	M. E.	Voc.	Portland
Kennard, Ella	Com.	Spec.	Santa Rosa, Calif.
Kenneda, Harry Ray	M. E.	Voc.	La Grande
Kennedy, Ruth H.	H. E.	Sr.	Corvallis
Kennell, Heath Herman	Agri.	Voc.	Jewell
Kenny, Dora Lotella	H. E.	Sr.	Portland
Keown, Wm. Osborn	M. E.	Fr.	Baker
Keplinger, Chas. Edw.	Agri.	Voc.	Oregon City
Keppinger, Verna M.	H. E.	Jr.	Gervais
Kerr, Claude	For.	Fr.	Oregon City
Kerr, Genevieve	H. E.	Jr.	Corvallis
Kerr, Jas. Travis	M. E.	Voc.	Gaston
Kerrick, Paul Vernon	Agri.	Fr.	Pendleton
Kester, Floyd Kenneth	E. E.	Fr.	Springfield
Kettells, Claude Eugene	Phar.	Fr.	Raymond, Wash.
Keyser, Charles Milton	Chem. E.	Fr.	Portland
Kibler, William Henry Jr.	Agri.	Fr.	North Bend
Kidd, Earl Guy	Com.	Fr.	Gaston
Kidd, Richard Thomas	Agri.	Voc.	Amity
Kidwell, Charles Jerome	E. E.	Fr.	Parkplace
Kies, Gladys Ruth	H. E.	Soph.	Vancouver, Wash.
Kincaid, Trevor McKibben	C. E.	Fr.	Portland
Kincaid, Wm. Brayton	Agri.	Soph.	Camas, Wash.
Kinder, Wm. Dale	Agri.	Fr.	Prescott, Wash.
King, Earl Robert	M. E.	Voc.	Halsey
King, Eldon Lee	M. E.	Fr.	Weston
King, Helen	Com.	Fr.	Salem
Kingsley, Everette E.	H. E.	Sr.	Hermiston
Kirchenschlager, Delbert D.	Agri.	Soph.	Monrovia, Calif.
Kirk, Arthur Romine	E. E.	Soph.	Milton
Kirk, James Townsend	E. E.	Fr.	Medford
Kirk, Lorne James	Com.	Voc.	St. Paul
Kirk, Thomas Sample	Agri.	Fr.	Bozeman, Mont.
Kirkwood, Joseph Edward	Agri.	Voc.	Amity
Kitchel, Cecil Robert	M. E.	Voc.	Mt. Hood
Klages, Karl Henry	Agri.	Soph.	Corvallis
Kleinau, Carl S.	M. E.	Soph.	Jerome, Idaho
Klemsen, George Phillip	M. E.	Voc.	Oregon City
Klinger, Lloyd Norman	Agri.	Fr.	Woodburn
Klink, Chester Arthur	M. E.	Soph.	Portland
Knape, Elsa Evelyn	H. E.	Jr.	Gardena, Calif.
Knapp, Lloyd	M. E.	Fr.	Port Orford
Knauf, Wm. John	M. E.	Voc.	Lebanon
Knight, Silvanus	M. E.	Voc.	Portland
Knightson, James Russell	M. E.	Voc.	Albany

Name	Course	Rank	Home Address
Knips, Avis	H. E.	Soph.	Grants Pass
Knips, Clara	H. E.	Fr.	Grans Pass
Knoll, Lillian Sikes	Opt.		Corvallis
Knotts, Elizabeth	Com.	Fr.	Corvallis
Knotts, Ethel	Com.	Fr.	Corvallis
Knox, Roscoe Roots	M. E.	Voc.	Portland
Knox, Theron E.	Com.	Soph.	John Day
Koehler, Frank Allison	M. E.	Voc.	Portland
Komm, Alice Pearl	Opt.		Portland
Korneman, Goldie Gladys	Com.	Fr.	Walla Walla, Wash.
Koskenvaara, Emil F.	I. A.	Voc.	Kullaa Pori, Finland
Kosmecki, Isadore Lewis	Com.	Voc.	Portland
Krall, William Jessie	Agri.	Fr.	Portland
Krause, Cris Milton	Agri.	Jr.	Long Beach, Calif.
Kraeamer, Madeline	H. E.	Soph.	Independence
Krebs, John Samuel	M. E.	Voc.	Salem
Krebs, William Wm.	Agri.	Fr.	Talbot
Kroll, Francis Benj.	M. E.	Voc.	Oregon City
Kruger, Louie Hans	E. E.	Soph.	Corvallis
Kruger, Robert Frank	E. E.	Fr.	Portland
Kublin, June May	H. E.	Sr.	Stayton
Kuehner, Richard Carl	Agri.	Fr.	Portland
Kugel, Edmond Frank	Phar.	Fr.	Portland
Kung, Shih Lung	Agri.	Soph.	Kiangsi, China
Kunkle, Guy Dallas	M. E.	Voc.	Donald
Kunsman, Mary Katherine	Com.	Fr.	Moro
Kupers, Elva Mayree	Com.	Fr.	Pendleton
Kutley, Edwin Mills	M. E.	Voc.	Pendleton
Kyle, Harry R.	Com.	Fr.	Portland
Kyle, Hugh Wallace	Com.	Soph.	Portland
Kyle, Robert Floyd	Com.	Jr.	Central Point
Lachele, Clarence Edward	Chem. E.	Fr.	Salem
Ladd, James Russell	E. E.	Fr.	Glendale
La Follette Dewey	Agri.	Fr.	Ashwood
Lagus, Sigurd W.	Min.	Sr.	Astoria
Lahti, Edward Andrew	Phar.	Spec.	Astoria
Laird, Cecil Ray	E. E.	Fr.	Portland
Landes, Ted Eldred	Agri.	Fr.	Mossyrock, Wash.
Landess, Dorothy May	Com.	Fr.	Dayton
Landram, Telete	H. E.	Sr.	Merced, Calif.
Lane, Bernice	Com.	Jr.	Corvallis
Lang, Willard	C. E.	Voc.	Portland
Langhardt, Avolt Peter	M. E.	Voc.	Astoria
Langly, Ethel Mary	Com.	Soph.	Portland
Langston, Maurice Charles	Phar.	Jr.	North Platte, Neb.
LaPine, Ernest John	M. E.	Voc.	Portland
Larimore, Eugene Earle	Chem. E.	Fr.	Portland
Larkin, Harold George	For.	Fr.	Nallpee

Name	Course	Rank	Home Address
Larsen, Florence Isabel	Opt.		Rock Creek, Idaho
Larson, Alvin John	M. E.	Fr.	Bellingham, Wash.
Larson, Dewey Bernard	Min.	Fr.	Portland
Larson, Thomas Earl	Com.	Fr.	Grants Pass
Lathrop, Earl Henry	Agri.	Voc.	Turner
Lathrop, Willis F.	E. E.	Jr.	Portland
LaTourrette, John Walden	Min.	Fr.	Phoenix, Ariz.
LaTourette, Rena Cornelia	H. E.	Jr.	Phoenix, Ariz.
Laumeister, Irma Amelia	Com.	Spec.	Corvallis
Lavender, Frank Thomas	Agri.	Voc.	Weston
Law, Wm. James	Agri.	Voc.	Corvallis
Lawrence, Roy Benj.	Com.	Fr.	Portland
Lawrence, Wm. Franklin	M. E.	Voc.	Vale
Laycock, Hazel Neville,	H. E.	Voc.	Salem
Layton, Clorin John	Com.	Soph.	Ratledrum, Idaho
Lazinka, Henry Hans	Agri.	Fr.	Pendleton
Leach, Edward James	C. E.	Voc.	Portland
Leadbetter, Henry L.	For.	Voc.	Portland
Leasure, Robt. Douglas	Com.	Voc.	Mt. Hood
Leavitt, Edwin Joseph	For.	Fr.	Pasadena, Cal.
Lee, Bert Clark	Agri.	Voc.	Springfield
Lee, George Joseph	M. E.	Voc.	Klamath Falls
Lee, Samuel Henry	Agri.	Voc.	Warrenton
Lee, William Arel	M. E.	Voc.	Spokane, Wash.
Leep, Kay Armsten	Com.	Fr.	Myrtle Point
Leep, Robert Wallace	M. E.	Voc.	Halfway
Leggett, Chas. Earl	For.	Voc.	Portland
Lehl, John Conrad	M. E.	Voc.	Portland
Leiner, Edna Grace	H. E.	Fr.	Portland
Leininger, Henry Davis	Com.	Fr.	Albany
Le Mieux, Lloyd Edward	M. E.	Fr.	Marsfield
Lemmon, Oral Miskell	Phar.	Jr.	Salem
Lemley, Arzell Sam	M. E.	Voc.	Harrisburg
Lengren, Glenn Albert	Agri.	Fr.	Salem
Lenox, Gladys	H. E.	Jr.	Klamath Falls
Leo, Harold Raymond	Agri.	Fr.	Portland
Leonard, Chas.	M. E.	Fr.	Castle Rock, Wash.
Leonard, Clyde Wendall	Phar.	Fr.	Rose Lodge
Leonard, Harold John	M. E.	Voc.	Cedarville, Calif.
Leonetti, Gaetano	Phar.	Fr.	Portland
Lerwill, Leonard Leston	E. E.	Fr.	Brownsville
Lester, Doney Curtis	Agri.	Voc.	La Grande
Leve, Morris	Chem. E.	Soph.	Los Angeles, Calif.
Lewis, Albert Franklin	M. E.	Voc.	Portland
Lewis, Jesse Fernand	Com.	Fr.	Clatskanie
Lewis, Mary Adele	H. E.	Soph.	Corvallis
Lewis, Normal Wesley	Com.	Fr.	Portland
Lewis, Ruth Blessing	Com.	Fr.	Corvallis

Name	Course	Rank	Home Address
Lethwaite, Norman Alex.	Chem. E.	Fr.	Ocean Falls, B. C.
Leyman, Nellie Gorton	Opt.		Greenville, Ohio
Li, Yu	M. E.	Fr.	Kioangsinfu, Kiangsi, China
Lienkaemper, Gertrude	H. E.	Soph.	Portland
Lieuallen, Byron Casper	M. E.	Voc.	Portland
Lilly, Lewis Marion	M. E.	Voc.	Glide
Lilly, Maude Estelle	Com.	Spec.	Corvallis
Lincoln, Ernest Edward	M. E.	Fr.	Carrolls, Wash.
Lind, Donald Sebastian	Min.	Fr.	Portland
Lind, Halvor M.	M. E.	Voc.	Portland
Lind, Laurie Paul	Phar.	Fr.	Portland
Lindhall, C. Hugo	Com.	Fr.	Portland
Lindley, Chester Earl	M. E.	Fr.	North Powder
Lindquist, Oscar	Agri.	Voc.	Silverton
Lindsay, Edith	H. E.	Jr.	Corvallis
Lindsay, James	M. E.	Voc.	Wilderville
Lines, Geo. Lewis	M. E.	Fr.	Albany
Lingle, Earl	M. E.	Fr.	Boring
Linn, Barton Ross	Agri.	Voc.	Long Beach, Calif.
Linquist, Aleyna J.	H. E.	Fr.	Cathlamet, Wash.
Linton, Frank Cornelius	Min.	Fr.	Corvallis
Linville, Myrtle Harriet	H. E.	Sr.	Astoria
Lippman, Nathan	M. E.	Voc.	Portland
Livengood, Helen Marie	Com.	Fr.	Albany
Livengood, Ruth Elinor	Com.	Soph.	Albany
Lloid, Mary Elida	H. E.	Spec.	Corvallis
Lockley, Lawrence C.	C. E.	Fr.	Portland
Lockwood, Philip Linton	M. E.	Voc.	Cove
Lodell, Carl Allen	Com.	Jr.	Portland
Loder, Wayne P.	Com.	Spec.	Portland
Logan, John Cassuis	Agri.	Fr.	Portland
Lomax, Lester Moss	M. E.	Voc.	Portland
Long, Carl Douglas	Com.	Jr.	Oakland
Long, Ethel Day	Com.	Jr.	Caldwell, Idaho
Long, Hervey Croxton	Min.	Fr.	Portland
Long, Morris Dean	Phar.	Fr.	Caldwell, Idaho
Long, Orville Blaine	M. E.	Voc.	Aurora
Looney, Genevieve	Com.	Fr.	Boise, Idaho
Looney, George LeRoy	I. A.	Voc.	Jefferson
Loop, Joe Former	Agri.	Voc.	McMinnville
Loosley, Merle John	Agri.	Jr.	Fort Klamath
Lorbeer, Howard Burwell	Agri.	Fr.	Claremont, Calif.
Lorenzen, Carl Theodore	M. E.	Voc.	Silverton
Loughary, Elithe	H. E.	Sr.	Monmouth
Love, Albert	M. E.	Voc.	Portland
Love, Leston Lewis	Agri.	Fr.	Corvallis
Love, Martin	M. E.	Voc.	McMinnville

Name	Course	Rank	Home Address
Lovett, Thos. C.	M. E.	Fr.	Oregon City
Lowe, Harold	Chem. E.	Fr.	Portland
Lowry, Edith Mae	H. E.	Jr.	Bellingham, Wash.
Loy, Alfred Walter	Agri.	Soph.	Buena Vista
Loy, Gilbert Frank	Agri.	Fr.	Buena Vista
Luch, Anna Louise	H. E.	Fr.	Vancouver, Wash.
Luebke, James M.	M. E.	Sr.	Toutle, Wash.
Luebke, William M.	Com.	Soph.	Toutle, Wash.
Luedinghaus, Eva Violet	Agri.	Fr.	Dryad, Wash.
Luedinghaus, Louise Harriet	H. E.	Fr.	Dryad, Wash.
Lundell, Lion W.	M. E.	Voc.	Weston
Lundell, Virgil Elmore	M. E.	Voc.	Weston
Lundgren, Alice	H. E.	Sr.	Vancouver, Wash.
Lunt, Herbert Arthur	Agri.	Fr.	Corvallis
Luper, Loren John	Agri.	Jr.	Tangent
Lusby, George Washington	Phar.	Voc.	Harrisburg
Lyman, Rolla Watson	M. E.	Fr.	La Grande
Lynch, Esther	Com.	Spec.	Scappoose
Lynch, Frank	Com.	Fr.	Salem
Lynch, Velma Mae	Com.	Fr.	Scappoose
Lyne, Phyllis Ellen	H. E.	Soph.	Creston, B. C., Can
Lyons, Daniel Earl	Phar.	Fr.	Oregon City
McBain, Donald Laughlin	Phar.	Fr.	Deer Island
McBride, Lola Winifred	H. E.	Sr.	Eddyville
McCain, Isla Mae	Com.	Jr.	Corvallis
McCain, Thomas J.	E. E.	Fr.	Corvallis
McCallum, Wm. Bales	I. A.	Voc	Suver
McCart, George Samuel	M. E.	Voc.	Harrisburg
McCart, Harry Watson	M. E.	Voc.	Tacoma, Wash.
McCart, Marion	Agri.	Soph.	McMinnville
McCaslin, Clifford H.	For.	Fr.	Portland
McCaustland, Mary Nolan	Com.	Spec.	Corvallis
McCaw, Bessie Constance	H. E.	Jr.	Prescott, Wash.
McCaw, Ethel Sara	H. E.	Jr.	Prescott, Wash.
McCaw, Marie	H. E.	Soph.	Prescott, Wash.
McCaw, Ruth Ida	H. E.	Soph.	Prescott, Wash.
McCaw, Wm. E.	Agri.	Soph.	Prescott, Wash.
McClanathan, Robert Allen	C. E.	Jr.	Astoria
McClung, Donald Riley	E. E.	Fr.	Portland
McComb, Allen Wallace	Agri.	Jr.	Klamath Falls
McComb, Mary Lovett	H. E.	Soph.	Klamath Falls
McCord, Harry W.	M. E.	Voc.	Portland
McCorkle, Owen	Agri.	Voc.	Maupin
McCormack, George Walter	C. E.	Voc.	Portland
McCormack, Raymond E.	Com.	Soph.	Roseburg
McCormack, Herbert Wells	C. E.	Fr.	Florence
McCoy, Herbert Alex.	M. E.	Voc.	Portland
McCullough, Addie	H. E.	Sr.	Portland

Name	Course	Rank	Home Address
McCullough, Isaac	Agri.	Voc.	Corvallis
McCullough, James Andrew	M. E.	Voc.	John Day
McCulloch, Paul Robertson	Agri.	Fr.	Ontario
McDonald, George Krohn	C. E.	Fr.	La Grande
McDonald, Mrs. H. C.	Com.	Jr.	Wilton, Iowa
McDonald, William C.	M. E.	Voc.	Portland
McDonald, Ted	Com.	Fr.	Portland
McDonald, Wier Wells	Com.	Fr.	Medford
McDowell, Dolly Evelyn	H. E.	Fr.	Redmond
McElroy, Clyde Hamilton	M. E.	Voc.	Hermiston
McEwen, Robt. Vernon	Agri.	Soph.	Milton
McFadden, Helen Jane	Com.	Spec.	Corvallis
McFarlane, Fred John	Agri.	Voc.	Gladstone
McGee, Harold Roscoe	Agri.	Voc.	Imnaha
McGeehan, James Baird	Com.	Fr.	Oregon City
McGillivary, Duncan Phillip	Agri.	Voc.	Clatskanie
McGilchiest, George	Agri.	Jr.	Salem
McGirr, Horace Donald	Com.	Spec.	Boise, Idaho
McGowan, Earl	E. E.	Soph.	Warrendale
McGregor, Joseph Chester	I. A.	Voc.	Gresham
McGuire, Gerald Arby	Agri.	Voc.	Albany
McIntyre, Harold Hugh	M. E.	Voc.	Athena
McIntyre, John Henry	Agri.	Soph.	Curtis Bay, Mr.
McIrvin, Delsarte Wm.	M. E.	Voc.	Vancouver, Wash.
McKenzie, Ted B.	M. E.	Fr.	Salem
McKillop, Neta Pearl	Com.	Fr.	Corvallis
McKinney, Althea Lee	Com.	Fr.	Turner
McKinney, Curtis Charles	C. E.	Fr.	Portland
McKinney, Frank Burke	M. E.	Voc.	Portland
McKinnis, Ferne	Com.	Soph.	Summerville
McKinnis, Ona	Com.	Fr.	Summerville
McKinnon, Otis	Com.	Voc.	Prineville
McKnight, Mildred Mae	H. E.	Soph.	Albany
McLarty, James Kennedy	M. E.	Voc.	Oregon City
McLaughlin, Joseph R.	M. E.	Fr.	Portland
McLaughlin, Lulu Carolyn	Com.	Spec.	Corvallis
McLean, Allen Clarke	Agri.	Fr.	Pendleton
McLeod, Henrietta	Com.	Fr.	Coquille
McMillan, Chester Ross	Agri.	Voc.	Wasco
McNamara, Frank Ward	C. E.	Voc.	Portland
McNeil, Donald John	M. E.	Fr.	Portland
McNeill, Leonard LeRoy	C. E.	Voc.	Malin
Maag, Esther Verna	H. E.	Sr.	Salem
Macanaras, Miguel	M. E.	Voc.	Portland
MacDonald, Horace Thompson	M. E.	Soph.	Corvallis
MacDougall, Leila M.	Phar.	Fr.	Medford
Mack, Earl Wright	Agri.	Fr.	Klamath Falls
Macpherson, Donald Fred.	Agri.	Fr.	Pasadena, Calif.

Name	Course	Rank	Home Address
Magee, Louie Wesley	M. E.	Fr.	Silverton
Maginnis, Agnes J.	Com.	Fr.	Corvallis
Maginnis, Frances B.	Com.	Fr.	Corvallis
Magness, Virginia Byrd	H. E.	Soph.	Amity
Magnuson, Hazel Johanna	H. E.	Sr.	Everett, Wash.
Mahan, Susie C.	Com.	Soph.	Baker
Mahanes, Claude Wayne	M. E.	Voc.	Yakima, Wash.
Mahlum, Melvin	Agri.	Voc.	Canby
Maier, Henry Jr.	M. E.	Voc.	Portland
Mainwaring, Bernard	Com.	Jr.	Newberg
Malarkey, Thomas B.	Com.	Fr.	Portland
Malmin, Martin Edward	Com.	Fr.	St. Helens
Malott, Roy Theodore	Com.	Voc.	Portland
Manatan, Daniel Carbonell	Com.	Voc.	Bacnotan, La Union, P. I.
Manela, Dorian Geo.	Agri.	Fr.	Halfway
Manheimer, Jack Louis	C. E.	Voc.	Portland
Manning, Allen Monroe	M. E.	Jr.	Vancouver, Wash.
Manning, Bernice Vera	M. E.	Fr.	Creswell
Manning, Theodore Ralph	Agri.	Spec.	Roy, Wash.
Manville, Clayton Morse	M. E.	Voc.	Eugene
Marble, Howard Granville	M. E.	Voc.	Vancouver, Wash.
Marges, Albin	Agri.	Voc.	Portland
Markart, Herbert Wm.	Agri.	Voc.	Freemont
Markle, Lorain R.	Agri.	Voc.	St. Louis, Mo.
Markell, Wilfred Boyd	M. E.	Voc.	Springbrook
Markovich, Frank	M. E.	Voc.	Portland
Marks, Earl Arthur	E. E.	Fr.	Portland
Markstrom, Carl Gus	Agri.	Voc.	Portland
Marok, Emil	Agri.	Spec.	Norway
Marquis, Edna May	Phar.	Fr.	Aledo, Ill.
Marquis, Walter Alex.	M. E.	Fr.	Aledo, Ill.
Marr, David R.	Com.	Fr.	Dundee
Marr, Uel Barton	Agri.	Voc.	Dundee
Marsa, Adolph Vaclav	M. E.	Voc.	Portland
Marsh, Frederick	M. E.	Voc.	Port Orford
Marsh, Harold Berton	Agri.	Voc.	Tumalo
Marshall, Julian Stephens	Min.	Sr.	Gladstone
Marsters, Vivian Bertha	H. E.	Fr.	Roseburg
Marstens, Maime	Com.	Jr.	Chinook, Mont.
Marstens, Marcus Henry	Com.	Soph.	Chinook, Mont.
Martin, Elsie Pauline	H. E.	Sr.	McMinnville
Martin, Emily C.	H. E.	Jr.	Corvallis
Martin, James Sherwood	Com.	Voc.	Vancouver, Wash.
Martin, Lawrence Joseph	C. E.	Fr.	Imbler
Martin, Lester Morris	Agri.	Fr.	Portland
Martin, Lois Maebel	H. E.	Soph.	McMinnville
Mason, Earl Geo.	For.	Sr.	Salem

Name	Course	Rank	Home Address
Mason, Howard	Agri.	Sr.	Pasadena, Calif.
Mason, Walter Carrol	Chem. E.	Fr.	Portland
Massey, Arl Samuel	Phar.	Fr.	Salem
Mast, James N.	M. E.	Voc.	Coquille
Masters, Alfred Richard	Com.	Fr.	Portland
Mata, Philips C.	M. E.	Voc.	San Diego, Calif.
Mather, Irving Allen	Chem. E.	Jr.	San Diego, Calif.
Mathes, Clarence LeRoy	Agri.	Fr.	Tacoma, Wash.
Mathews, Leonard Scott	M. E.	Fr.	Portland
Matlock, Earl Edis	M. E.	Fr.	Eugene
Matten, Alta Elizabeth	H. E.	Soph.	Salem
Matthes, William Ernest	M. E.	Fr.	Bellingham, Wash.
Matthews, Aner Logan	Com.	Soph.	Amity
Matthews, Donald Navarre	For.	Jr.	Salem
Matthews, Verle	H. E.	Fr.	Portland
Natthein, William P.	M. E.	Voc.	Aurora
Mattley, Helen Gail	H. E.	Fr.	Oregon City
Mattoon, Earl Hayden	M. E.	Voc.	Portland
Mallett, Deo	C. E.	Voc.	Portland
Maus, Forrest Lavon	Com.	Fr.	Myrtle Point
May, Marcus W.	Agri.	Soph.	Pendleton
May, Wallace Leon	E. E.	Fr.	Grass Valley
Meacham, Clifford P.	Agri.	Jr.	Weiser, Idaho
Meagher, Joseph T.	M. E.	Fr.	Portland
Means, Philip Wm.	Phar.	Voc.	Philomath
Medler, Arthur Henry	Com.	Fr.	Wasco
Medly, James Wm.	For.	Soph.	Oakland
Meeker, Clarence Addhill	M. E.	Voc.	Horton
Meek, James Robert	Agri.	Voc.	Junction City
Meister, George	M. E.	Voc.	Hillsdale
Meloy, Kathleen O.	Com.	Jr.	Corvallis
Meloy, Lulu V.	Com.	Jr.	Corvallis
Meltvedt, Christopher C.	M. E.	Voc.	Parma, Idaho
Mende, Herman Wm.	Chem. E.	Soph.	North Bend
Mendenhall, Marie	H. E.	Jr.	Everett, Wash.
Mennig, Christian P.	Agri.	Fr.	Pasadena, Calif.
Mentzer, Alta Belle	H. E.	Soph.	Corvallis
Mentzer, Lelend A.	I. A.	Sr.	Corvallis
Merriam, Wm. Philip	M. E.	Voc.	Rogue River
Merriman, Horace M.	Chem. E.	Fr.	Zillah, Wash.
Merritt, Byron Jack	M. E.	Voc.	Corvallis
Merchant, William Ernest	Agri.	Voc.	Lebanon
Mesher, Norman	Com.	Voc.	Portland
Metcalf, Thomas Edward	M. E.	Voc.	Albany
Metge, Millie Augusta	H. E.	Spec.	Albany
Metzger, George	M. E.	Voc.	Portland
Meyer, Arnold Geo.	M. E.	Soph.	Snohomish, Wash.
Meyer, Leland Edward	Agri.	Spec.	Stanford Univ., Cal.

Name	Course	Rank	Home Address
Meyers, Roscoe Earl	M. E.	Voc.	Echo
Meyer, Sylvester Ernest	M. E.	Fr.	Snohomish, Wash.
Meyer, William Frank	Com.	Fr.	Portland
Meyerhoeffer, Virginia	Com.	Fr.	Portland
Michael, Dean Orville	Phar.	Fr.	Boise, Idaho
Michel, Marguerite Belle	Com.	Fr.	Gresham
Michener, Arthur Phillips	Agri.	Fr.	Portland
Michener, Frank Peavey	Agri.	Fr.	Portland
Middlekauff, Ruth Helen	H. E.	Jr.	Corvallis
Milan, Wm. Jennings	M. E.	Voc.	Boriug
Miles, Anna Afton	H. E.	Fr.	Salem
Miles, Russell Bernard	M. E.	Voc.	Woods
Miller, Bertha Ruth	Com.	Fr.	Salem
Miller, Cecil Harold	Agri.	Soph.	Peoria, Ariz.
Miller, Curtis	Com.	Jr.	Union
Miller, Elsie	Com.	Spec.	Enterprise
Miller, Emery Beecher	Phar.	Fr.	Portland
Miller, Eugene David	Com.	Voc.	Paulina
Miller, Eula Ellen	H. E.	Sr.	Corvallis
Miller, Gladys Grace	H. E.	Fr.	Portland
Miller, Grace Hathway	Opt.		Corvallis
Miller, Helen Matilda	Com.	Fr.	Vancouver, Wash.
Miller, Homer DeWitt	Chem. E.	Fr.	Corvallis
Miller, Leslie A.	Agri.	Jr.	Grand Forks, B. C., Can
Miller, Lloyd C.	E. E.	Jr.	Portland
Miller, Lawrence Fred	M. E.	Fr.	Bellingham, Wash.
Miller, Otto Peter	C. E.	Voc.	Woodburn
Miller, Rollin C.	M. E.	Voc.	Corvallis
Miller, Ralph Waldo	M. E.	Fr.	Corvallis
Miller, Raymond Holbrook	M. E.	Fr.	Linnton
Miller, M. Trula	H. E.	Fr.	Corvallis
Mills, Camilla	H. E.	Soph.	Forest Grove
Mills, Clara Opal	Com.	Spec.	Corvallis
Mills, James David	M. E.	Voc.	Monroe
Minor, Blanche Celestine	H. E.	Fr.	Heppner
Mintonge, Amzy	M. E.	Voc.	Marshfield
Minx, Alfred	M. E.	Voc.	Portland
Mission, William Hawk	C. E.	Soph.	Arleta
Mitchell, Hugh Wesley	M. E.	Fr.	Kalama, Wash.
Mitchell, Nicholas Andrew	Agri.	Voc.	Buncom
Mize, Katie Olive	H. E.	Soph.	Salem
Moad, John Daniel	Com.	Fr.	Bend
Moad, Van Nelson	Com.	Fr.	Portland
Mock, James Gordon	C. E.	Fr.	Portland
Moffitt, Russell Alonzo	Com.	Fr.	Salem
Mohney, Curtis Gilliam	Mines	Jr.	Salem
Mohney, William D.	Com.	Fr.	Salem
Montgomery, Jim William	M. E.	Fr.	Portland

Name	Course	Rank	Home Address
Moon, Elmer Hiram	Min.	Fr.	La Grande
Moon, Eugene Thomas	Phar.	Fr.	La Grande
Moon, Oris Orville	M. E.	Soph.	Ft. Klamath
Moore, Elden Wade	Agri.	Fr.	Goshen
Moore, Eugene Hiram	M. E.	Fr.	Rogue River
Moore, Fred Alfred	Com.	Voc.	Turner
Moore, Genevieve	H. E.	Jr.	Corvallis
Moore, Helen A.	Com.	Fr.	Salem
Moore, Hugh R.	M. E.	Voc.	Rogue River
Moore, Iva Grace	Com.	Soph.	Corvallis
Moore, James Denzel	Min.	Fr.	Monmouth
Moore, Laura Pearl	Com.	Fr.	Gresham
Moore, Merville Wilferd	E. E.	Fr.	Condon
Moore, Neva Lewis	Com.	Soph.	Corvallis
Moore, Wm. Clair	M. E.	Voc.	Clakamas
Moore, William Glenn	Agri.	Voc.	Corvallis
Moorhouse, Ivan Herbert	Com.	Fr.	Portland
Morcom, Minnie Etta	H. E.	Jr.	Corvallis
Morcom, Margaret M.	H. E.	Jr.	Corvallis
Moreland, Clark Ernest	Agri.	Voc.	Corvallis
Moreland, Helen Margaret	H. E.	Soph.	Portland
Morene, Albert	E. E.	Fr.	Portland
Morgan, Charles Douglas	M. E.	Voc.	Corvallis
Morgan, Helen	H. E.	Voc.	Portland
Morgan, Verona Marguerite	Com.	Fr.	Everett, Wash.
Morin, Delza	Com.	Fr.	Harrison, Idaho
Morin, George Wiley	M. E.	Voc.	Yoncalla
Morley, Frances Marian	H. E.	Jr.	Silverton
Morrill, Alan Graham	Chem. E.	Fr.	Vancouver, B.C., Can.
Morrill, Dorothy Clarke	Com.	Jr.	Vancouver, B.C., Can.
Morris, Allen Wm.	Agri.	Voc.	Newberg
Morris, Carl Trindle	E. E.	Fr.	Salem
Morrison, Ernest B.	E. E.	Jr.	Morrison, Okla.
Morrow, Francis Warren	M. E.	Voc.	Portland
Morrow, Frank Clifford	Com.	Voc.	Maupin
Morse, Donald H.	E. E.	Soph.	Seattle, Wash.
Morss, Virgil Wayne	Agri.	Voc.	Albany
Mortimore, Paul DeForrest	C. E.	Fr.	Pendleton
Morton, Gladys May	H. E.	Fr.	White Salmon, Wash.
Moser, Frank Fred	Agri.	Fr.	Marshfield
Moss, Guy	M. E.	Voc.	La Grande
Mott, Randolph Weitz	Com.	Voc.	Pendleton
Moulton, Arthur Samuel	Agri.	Sr.	Portland
Moulton, Edna Anna	H. E.	Soph.	Portland
Moyer, William Joseph	M. E.	Voc.	Camas, Wash.
Mulloy, Harold William	M. E.	Voc.	Seattle, Wash.
Muller, Ruth M.	H. E.	Sr.	Eugene
Munley, Leo Paul	M. E.	Fr.	Valdez, Alaska

Name	Course	Rank	Home Address
Munson, Myrle Clarence	Phar.	Fr.	Williams
Munson, Robert Bliss	Agri.	Jr.	Chicago, Ill.
Murhard, Erroll Alex.	C. E.	Jr.	Portland
Murphy, Edward Lee	Phar.	Fr.	Caldwell, Idaho
Murray, Albert Samuel	E. E.	Soph.	Vale
Murray, Arthur Archibald	M. A.	Voc.	Baker
Murray, Edith Marie	H. E.	Sr.	Ankeny, Iowa
Murray, Gladys Lockie	H. E.	Fr.	Vale
Murray, Willette Benj.	Com.	Soph.	Ashland
Murry, Willard Joseph	Chem. E.	Fr.	Wheaton, Ill.
Mushrush, Floyd Milton	Min.	Soph.	Pasadena, Calif.
Musson, Story Alonzo	E. E.	Fr.	Marshfield
Myers, Clarence Wm.	Agri.	Sr.	Caruthers, Calif.
Myers, George Edward	M. E.	Soph.	Portland
Myers, Homer Avelyn	M. E.	Voc.	Visalia, Calif.
Myers, Mary Laura	Com.	Fr.	Portland
Myers Ralph Arlington	Agri.	Fr.	Rialto, Calif.
Myers, Ruth Eleanor	H. E.	Soph.	Portland
Myers, William Russell	M. E.	Voc.	Springfield
Naderman, George	M. E.	Sr.	Turner
Napper, Edward Henry	C. E.	Fr.	Marshfield
Natwick, Carlyle Roy	M. E.	Voc.	Eagle Point
Nebergall, Raymond A.	Com.	Spec.	Albany
Neeb, Jennings Bryan	Com.	Fr.	Ontario
Needham, Wm. Byron	M. E.	Voc.	Raymond, Wash.
Neet, Ora Russell	M. E.	Voc.	Springfield
Neil, George Carlton	M. E.	Voc.	Corvallis
Neff, Clemeth Chas.	Com.	Fr.	Anchorago, Alaska
Nelson, Alex. McLean	Com.	Voc.	Astoria
Nelson, Bernice Irene	H. E.	Fr.	Corvallis
Nelson, Carrie Mildred	Com.	Spec.	Vancouver, Wash.
Nelson, Everett John	Com.	Fr.	Castle Rock, Wash.
Nelson, Henry Allen	Com.	Fr.	Portland
Nelson, Luella	H. E.	Spec.	Corvallis
Nelson, Winifred Joseph	M. E.	Voc.	Kelso, Wash.
Nelson, Olaf Ingwall	M. E.	Voc.	Astoria
Ness, Lewis John	Com.	Fr.	Portland
Ness, Ruth Laura	Phar.	Fr.	Portland
Neuhaus, Karl F.	Agri.	Sr.	Corvallis
Newkirchner, Lester M.	Agri.	Voc.	La Grande
Neville, Alvin Willis	M. E.	Fr.	Ashland
Newcomer, Lucian E.	Agri.	Jr.	Colton, Calif.
Newell, Frank Lorenzo	M. E.	Voc.	Parkdale
Newhouse, Carla M.	H. E.	Fr.	The Dalles
Newman, Claude A.	M. E.	Voc.	Portland
Newman, Paul Clinton	Agri.	Fr.	Brighton
Newton, Orville Lester	M. E.	Voc.	Coquille
Newstrum, Clyde Wm.	M. E.	Voc.	Canby

Name	Course	Rank	Home Address
Nichols, Ben. Hodge	M. E.	Sr.	Corvallis
Nichols, Cass Adelbert	M. E.	Voc.	Salem
Nichols, Eleanor	Com.	Sr.	The Dalles
Nichols, Floyd Myron	E. E.	Sr.	Reed City, Mich.
Nichols, Glenn Brenton	M. E.	Fr.	Salem
Nichols, Madison	C. E.	Fr.	Salem
Nicholson, Frances	Phar.	Soph.	Puyallup, Wash.
Nicholson, Ruth Elizabeth	Com.	Fr.	Hood River
Nicholson, Willard Ronald	Phar.	Fr.	Marshfield
Nick, Jerome Thomas	Agri.	Voc.	Los Angeles, Calif.
Nicolai, George	Agri.	Spec.	Prineville
Neilson, Sidney Maurice	Agri.	Sr.	Ferndale, Calif.
Niles, Florence Evelyn	H. E.	Fr.	Eugene
Niles, Wallace Ellsworth	Agri.	Soph.	Grants Pass
Nilmeier, Gust	Agri.	Voc.	Fresno, Calif.
Nisley, Barbra Hoffman	Com.	Fr.	Portland
Nissen, Clara Mae	Com.	Spec.	Corvallis
Norby, Edw. Victor	Com.	Fr.	Portland
Norcott, Arthur Clarence	E. E.	Fr.	Bend
Nordlund, Nelson Ivan	M. E.	Voc.	Portland
Noren, Oscar	M. E.	Fr.	Salem
Norman, Claude Leslie	M. E.	Voc.	Lebanon
Norris, Rita	H. E.	Sr.	Corvallis
Norton, Mildred May	Com.	Fr.	Coquille
Norton, Winfield Leonard	Agri.	Sr.	Corvallis
Nosler, Claude Lyle	Com.	Fr.	Myrtle Point
Nosler, Jimmie Clay	Agri.	Voc.	Coquille
Nunn, Harry	Com.	Soph.	Corvallis
Nunsom, Francis Russell	Agri.	Voc.	Gervais
Nye, Stephen Gundlach	Com.	Fr.	Medford
Nygren, Clarence Albert	M. E.	Fr.	North Bend
Nygren, Oscar	Agri.	Fr.	Albany
Nygren, Victor Emmanuel	Agri.	Fr.	Albany
Oberstaller, Wm. Benedict	M. E.	Voc.	Portland
Obrest, Wm. Carey	M. E.	Voc.	Albany
O'Bryan, Ernest Cotton	Com.	Voc.	Portland
Obye, Herschel	C. E.	Fr.	Yamhill
O'Connor, Eugene Michael	M. E.	Voc.	Portland
Odeen, Iva Belle	Com.	Sr.	Edgewood, Md.
Odell, Robert Austin	Agri.	Voc.	Portland
Oden, Allan	M. E.	Fr.	Dixonville
Odenborg, Curtis Garfield	M. E.	Voc.	Albany
O'Donnell, William James	C. E.	Fr.	Portland
Oerding, Chas. Henry	E. E.	Fr.	Coquille
Oerding, John C.	M. E.	Voc.	Coquille
Officer, Avis Arvain	M. E.	Voc.	Halfway
Oldenburg, Arthur	M. E.	Voc.	Salem
Olmstead, Mary Augusta	Com.	Fr.	Forest Grove

Name	Course	Rank	Home Address
Olsen, Carl	Chem. E.	Fr.	Oswego
Olsen, Edward Carl	Com.	Spec.	Sherwood
Olsen, Iver Theo.	M. E.	Voc.	Portland
Olson, Caroline	Opt.		Corvallis
Olson, Charlie Albert	M. E.	Voc.	Corvallis
Olson, Herbert D.	For.	Voc.	Portland
Olson, Philip James	I. A.	Voc.	Corvallis
Olson, Sigfred G.	E. E.	Soph.	Albany
Olson, Walter Daniel	E. E.	Fr.	Portland
Olson, William Swen	M. E.	Fr.	Seaside
Oltman, Ansley Louis	Agri.	Fr.	Long Beach, Calif.
O'Neil, Elmo Harold	Phar.	Fr.	Yakima, Wash.
Onsdorff, Charles Thomas	Agri.	Fr.	Battleground, Wash.
Opedal, Martha	H. E.	Jr.	Silverton
O'Rourke, Edgar M.	Com.	Soph.	Mountaindale
Osborn, Ivan Lavern	Phar.	Fr.	Imbler
Osborn, Grant Lelend	Com.	Fr.	Roseburg
Osborn, Rex Roger	Com.	Fr.	Culver
Osburn, Orren Edgar	E. E.	Sr.	Mosier
Ostrum, Richard Jacob	M. E.	Fr.	Portland
Oswalt, Fred Loren	Agri.	Voc.	La Grande
Overstreet, Robert Scott	Agri.	Voc.	Nyssa
Overton, Faye Edna	Com.	Fr.	Brownsville
Owen, Frank Arthur	M. E.	Fr.	Portland
Owens, William Osborne	For.	Fr.	Raymond, Wash.
Owsley, Alfred Thomas	Com.	Fr.	La Grande
Pace, Arthur Melvin	Com.	Fr.	Portland
Pace, Dorothy Lola	H. E.	Voc.	Lynden, Wash.
Page, Jas. Frederick	M. E.	Fr.	Yamhill
Page, Wm. Henry	M. E.	Voc.	Sheridan
Paine, Roscoe Benj.	Agri.	Voc.	Caldwell
Palfrey, Ernest Ralph	Agri.	Soph.	Molalla
Palmer, Beatrice Lucy	Com.	Soph.	Cowichan, B. C., Canada
Palmer, Bertie Cecil	Com.	Sr.	Jordan Valley
Palmer, Claude Funston	Com.	Voc.	Portland
Palmer, Donovan P.	M. E.	Fr.	North Bend
Palmer, Grant Alton	Com.	Voc.	Colton, Calif.
Palmer, Julia L.	H. E.	Spec.	Portland
Palmer, Malcolm Geo.	M. E.	Voc.	Jordan Valley
Panter, Albert Earl	Com.	Fr.	Myrtle Point
Parcher, Phillip	I. A.	Sr.	Corvallis
Pardee, Josiah Bela	C. E.	Soph.	Grants Pass
Pardee, Marvin Irving	Com.	Fr.	Riddle
Park, Gerald J.	M. E.	Fr.	Oregon City
Parker, Allan Berthold	Agri.	Jr.	Pasadena, Calif.
Parker, Charles Henry	M. E.	Voc.	Sutherlin
Parker, Frances Louise	Com.	Fr.	Salem

Name	Course	Rank	Home Address
Parker, Glenn Orren	Agri.	Fr.	Bly
Parker, James Roland	Agri.	Fr.	Medford
Parker, LeRoy	Agri.	Voc.	La Grande
Parker, LeRoy Fred	M. E.	Voc.	Marshfield
Parker, Oscar Perry	M. E.	Voc.	Dallas
Parker, Robt. Geo.	M. E.	Fr.	San Jose, Calif.
Parker, Roland Small	M. E.	Voc.	Albany
Parker, Theo. Clifford	M. A.	Voc.	Portland
Parker, Wayne Eugene	Agri.	Voc.	Albany
Paroni, Anthony	Agri.	Fr.	Berkeley, Calif.
Parsons, Walton Winfield	Phar.	Jr.	Redmond
Patchin, Alonzo William	Agri.	Soph.	Salem
Patchin, Julia Harriet	H. E.	Fr.	Salem
Paterson, Daniel McColl	Agri.	Soph.	Portland
Patterson, Jeanette	Com.	Fr.	Medford
Patton, Dwight	Agri.	Fr.	Corvallis
Patton, Jerry B.	Agri.	Voc.	Corvallis
Patton, Waible Edison	M. E.	Voc.	Pendleton
Patty, Florence V.	H. E.	Jr.	Amity
Pauling, Linus Carl	Chem. E.	Soph.	Portland
Paulson, Amanda Sylena	Com.	Fr.	Corvallis
Paulson, Anna Josephine	H. E.	Fr.	Corvallis
Paulson, Oscar Ingval	Agri.	Jr.	Corvallis
Payne, Eddie Finley	M. E.	Voc.	Medford
Payne, Elias Seymour	Agri.	Spec.	Snohomish, Wash.
Peabody, Harry Nelson	M. E.	Fr.	Castle Rock, Wash.
Peak, Edward Burton	E. E.	Fr.	Gresham
Pearce, Lot Curtis	M. E.	Voc.	Madras
Pearson, Edna J.	H. E.	Soph.	Portland
Pearson, George Lee	M. E.	Voc.	Astoria
Pearson, Harold Ervin	Agri.	Voc.	So. Pasadena, Calif.
Pearson, Lillian J.	Com.	Soph.	Roseburg
Pease, Terris Denby	I. A.	Voc.	Jefferson
Peaslee, Ruth E.	H. E.	Jr.	Oswego
Peavy, Bradley A.	For.	Soph.	Corvallis
Peavy, Geo. Darwin	For.	Fr.	Corvallis
Peck, Harold Ira	Min.	Fr.	Grants Pass
Peirce, George Franklin	Com.	Fr.	Glendale, Calif.
Pemberton, Robert Barkly	M. E.	Fr.	Whittier, Calif.
Pennebaker, Searle P.	M. E.	Voc.	Tangent
Penney, Dillazon	M. E.	Voc.	Stanfield
Perkins, Glenn Warren	Com.	Fr.	Portland
Perlman, Harry	M. A.	Voc.	Portland
Pernot, Dorothy	H. E.	Jr.	Corvallis
Perry, William M.	Agri.	Fr.	Houlton
Persinger, Wm. Clanton	Agri.	Voc.	Corvallis

Name	Course	Rank	Home Address
Peterson, Carl Alfred	I. A.	Voc.	Portland
Peterson, Ella	H. E.	Fr.	Junction City
Peterson, Emil Ralph	Agri.	Jr.	North Bend
Peterson, Fred Charles	Com.	Fr.	Salem
Peterson, Inez Mae	Com.	Sr.	Mist
Peterson, Louis LeRoy	Agri.	Voc.	Elmra
Peterson, Harvey Monroe	Com.	Fr.	Salem
Peterson, Herbert Alvin	Agri.	Fr.	Portland
Peterson, Nettie Lucille	H. E.	Soph.	Ontario
Peterson, Wm. Mckinley	I. A.	Voc.	Grand Ronde
Peugh, Verne Leon	C. E.	Fr.	Long Beach, Calif.
Peyton, Calvin Powell	M. E.	Voc.	Klamath Falls
Pfeiffer, Charles Frank	M. E.	Fr.	Albany
Pfeiffer, Lafe Raeman	M. E.	Voc.	Portland
Phillips, Calvin Charles	Phar.	Fr.	Scotts Mills
Phillips, Kenneth	C. E.	Jr.	Albany
Phillips, William	Com.	Fr.	St. Helens
Philpott, William Henry	E. E.	Fr.	Prosper
Phipps, Ivan F.	For.	Fr.	Ashland
Pierce, Lucille	H. E.	Jr.	La Grande
Pierson, Howard Merritt	Com.	Fr.	La Grande
Pike, Clifford Lee	M. E.	Voc.	Bay City
Pinkston, Clarence Elmer	C. E.	Fr.	San Diego, Calif.
Pinney, Earl Herman	M. E.	Soph.	Newberg
Piper, Phyllis	H. E.	Fr.	Rexburg, Idaho
Pippin, Louis John	M. E.	Voc.	Lebam, Wash.
Pittinger, Earl Harris	Com.	Fr.	Grants Pass
Pittman, Homer Clarence	M. E.	Fr.	Silverton
Plarth, Rolland Carl	M. E.	Voc.	Portland
Platt, Eugene Dewey	Agri.	Soph.	Claremont, Calif.
Platt, Garrett John	M. E.	Voc.	Caldwell, Idaho
Plavan, Clyde Albert	Agri.	Fr.	Santa Ana, Calif.
Plov, Nellie	Com.	Spec.	Suver
Poe, William Arthur	M. E.	Voc.	Lacomb
Poley, Evangeline Collins	H. E.	Sr.	Ashland
Poley, Minnie Irene	Com.	Spec.	Corvallis
Poling, Helen V.	H. E.	Fr.	Corvallis
Pollanz, Percy Edward	Agri.	Jr.	West Linn
Poole, Roy Mabee	Min.	Sr.	Hillsboro
Porter, Frederick Jas.	M. E.	Fr.	Roseburg
Porter, Jay S.	Agri.	Voc.	Salem
Porter, Mildred	Com.	Soph.	Corvallis
Porter, Nellie Bly	Phar.	Jr.	Silverton
Porter, Rex Delbert	Agri.	Voc.	Aumsville
Potter, Hubert	M. E.	Fr.	Eugene
Potwora, Frank Joseph	M. E.	Voc.	Nortons
Povey, Darrell Lincoln	M. E.	Voc.	Portland
Povey, David Hobkirk	M. E.	Voc.	Portland

Name	Course	Rank	Home Address
Powell, Clement Jas	M. E.	Fr.	Portland
Powell, Freida Marguerite	H. E.	Fr.	Monmouth
Powell, George Arthur	Com.	Soph.	Portland
Powell, Katheryn Gertrude	H. E.	Fr.	Roseburg
Powell, Perry Nelson	M. E.	Soph.	Monmouth
Powell, William Douglas	Agri.	Fr.	Portland
Powers, Mabel Jeannette	Com.	Spec.	Shenandoah, Iowa
Powers, Sidney B.	Com.	Fr.	Salem
Powers, Verne	H. E.	Sr.	Gold Hill
Powne, Norman	E. E.	Fr.	Banks
Prather, Harry Albert	Phar.	Jr.	Klamath Falls
Prather, Marie Alma	Com.	Jr.	Corvallis
Prescott, Elva Marguerite	Com.	Fr.	Nampa, Idaho
Prescott, Hubert William	Phar.	Fr.	Ashland
Presnall, Clifford Charles	Agri.	Fr.	North Bend
Prest, Loretta Ellen	Com.	Fr.	Chinook, Wash.
Price, Chas. Kerby	Agri.	Fr.	Chico, Calif.
Prewett, George Earl	M. E.	Voc.	Portland
Price, Elsie Groves	H. E.	Jr.	Sifton, Wash.
Price, F. Earle	Agri.	Soph.	Woodlake, Calif.
Price, Gladys Beatrice	H. E.	Soph.	Oakland
Price, William Ellsworth	Com.	Fr.	Castle Rock, Wash.
Priestly, Schuyler D.	M. E.	Voc.	Portland
Pringle, James Gardner	Chem. E.	Fr.	McMinnville
Proctor, Betty Marion	H. E.	Fr.	Everett, Wash.
Propst, Dale Dewey	Com.	Voc.	Albany
Protzman, Charles Wm.	E. E.	Fr.	Weiser, Idaho
Prouty, John Earl	M. E.	Voc.	Island City
Pruss, Louis Baker	Com.	Fr.	Portland
Pubols, John	M. E.	Voc.	Hillsboro
Puddy, Jesse Marvin	E. E.	Fr.	Hood River
Pugh, Frances Rosetta	Com.	Fr.	Brownsville
Pugh, John McKinley	Agri.	Jr.	Shedd
Pugsley, Ralph Lawrence	E. E.	Fr.	Corvallis
Pullen, Chester Arthur	M. E.	Voc.	Portland
Pullen, George Washington	Agri.	Voc.	Gresham
Pulliam, Earl	Com.	Voc.	Corbett
Purdin, Orris Ira	M. E.	Voc.	Portland
Purvis, William Malcolm	Agri.	Voc.	Vale
Putnam, Ennis Wait	Agri.	Voc.	Columbia City
Pyeatt, Ernest Carl	M. E.	Voc.	Portland
Quackenbush, Roy M.	M. E.	Soph.	Portland
Quigley, Lloyd L.	M. E.	Voc.	Vancouver, Wash.
Quimby, Cecil E.	M. E.	Voc.	Halsey
Quimby, Ethel Annette	H. E.	Soph.	Halsey
Raab,Lloyd B.	Min.	Soph.	Seattle, Wash.
Raab, Owen Eddy	M. E.	Voc.	Seattle, Wash.
Rachford, Darrel Wm.	M. E.	Fr.	Alturas, Calif.

Name	Course	Rank	Home Address
Radcliff, Edward Everett	Agri.	Sr.	Burbank, Calif.
Rahn, Fred William	Agri.	Soph.	Pasadena, Calif.
Rains, Opal	H. E.	Sr.	Oregon City
Ramsey, John Everett	Phar.	Fr.	Portland
Ramsey, Wm. Elmer	M. E.	Fr.	Portland
Randall, Clinton Ray	I. A.	Voc.	Newberg
Randall, Delbert Allen	M. E.	Voc.	Portland
Rankin, Chas. Spafford	Agri.	Fr.	Clackamas
Ransdell, Edgar Wm.	M. E.	Voc.	Portland
Rawlings, Ruth Elizabeth	H. E.	Fr.	Albany
Ray, Margaret Wright	H. E.	Soph.	Hillsdale
Rayl, Titus	M. E.	Voc.	Portland
Raymond, Austin S.	M. E.	Voc.	Waldo
Raymond, Thayer	H. E.	Sr.	Raymond, Wash.
Read, Angus Truman	M. E.	Voc.	Athena
Read, Clifford Webster	Min.	Fr.	Portland
Read, Fana Leroy	Phar.	Fr.	Corvallis
Read, Lester	M. E.	Voc.	Corvallis
Realen, Erma Rowena	H. E.	Fr.	Ontario
Readen, Harold Walton	Com.	Fr.	Ontario
Reams, William Hobart	E. E.	Fr.	Prineville
Readen, John Henry	Com.	Jr.	Corvallis
Records, Chas. Raymond	M. E.	Voc.	Freewater
Redford, Edwin Preston	Agri.	Voc.	Dorena
Redford, Homer Dwight	Agri.	Fr.	Eugene
Redman, James	E. E.	Fr.	Portland
Redmon, Lowell Jesse	I. A.	Voc.	Riffe, Wash.
Reed, Eldred Bernard	Agri.	Voc.	Corvallis
Rees, Elsie Fern	H. E.	Soph.	Ontario
Rees, Helen Jane	H. E.	Fr.	Marshfield
Reeves, Carroll Frank	M. E.	Soph.	Portland
Reeves, Orville Verle	M. E.	Voc.	Portland
Regnell, Lloyd Clifford	For.	Sr.	Hood River
Reichart, Natalie	Phar.	Soph.	Corvallis
Reiher, Rudolph John	M. E.	Fr.	North Bend
Reilly, Ronald L.	M. E.	Voc.	Portland
Reineck, Arthur Edward	M. E.	Voc.	Portland
Reinhart, Chester L.	M. E.	Fr.	Foster
Reinke, James Franklin	M. E.	Voc.	Prineville
Reints, Walter J.	M. E.	Voc.	Tangent
Renn, Waldo Adelbert	Chem. E.	Fr.	Spokane, Wash.
Rennie, Alice Marie	Com.	Fr.	Joseph
Resing, J. Lucille	Phar.	Soph.	Portland
Restine, Joseph Flint	M. E.	Voc.	Brawley, Calif.
Reuter, Fred Julian	M. E.	Voc.	Hoquiam, Wash.
Reynolds, Burley Hudson	M. E.	Voc.	Portland
Reynolds, Chas. Moses	M. E.	Voc.	Alsea
Reynolds, Gladys Opal	H. E.	Jr.	Independence

Name	Course	Rank	Home Address
Reynolds, Harold Arthur	Agri.	Voc.	Independence
Reynolds, Joe A.	Agri.	Soph.	La Grande
Reynolds, Joel Clifford	M. E.	Fr.	Portland
Reynolds, Loren E.	E. E.	Soph.	Wilbur
Reynolds, Ray Whealdon	Phar.	Fr.	Salem
Reynolds, Travis Fenton	M. E.	Voc.	Wilbur
Rhea, Hugh	M. E.	Soph.	Echo
Rhodes, Lloyd K.	Agri.	Voc.	Hood River
Rhodes, Wilbur Arthur	M. E.	Voc.	Medford
Rice, Beatrice	Com.	Soph.	Myrtle Creek
Rice, Daniel Silas	M. E.	Voc.	Condon
Rice, Everett Dewey	M. E.	Voc.	Gateway
Rice, Gladys	H. E.	Sr.	Corvallis
Rice, Laura	Opt.		Corvallis
Rice, Vie Elizabeth	Com.	Soph.	Myrtle Creek
Rich, Vida Nell	Com.	Fr.	Seward, Alaska
Richenbach, Charles	Com.	Fr.	Portland
Richards, Earl Jay	C. E.	Voc.	Portland
Richards, Eva Jeanette	H. E.	Soph.	Salem
Richards, Jarvis W.	M. E.	Voc.	Salem
Richards, Url Stanley	M. E.	Fr.	Stanfield
Richardson, Elizabeth C.	H. E.	Soph.	Portland
Richardson, Nelson Miles	Agri.	Voc.	Junction City
Richardson, Paul Kress	Min.	Fr.	Salem
Richert, Ralph James	Agri.	Spec.	Pacific Beach, Calif.
Riches, Marjorie Donna	H. E.	Fr.	Silverton
Riches, Wallace Tecumseh	Agri.	Fr.	Turner
Richter, Ruth R.	H. E.	Spec.	Portland
Richard, John Thurston	Agri.	Voc.	Corvallis
Ricketts, Ellsworth G.	C. E.	Sr.	Portland
Rickson, Carl August	For.	Jr.	Portland
Rider, Benj. Henry	M. E.	Fr.	Salem
Rieben, Otto Ernest	Agri.	Fr.	Banks
Reiger, Otto Henry	Com.	Voc.	Portland
Rierson, Willis Theodore	Agri.	Voc.	Silverton
Rietz, Herbert Herman	Com.	Voc.	Albany
Riffe, Jesse Lewis	Phar.	Fr.	Neiska, Wash.
Riggs, Lieb L.	Chem. E.	Soph.	Corvallis
Ringland, Robert Dwight	Com.	Fr.	Los Angeles, Calif.
Ringler, Robert Leston	M. E.	Fr.	Portland
Risley, Ralph Winston	M. E.	Voc.	Milwaukie
Risley, Mortimer W.	E. E.	Fr.	Adna, Wash.
Ritchey, James Lloyd	M. E.	Voc.	Forest Grove
Ritchie, Douglas Wm.	Agri.	Sr.	Corvallis
Riverman, Ben Joseph	M. E.	Voc.	Portland
Roberson, Inez	Com.	Spec.	Jerome, Idaho
Roberts, Bryan Jefferson	I. A.	Voc.	Albany
Roberts, Charles Alonzo	M. E.	Fr.	Carmel, Ind.

Name	Course	Rank	Home Address
Roberts, Eldon Keith	Agri.	Fr.	Independence
Roberts, Harold Lester	Com.	Voc.	Corvallis
Roberts, Irvin Clifford	E. E.	Fr.	Salem
Roberts, Leland Franklin	Agri.	Voc.	Corvallis
Robertson, Alfred C.	Chem. E.	Fr.	Portland
Robertson, Edward L.	Com.	Soph.	Portland
Robertson, Leslie Duncan	C. E.	Fr.	Portland
Robertson, Mary Catherine	H. E.	Sr.	Portland
Robins, John Prescott	M. E.	Voc.	Salem
Robinson, Elsie	Opt.		Cambridge, Idaho
Robinson, Erma S.	H. E.	Spec.	Corvallis
Robinson, George V.	C. E.	Sr.	Forest Grove
Robinson, Horton D.	M. E.	Voc.	Portland
Robinson, Irene	H. E.	Soph.	Forest Grove
Robinson, Inez Sims	Com.	Voc.	Eugene
Robinson, LeRoy R.	M. E.	Voc.	Portland
Robinson, Pearl Edna	Com.	Spec.	Shutlers
Robinson,Roger Chesley	C. E.	Fr.	Alsea
Robinson, Wm. Clifford	Agri.	Voc.	Vancouver, Wash.
Robison, Edna Altha	H. E.	Soph.	Coquille
Rogers, Ethel Fern	H. E.	Fr.	Woodburn
Rodman, Noble Burton	Phar.	Fr.	Baker
Rodolf, Carl F.	C. E.	Soph.	Corvallis
Roehr, Frank George	M. E.	Fr.	Portland
Roesch, Marcus Louis	M. E.	Voc.	La Grand
Roettger, Louis George	E. E.	Fr.	Portland
Roethler, Ernest Irving	M. E.	Voc.	Haines
Rogers, George D.	Agri.	Fr.	Tacoma, Wash.
Rogers, Lavina	Com.	Soph.	Portland
Roger,s Lucy Elizabeth	H. E.	Soph.	Corvallis
Rogers, Margaret A.	Com.	Soph.	San Jose, Calif.
Rogers, Sheridan James	M. E.	Voc.	Portland
Rogers, Willard Henry	E. E.	Fr.	Portland
Rohrer, Wm. Russell	Com.	Fr.	San Diego, Calif.
Rollins, Percy Chas.	M. E.	Fr.	Union
Root, Merle Josephine	Phar.	Fr.	Vancouver, Wash.
Rose, Irene Jewell	Com.	Spec.	Philomath
Rose, Jessie P.	Agri.	Spec.	Corvallis
Rose, Sol Martin	Agri.	Voc.	Portland
Rosen, Morris	Chem. E.	Soph.	Los Angeles, Calif.
Rosenbaum, Leo	Com.	Voc.	Portland
Rosenlof, Pearl C.	H. E.	Soph.	Nampa, Idaho
Rosenthall, Jerome J.	Com.	Voc.	Spokane, Wash.
Rosich, Nicholas George	Com.	Fr.	Portland
Ross, Arthur Hotchkiss	M. E.	Fr.	Salem
Ross, Lucile	H. E.	Jr.	Eugene
Ross, Orval Loid	Agri.	Voc.	Amity
Routledge, George Hollister	Min.	Fr.	Portland

Name	Course	Rank	Home Address
Rowe, Harry John	E. E.	Fr.	Goodland, Kans.
Rowland, James E.	M. E.	Voc.	Portland
Rowland, Sarah Lucile	H. E.	Fr.	Rickreall
Ruegg, Pearle Marie	Com.	Soph.	Gresham
Rundall, Muriel Lee	M. E.	Fr.	Cove
Rupp, Clarence Herbert	Agri.	Voc.	Canby
Russell, Alta Lillian	Com.	Fr.	Portland
Russell, Carl	E. E.	Soph.	Sweet Home
Russell, Charles Joseph	Agri.	Soph.	Pendleton
Russell ,Glen Walter	Com.	Fr.	Jennings Lodge
Russell, Leal Henderson	C. E.	Fr.	La Grande
Russell, Lewis Henry	E. E.	Fr.	Payette, Idaho
Rutherford, Arland Bolter	M. E.	Voc.	Portland
Rutquist, Harry Carl	C. E.	Voc.	Portland
Ryan, Gerald Lawrence	Com.	Fr.	Portland
Ryan, Marshall Thomas	M. E.	Fr.	Gladstone
Ryan, Wm. Edward	M. E.	Fr.	Scio
Rycraft, Forest V.	Agri.	Soph.	Corvallis
Ryder, Hubert Arthur	M. E.	Voc.	Portland
Ryer, Leland Milton	Chem E.	Fr.	Salem
St. Clair, Harold Franklin	Agri.	Fr.	Junction City
Sabin, Lynn Platt	Com.	Jr.	Grants Pass
Sage, Millard Jay	Agri.	Voc.	Ontario
Salisbury, Arthur Cole	Chem. E.	Soph.	Turner
Samuelson, Oliver Lorenzo	Agri.	Soph.	Brownsville
Samuelson, John C.	M. E.	Voc.	Hillsdale
Sanborn, Colby Wayne	M. E.	Voc.	Portland
Sander, Emil William	Agri.	Fr.	Dundee
Sanders, Robert Eugene	M. E.	Voc.	The Dalles
Sandon, Harry George	M. E.	Fr.	Astoria
Sandon, Helen Beatrice	H. E.	Sr.	Corvallis
Sanford, Ida C.	Com.	Soph.	Fairport, Calif.
Sarna, Sajjan S.	Agri.	Sr.	Rawal Pindi, India
Sasaki, Paul K.	Agri.	Voc.	Pomona, Calif.
Sather, Elmer Melvin	Agri.	Voc.	Hubbard
Sather, Harold Arthur	M. E.	Voc.	Bend
Sauer, Leo Thomas	M. E.	Fr.	Grants Pass
Saunders, Esther B.	Com.	Soph.	Richland
Saunders, Francis Joseph	M. E.	Voc.	Gaston
Saunders, Lila Jane	Opt.		Richland
Savage, Guy Everett	M. E.	Fr.	Portland
Sawyer, A. Maynard	Phar.	Fr.	Amity
Scea, Helen Lenore	H. E.	Jr.	Milton
Schaff, Lazare	M. E.	Voc.	Portland
Schallinger, Ernest	M. E.	Voc.	Portland
Schanz, Margaret Louise	H. E.	Voc.	Portland
Schlapf, Alma Ethelyn	H. E.	Fr.	Portland
Schetky, John Littell	E. E.	Fr.	Portland

Name	Course	Rank	Home Address
Schiewe, Benj. N.	M. E.	Soph.	Portland
Schille, Anthony Geo.	M. E.	Fr.	Portland
Schlacter, Lauren H.	Agri.	Spec.	Portland
Schlegel, Paul Edwin	C. E.	Fr.	Toutle, Wash.
Schlosser, Stewart	E. E.	Fr.	Portland
Schmidt, Harry Adolph	M. E.	Voc.	Clackamas
Schmidt, Reinhold	M. E.	Fr.	Grants Pass
Schminky, Harold Bruce	C. E.	Jr.	Eagle Creek
Schmitz, Fred Albert	M. E.	Fr.	Vancouver, Wash.
Schneider, Carl Conrad	C. E.	Voc.	Portland
Schnell, Karl Otto	M. E.	Fr.	Mayfield, Calif.
Scholl, Fred Clarence	Com.	Fr.	Portland
Schoren, Helen Margaret	Com.	Fr.	The Dalles
Schouboe, Clarke Thomas	Agri.	Spec.	Portland
Schreiber, Chas. Mitchell	C. E.	Voc.	Caldwell, Idaho
Schreiber, Esther L.	H. E.	Sr.	Chanton, Iowa
Schroeder, William W.	C. E.	Fr.	Portland
Schubert, Albert Joseph	M. E.	Voc.	Corvallis
Schubert, Placidus James	M. E.	Soph.	Corvallis
Schultz, Arthur Gustave	M. E.	Voc.	Kalama, Wash.
Schulze, Walter Oscar	E. E.	Fr.	Waterloo, Ill.
Schumaker, Benj. Franklin	Com.	Fr.	Portland
Schutt, Marjorie Laura	H. E.	Jr.	Corvallis
Schwarz, Geo. M.	E. E.	Sr.	Portland
Schwarz, Sigmund Caesar	Chem. E.	Jr.	Portland
Schweitzer, Frank Henry	Agri.	Voc.	Vancouver, Wash.
Schwind, George Julius	M. E.	Fr.	Portland
Scibird, Howard Dale	Com.	Fr.	Union
Scollard, Cecil Joseph	Agri.	Fr.	Woodburn
Scott, Carrie Alfred	M. E.	Fr.	Portland
Scott, Helena	H. E.	Fr.	Corvallis
Scott, Lloyd Leslie	M. E.	Fr.	Condon
Scotto, Edwin B.	E. E.	Soph.	Portland
Seaquest, Russell John	M. E.	Voc.	Estacada
Sebo, Clarence	Agri.	Jr.	Silverton
Secor, Harold Lamont	Phar.	Fr.	Portland
Seibert, Emil Edwin	Com.	Jr.	Pendleton
Seifert, Wm. Orval	M. E.	Voc.	Sodaville
Seivert, Albert Anthony	M. E.	Voc.	Portland
Sellers, Bernard Lee	Agri.	Voc.	Banks
Sellman, Bernard Joseph	M. E.	Voc.	Vancouver, Wash.
Selover, Eleanor Marie	H. E.	Sr.	Ignacio, Colo.
Simmer, John P. Anthony	M. E.	Voc.	Sherwood
Sistak, Vanda La Zinca	Opt.		Slayton
Settle, James Neil	E. E.	Voc.	Oakland
Severy, Homer Forsythe	E. E.	Fr.	Florence
Sevilla, Diego A.	E. E.	Soph.	San Isidro, Nueva Eciji, P. I.

Name	Course	Rank	Home Address
Seymour, Elizabeth	H. E.	Fr.	Forest Grove
Seymour, Georgia B.	Com.	Spec.	Corvallis
Shade, Enos Burke	Agri.	Fr.	Rivera, Calif.
Shade, Hobart Eugene	Agri.	Voc.	Airlie
Shafer, Carl Balford	I. A.	Voc.	Seneca, Mo.
Shake, Helen Frances	Com.	Soph.	Payette, Idaho
Shannahan, Ralph Elmo	Agri.	Soph.	Dundee
Sharp, Donald Rowe	Agri.	Voc.	Vancouver, Wash.
Shaver, Leonard Raymond	Com.	Jr.	Portland
Shaver, Ralph Thomas	E. E.	Soph.	Sutherlin
Shaw, Courtney Miller	Agri.	Fr.	Claremont, Calif.
Shaw, Helen	H. E.	Soph.	Portland
Shaw, Marshall Theo.	C. E.	Fr.	Portland
Shay, Greta Nicholas	Opt.		Portland
Shea, Esther E.	Com.	Jr.	Corvallis
Shea, Thomas Eben	M. E.	Fr.	Astoria
Shedd, Frank Raymond	Com.	Fr.	Shedd
Sheeder, Raymond Clifford	M. E.	Voc.	Clatskanie
Sheldon, Clarence Harrison	C. E.	Voc.	Portland
Shelton, Mariam E.	H. E.	Spec.	Corvallis
Shelton, Wilbur Walter	Com.	Jr.	Pomeroy, Wash.
Shen, Ping Fei	For.	Jr.	Washington, D. C.
Shepherd, Ernest LeVerl	M. E.	Voc.	Newberg
Shepherd, Grace Webster	Agri.	Spec.	Corvallis
Sherfy, Vesta Elizabeth	H. E.	Spec.	Lebanon
Sherman, Claude N.	M. E.	Voc.	Cottage Grove
Shibley, Everett Almon	M. E.	Voc.	Estacada
Shinn, Leonora Kerr	Com.	Spec.	Corvallis
Shivas, Frank	M. E.	Voc.	Portland
Short, Howard Austin	M. E.	Voc.	Prairie City
Short, Vivian Frank	M. E.	Voc.	Culver
Shumaker, Wayne Reeves	M. E.	Fr.	Jefferson
Seigmund, Floyd La Vern	M. E.	Fr.	Salem
Silver, Louise Aileen	H. E.	Jr.	Randle, Wash.
Simmons, Donald Bishop	Agri.	Voc.	Portland
Simmons, Frank Virgil	M. E.	Voc.	Bay City
Simmons, Harold Victor	M. E.	Voc.	Turner
Simmons, Harvy H.	M. E.	Voc.	Corvallis
Simmons, Joy Vernon	Min.	Fr.	Portland
Simmons, Reuben Columbus	Agri.	Voc.	Elam
Simpson, Chas. Eldon	Com.	Jr.	Carrolls, Wash.
Simpson, Lowell	C. E.	Voc.	Coquille
Simpson, Samuel Douglas	Opt.	Corvallis	Corvallis
Simpson, Willard Dewey	For.	Fr.	Salem
Sims, Coy Romance	Com.	Fr.	Roseburg
Sims, Floy Lavelle	H. E.	Fr.	Meridian, Idaho
Sims, William Henry	Agri.	Fr.	Amity
Singleterry, Glenn Edgar	Com.	Voc.	Oregon City

Name	Course	Rank	Home Address
Singler, Valentine Augustine	M. E.	Fr.	Jacksonville
Sinks, Lenore Dell	H. E.	Jr.	Gresham
Skeen, Alex. Delbert	M. E.	Voc.	Monmouth
Skelton, Joe Taff	C. E.	Soph.	Corvallis
Skov, Maren Julia	H. E.	Soph.	Ferndale, Calif.
Slack, Roy William	M. E.	Voc.	White Salmon, Wash.
Sladen, Harry Carl	Phar.	Fr.	Gladstone
Slater, Richard D.	C. E.	Fr.	Salem
Slayten, Mabel Adeline	H. E.	Sr.	Prineville
Slayton, Mildred Lura	H. E.	Sr.	Prineville
Sloan, William Franklin	Com.	Voc.	Pendleton
Smiley, Hattie	Com.	Spec.	Shenandoah, Penna.
Smith, Alvin Dewey	M. E.	Voc.	Salem
Smith, Calvin Reed	Com.	Fr.	Bend
Smith, Ira C.	M. E.	Voc.	Philomath
Smith, Clarence	M. E.	Voc.	Cottage Grove
Smith, Clarence Parrish	M. E	Voc.	Elgin
Smith, Donald Grant	M. A.	Voc.	Portland
Smith, Dorothy Dai.	Com.	Spec.	Harlan
Smith, Emmet James	C. E.	Fr.	Gardiner
Smith, Ernest Rulon	Com.	Fr.	Weston
Smith, Frank Brewster	M. E.	Voc.	Burns
Smith, Frank Leo	Agri.	Voc.	Shedd
Smith, Geo. Richmond	Agri.	Fr.	Missoula, Mont.
Smith, Gordon Keays	M. E.	Voc.	Carrolls, Wash.
Smith, Grace Ann	Com.	Spec.	Corvallis
Smith, Grace Elizabeth	H. E.	Jr.	Portland
Smith, Harry Emmett	Com.	Fr.	Reedsport
Smith, Harvy B.	Agri.	Sr.	Enterprise
Smith, Hazel Harriet	H. E.	Soph.	Corvallis
Smith, Hazel June	H. E.	Fr.	Lewistown, Mont.
Smith, Horace Molitor	M. E.	Voc.	Elgin
Smith, Janie Vivia	Com.	Soph.	Medford
Smith, Leslie Leeper	E. E.	Fr.	Corvallis
Smith, Lloyd	Agri.	Voc.	Portland
Smith, Roy Skeels	Agri.	Voc.	Dallas
Smith, Robert	M. E.	Voc.	Ontario
Smith, Russell Byron	M. E.	Voc.	Portland
Smith, Russell Martin	M. E.	Fr.	Portland
Smith, Sarah Avis	Com.	Fr.	Rainier
Smith, Sterling William	E. E.	Jr.	Portland
Smith, Thomas Hillis	Agri.	Soph.	Claremont, Calif.
Smith, Verna J.	H. E.	Spec.	Corvallis
Smith, Virginia M.	H. E.	Soph.	Ontario
Smith, Mrs. W. L.	Agri.	Spec.	Corvallis
Smith, Wallace W.	Agri.	Jr.	Corvallis
Snook, Gideon Wilson	E. E.	Fr.	Baker
Snook, Maurice Carroll	Com.	Fr.	Madras

Name	Course	Rank	Home Address
Snook, Paul	M. E.	Voc.	Salem
Snook, Ralph Marion	M. E.	Voc.	Talent
Snyder, Helen Maxine	Com.	Fr.	Corvallis
Snyder, Lucille	Com.	Fr.	Bend
Soderstrom, Lawrence F.	M. E.	Fr.	Albany
Soderstrom, Victoria	H. E.	Sr.	Albany
Soihl, Christie	M. E.	Voc.	Chinook, Wash.
Solko, Maurice	Chem. E.	Fr.	Portland
Solomon, Sam	Com.	Fr.	Portland
Solvester, Rolla Andrew	M. E.	Voc.	Mikkalo
Sommerset, Carl	Agri.	Voc.	Astoria
Sorensen, Christian Jean	Chem. E.	Fr.	Portland
Sorrels, Russel Dewey	C. E.	Voc.	Williams
South, Lawrence Gardiner	M. E.	Soph.	Pendleton
Southard, Fred Ernest	M. E.	Fr.	Miles City, Mont.
Southard, Jas. Wm.	M. E.	Voc.	Lebanon
Southwell, Howard Harrington	M. E.	Voc.	Nortons
Spain, Gail Elliott	M. E.	Jr.	Portland
Sparks, Floyd Lee	E. E.	Fr.	Walla Walla, Wash.
Spath, Harry Edward	E. E.	Fr.	Seaside
Spaulding, James Harry	E. E.	Voc.	Portland
Spawn, Leslie DeLyle	M. E.	Fr.	Bellingham, Wash.
Specht, Mabel	H. E.	Jr.	Portland
Spencer, Dean	E. E.	Fr.	Imbler
Spencer, Geo. Fenton	Agri.	Fr.	Portland
Spencer, Earl Clifford	M. E.	Voc.	Grants Pass
Spengler, Carl J.	Com.	Soph.	Great Falls, Mont.
Spitzbart, Esther Barbra	H. E.	Soph.	Salem
Spitzbart, Leo G.	Agri.	Soph.	Salem
Spragg, Fred David	Agri.	Fr.	Albany
Spranger, Fred E.	Agri.	Fr.	Salem
Spray, Elvin Carson	M. E.	Voc.	Cottage Grove
Spriggs, Glenn Elwyn	Com.	Soph.	Medford
Spriggs, James L.	Agri.	Sr.	Medford
Spuhn, Fritz Walter	C. E.	Fr.	Medford
Staats, Vere Leslie	Phar.	Jr.	Airlie
Stack, Lawrence Jerome	M. E.	Voc.	Portland
Staggs, Herman Audrey	Agri.	Voc.	Weston
Staiger, Guy Alford	Phar.	Sr.	Corvallis
Staley, William Wesley	M. E.	Voc.	Portland
Stalker, Harold	Agri.	Soph.	Copperfield
Stalsberg, Alvin C.	M. E.	Fr.	Hillsdale
Stamm, Robt. Andrew	E. E.	Fr.	Eugene
Stansbery, Edgar Harlan	Agri.	Fr.	Portland
Standley, Russell Bolton	M. E.	Voc.	Portland
Stanton, Richard Edwin	M. E.	Soph.	Portland
Starmer, Wyatt Bailey	M. E.	Fr.	Baker
Stearns, Emel Everett	M. E.	Soph.	Klamath Falls

Name	Course	Rank	Home Address
Stearns, Orson A.	Agri.	Voc.	Corvallis
Stearns, Max	M. E.	Fr.	Portland
Steele, Harold Carl	M. E.	Voc.	Portland
Steele, Isabelle Alice	H. E.	Jr.	Portland
Steele, Jesse Rudolph	M. E.	Voc.	Portland
Steele, Leighton Howe	Com.	Fr.	Portland
Steele, Oscar Wellington	M. E.	Voc.	Nehalem
Steele, Ruth	H. E.	Jr.	Creswell
Steffen, Daniel A.	Agri.	Voc.	Silverton
Steffan, Francis Wm.	M. E.	Voc.	Vancouver, Wash.
Steiger, Henry Walter	M. E.	Voc.	Portland
Stebinger, Carl Marion	Agri.	Fr.	Portland
Steiniger, David Daniel	Agri.	Fr.	Molalla
Steinkamp, Joseph Wm.	M. E.	Voc.	Aumsville
Stenstrom, Lloyd Clifford	Min.	Fr.	Salem
Stephens, Halton Aaron	Agri.	Fr.	Parma, Idaho
Stephens, James Freeman	Agri.	Voc.	Kelso, Wash.
Stephens, Robert Vance	Agri.	Voc.	Cisco, Texas
Stephenson, Carl Eugene	M. E.	Voc.	Portland
Stephenson, Mervyn	C. E.	Sr.	Condon
Steusloff, Claude H.	Agri.	Sr.	Salem
Stevenson, Harold	Phar.	Soph.	Halsey
Stewart, Chas.	M. E.	Voc.	Portland
Stewart, Harry J.	Agri.	Jr.	Portland
Stewart, Harold Lincoln	M. E.	Voc.	Halsey
Stewart, Irvin Ray	M. E.	Voc.	Grand Ronde
Stewart, James Ivan	Com.	Soph	Corvallis
Stewart, John Lee	Phar.	Fr.	Moro
Stewart, John Park	E. E.	Fr.	McMinnville
Stewart, Robert Alexander	Agri.	Jr.	Portland
Stewart, Ruth Carson	H. E.	Sr.	Athena
Stewart, Ruth M.	H. E.	Jr.	Portland
Stillman, Horace Derwin	M. E.	Voc.	Pendleton
Stimpson, Etta Lorene	H. E.	Sr.	Corvallis
Stockman, Joseph Lowell	Agri.	Fr.	Pendleton
Stoddard, Howard James	Com.	Fr.	LaGrande
Stone, Clyde Platt	Phar.	Fr.	Fairview
Stone, Ervin Patterson	Phar.	Jr.	Lone Mountain, Tenn.
Stone, John Ernest	Com.	Fr.	Woodburn
Stoneberg, Emily	H. E.	Fr.	Coberg
Stones, Lloyd Earl	M. E.	Voc.	Astoria
Storgard, Andrew Eric	Min.	Fr.	Marshfield
Stormer, Oral Monroe	M. E.	Voc.	Estacada
Stout, Isabelle Verna	Com.	Fr.	Wendling
Stoutenburg, Archie D.	Agri.	Voc.	Amity
Stover, Clarence Theodore	Agri.	Fr.	Claremont, Calif.
Strack, Philip A.	Com.	Fr.	Portland
Strahl, Newton Fenton	Com.	Soph.	Centerville, Wash.

Name	Course	Rank	Home Address
Strain, Hazel Marie	H. E.	Soph.	Pendleton
Strain, Stephanie	H. E.	Jr.	Portland
Straley, Chas. Jacob	M. E.	Voc.	Halsey
Stratton, Lorena Alberta	H. E.	Soph.	Medford
Straw, Bertha Azora	Phar.	Fr.	Woodburn
Straw, Dana Cecil	M. E.	Voc.	Salem
Streif, Hazel Jean	H. E.	Jr.	Portland
Streiff, David	Com.	Fr.	Hillsdale
Stresser, Leonard Cornelius	Agri.	Voc.	Honcut, Calif.
Strohecker, Sam Martin	M. E.	Fr.	Portland
Strome, Katherine Marcelle	H. E.	Sr.	Junction City
Strong, Chas. Wesley	M. E.	Soph.	Forest Grove
Strout, Eugene Lucas	Com.	Soph.	Amity
Stuart, Julia Merle	H. E.	Fr.	Portland
Stukel, Elmer Clifford	M. E.	Voc.	Merrill
Stutz, Lelia Bertha	H. E.	Jr.	Corvallis
Sullivan, Lenore Margaret	H. E.	Fr.	Stevensville, Mont.
Sullivan, Mary Virginia	H. E.	Spec.	The Dalles
Sullivan, Robert Dewey	M. E.	Voc.	Baker
Summers, Cyrus Alvah	Agri.	Voc.	Dallas
Summers, Harvey	M. E.	Voc.	Tigard
Summers, S. Robert	Com.	Fr.	Lebanon
Surgnier, George Dewey	Agri.	Voc.	Elgin
Sutton, Roy Herbert	M. E.	Voc.	Parkdale
Sutton, Roy Harold	M. E.	Voc.	Ridgefield, Wash.
Svenson, Lynette Joyce	Com.	Soph.	Astoria
Swan, Alex. Grant	C. E.	Soph.	San Dimas, Calif.
Swander, Louis Alexis	Com.	Voc.	Albany
Swanson, Armor Julius	Agri.	Voc.	Colton
Swearingen, Winifred	H. E.	Soph.	Toledo
Sweek, Esther	H. E.	Fr.	Corvallis
Sweek, Lois	Opt.		Corvallis
Sweeney, Elynore Dorothea	Com.	Jr.	Walla Walla, Wash.
Swift, Chas. Justin	M. E.	Voc.	Klamath Falls
Swinnerton, Mrs. Espie	Com.	Fr.	Colton, Calif.
Syrek, Gerald Casimer	E. E.	Fr.	Portland
Taber, Joseph Weslry	C. E.	Fr.	Portland
Tadlock, Marion C.	Chem. E.	Soph.	Raymond, Wash.
Taff, Clifford Clyde	M. E.	Fr.	Gladstone
Taitt, Kenneth Bradford	M. E.	Fr.	Portland
Tammen, Rose C.	H. E.	Spec.	Albany
Tannahill, James Alex.	M. E.	Voc.	Hoquiam, Wash.
Tarter, Stephen	M. E.	Fr.	Airlie
Tate, David Geheler	Agri.	Soph.	Boise, Idaho
Taylor, Daniel Clifford	M. E.	Fr.	Cottage Grove
Taylor, Earl Basil	M. E.	Voc.	Grants Pass
Taylor, Elsie Marie	H. E.	Fr.	Corvallis
Taylor, Everett Lovejoy	Phar.	Fr.	Portland

Name	Course	Rank	Home Address
Taylor, Gay Huntington	M. E.	Voc.	White Salmon, Wash.
Taylor, Herbert Mathew	Com.	Fr.	Corvallis
Taylor, Hugh S.	Agri.	Soph.	Corvallis
Taylor, John Wm.	M. E.	Voc.	Tangent
Taylor, Park Elton	C. E.	Fr.	La Grande
Taylor, Ray William	M. E.	Voc.	Albany
Taylor, Rhoda Mae	H. E.	Fr.	Corvallis
Taylor, Rollin Floyd	Com.	Fr.	Hoquiam, Wash.
Taylor, Stephen Leonard	Agri.	Soph.	San Dimas, Calif.
Teal, Harold Arthur	M. E.	Voc.	Battleground, Wash.
Teeple, Clifford Elmer	M. E.	Voc.	Gladstone
Terada, Yoshio	Agri.	Soph.	Honolulu, H. I.
Terjeson, Thomas	M. E.	Voc.	Pendleton
Terrill, Henry Harvey	Com.	Fr.	Orchards, Wash.
Terrill, Irene Hazel	Opt.		Vancouver, Wash.
Test, Fred Joseph	Com.	Fr.	Ontario
Teutsch, Wm. Lee	M. E.	Fr.	Cleveland, Ohio
Teutsch, William LeRroy	Agri.	Jr.	Spokane, Wash.
Thatcher, Leonard William	C. E.	Voc.	Portland
Thiele, Edward Fred	Agri.	Voc.	Oakland
Thiele, Herman George	M. E.	Voc.	Oakland
Thoeny, Victor Ansel	Agri.	Voc.	Weston
Thomas, Claire Lester	M. E.	Voc.	Scio
Thomas, Harold A.	Agri.	Voc.	Bartley, Nebr.
Thomas, James Ellsworth	M. E.	Voc.	San Diego, Calif.
Thomas, LeRoy Clinton	Agri.	Fr.	St. Johns
Thomas, Marvin	Agri.	Jr.	Alhambra, Calif.
Thomas, Marvin Alva	Phar.	Fr.	Corvallis
Thomas, Seymour	Agri.	Jr.	Alhambra, Calif.
Thomas, Vernon Leland	M. E.	Voc.	Brownsville
Thompson, Army Ruth	Com.	Spec.	Corvallis
Thompson, Ben	Agri.	Voc.	La Grande
Thompson, Bessie Margaret	Com.	Sr.	Santa Ana, Calif.
Thompson, Eckford	H. E.	Spec.	Gresnam
Thompson, Edmund James	Agri.	Voc.	Portland
Thompson, John	M. E.	Voc.	Portland
Thompson, John Gordon	Agri.	Fr.	Portland
Thompson, Josephine S.	Com.	Jr.	Seaside
Thompson, Leonard Marion	Com.	Fr.	Oregon City
Thompson, Leslie Paul	M. E.	Fr.	Corvallis
Thompson, Logan Edward	M. E.	Voc.	La Grande
Thompson, Warren Jay	Phar.	Fr.	Island City
Thornton, George	Agri.	Voc.	Yakima, Wash.
Throne, Thelma Louise	H. E.	Soph.	Ashland
Tichenor, Austin Kent	M. E.	Voc.	Portland
Tilden, Albert Howard	M. E.	Fr.	Nehalem
Tillotson, George Alex.	M. E.	Fr.	Tygh Valley
Tillson, Ralph Clarence	Com.	Fr.	Portland

Name	Course	Rank	Home Address
Timberlake, Merritt Burr	M. E.	Fr.	Newberg
Timmer, Latislaus H.	E. E.	Fr.	Milwaukee
Toft, Walter Marinius	M. E.	Fr.	Silverton
Toles, Martha Isabele	Com.	Fr.	Centralia, Wash.
Toliver, M. E.	Agri.	Soph.	Molalla
Tomkins, Clarence	E. E.	Soph.	Corvallis
Tomlinson, Crystal V.	Com.	Jr.	Albany
Toole,Joseph Gabriel	M. E.	Fr.	Portland
Torgler, Howard Ellen	Phar.	Fr.	Baker
Torrey, Homer Fleming	Com.	Fr.	Portland
Tower, Alvah Lee	M. E.	Voc.	Ridgefield, Wash.
Towey, James Patrick	M. E.	Voc.	Portland
Towle, Florence	H. E.	Soph.	Portland
Towner, Eleanor	H. E.	Fr.	Prineville
Townsend, Annie	H. E.	Soph.	Corvallis
Townsend, William Earl	Agri.	Spec.	Portland
Tozier, Orrin Waldo	M. E.	Voc.	Corvallis
Toy, Ernest William	Agri.	Fr.	Pasadena, Calif.
Trapp, Della M.	Opt.		Chitwood
Tracy, Ralph Stewart	M. E.	Voc.	Salem
Tromp, Anna Belle	H. E.	Sr.	Ferndale
Trotter, Averill D.	Com.	Fr.	Amity
Trusdell, Charles M.	Agri.	Sr.	Redlands, Calif.
Tucker, Loyd Ray	M. E.	Fr.	Lebanon
Tucker, Robert Lester	Chem. E.	Fr.	Bend
Tuley, Wm. Feagon	Chem. E.	Fr.	Corvallis
Turner, Joseph Kenneth	M. E.	Voc.	Portland
Turner, Marguerite E.	Com.	Jr.	Medical Springs
Turner, Maynard Ede	Com.	Soph.	Pasadena, Calif.
Turnidge, Henry Joseph	Agri.	Voc.	Talbot
Turple, Theodore Clarence	Agri.	Voc.	Portland
Tuthill, Lewis Hamilton	M. E.	Jr.	Sutherlin
Tweed, Catherine	H. E.	Sr.	Corvallis
Tweed, Edith Lillie	H. E.	Fr.	Alamorgodo, N. M.
Tyler, Burton Lucius	M. E.	Voc.	Halsey
Tyler, Walter	Agri.	Voc.	Coburg
Umphrey, Edward Lynne	Com.	Fr.	Albany
Underwood, Robert Dale	Com.	Voc.	Vancouver, Wash.
Underwood, Royal Collins	M. E.	Fr.	Oakland
Unruh, James Howard	M. E.	Voc.	Vancouver, Wash.
Upcroft, Winfield Scott	Com.	Soph.	Pittsburg, Penn.
Ure, Alice Esther	H. E.	Spec.	Portland
U'Ren, Muriel Elizabeth	H. E.	Soph.	Newberg
Valck, Frank Crowell	M. E.	Fr.	Portland
Van Allen, Wm. Lewis	Com.	Fr.	Redmond
Vanderbeck, Albert Arthur	M. E.	Voc.	St. Johns
Vanderberg, Alice Elizabeth	Phar.	Fr.	Florence
Vandervauter, Darrel E.	Com.	Voc.	Haines

Name	Course	Rank	Home Address
Van Hoeson, Robert Harold	Min.	Fr.	Bay City, Wash.
Van Hollebeke, Elvira D.	Com.	Fr.	Walla Walla, Wash.
Van Hollebeke, Hortense	Com.	Fr.	Walla Walla, Wash.
Van Loven, Donald Earl	Agri.	Soph.	Colton, Calif.
Van Osdol, Walter Raymond	Agri.	Fr.	Salem
VanStone, Edward Raymond	Agri.	Fr.	Seattle, Wash.
Van Valkenburg, C. Sylvester	Com.	Fr.	Portland
Vanvolkinburgh, James Harry	Phar.	Fr.	Clatskanie
Vanvolkinburgh, Geo. Dewey	Com.	Fr.	Clatskanie
Vassar, Archie Clayton	M. E.	Voc.	Portland
Vaughn, Clifford James	Com.	Voc.	Portland
Veatch, Dale Sylvester	M. E.	Voc.	Portland
Veatch, Raymond Robert	Com.	Fr.	Cottage Grove
Venable, Harold	M.E.	Voc.	Wasco
Versteeg, Ray Marion	M. E.	Soph.	Portland
Vestal, James Feniz	I. A.	Sr.	Eagle Point
Vertin, Cyril Leonard	Agri.	Fr.	Los Gatos, Calif.
Vierhus, Conrad	M. E.	Fr.	Oregon City
Vincent, Hazel Margaret	H. E.	Sr.	Vici, Okla.
Vincent, Russie Harold	Agri.	Voc.	Rickreall
Vitus, Laurice Bruns	M. E.	Voc.	Eugene
Vitus, Robert John	M. E.	Voc.	Eugene
Vogelpohl, Maurice E.	M. E.	Voc.	Sutherlin
Von Slomeyer, Hans Wm.	E. E.	Fr.	Portland
Von Lehe, Agnes	H. E.	Soph.	Corvallis
Von Lehe, Erma	H. E.	Soph.	Corvallis
Voruz, Ruth	H. E.	Sr.	Baker
Votaw, Wilford Wesley	M. E.	Voc.	Raymond, Wash.
Wade,Wythel	H. E.	Soph.	Island City
Wagner, Earl Ben	Phar.	Fr.	Forest Grove
Wagner, Francis Leaton	Min.	Fr.	Alta Loma, Calif.
Wagner, Henry John	M. E.	Fr.	Portland
Wagner, John Lawrence	M. E.	Voc.	Corvallis
Waid, Dollie Day	H. E.	Fr.	Yakima, Wash.
Wait, Asron Emmons	M. E.	Voc.	Canby
Wait, George N.	Com.	Soph.	Canby
Waite, Katherine Douglas	Phar.	Sr.	Dixonville
Wakefield, Harold Smith	Agri.	Soph.	Fresno, Calif.
Wakeman, Annette E.	Com.	Fr.	Portland
Wakeman, Maurice Mahany	Com.	Fr.	Portland
Walch, Bessie E.	Com.	Fr.	Portland
Waldo, George Fordyce	Agri.	Fr.	Dayton
Wale, Raymond England	M. E.	Voc.	Baker
Walker, Dorothy Irene	Com.	Fr.	Philomath
Walker, Dwight Morgan	Com.	Fr.	Florence
Walker, Ethel Elaine	H. E.	Sr.	Philomath
Walker, Geo. McGowan	C. E.	Voc.	Portland
Walker, James Harvy	M. E.	Voc.	Mohler

Name	Course	Rank	Home Address
Walker, Jessie Theodore	Agri.	Voc.	Salem
Walker, Mary Miranda	H. E.	Fr.	Dixie, Wash.
Walker, O. Garard	Com.	Jr.	Portland
Walker,Ralph Emerson	Com.	Fr.	Portland
Walker, Robert Edwin	Com.	Jr.	Mancos, Colo.
Walker, Wm. Laurence	M. E.	Fr.	Jerome, Idaho
Wall, Millicent	Com.	Soph.	Portland
Wallace, George Arthur	M. E.	Fr.	Bishop, Calif.
Walpole, John Kenneth	Agri.	Soph.	Portland
Walsted, John Palmer	Chem. E.	Soph.	Portland
Walter, Darwin Ralph	M. E.	Voc.	Tacoma, Wash.
Walters, Harold Edwin	Agri.	Voc.	Wapinitia
Walters, Wilbur Carl	E. E.	Fr.	Los Angeles, Calif.
Walther, Albert August	C. E.	Fr.	Portland
Walton, Percy Thomas	Com.	Voc.	Portland
Ward, Clyde	Agri.	Spec.	Baker
Ward, Earl Colwell, Jr.	C. E.	Voc.	Portland
Ward, Lillian Alice	H. E.	Jr.	Portland
Warrens, Robert Hewett	Agri.	Soph.	Hillsdale
Watenpaugh, Harold Leroy	Agri.	Jr.	Ontario, Calif.
Watenpaugh, Howard Norbert	Agri.	Soph.	Ontario, Calif.
Waterman, Crawford B.	Opt.		Pasadena, Calif.
Waterman, Elsworth Yale	Agri.	Soph.	Corvallis
Waterman, Whitney	Agri.	Sr.	Pasadena, Calif.
Waterman, Ernest Alonzo	M. E.	Fr.	Hermiston
Waters, Henry Samuel	Com.	Fr.	Portland
Waterworth, Carlos Campton	M. E.	Voc.	Glendale
Walterworth, Russel Thomas	M. E.	Voc.	Glendale
Watkins, Harold H.	Agri.	Fr.	Kalama, Wash.
Watkins, Viola	Com.	Fr.	Sumner, Wash.
Watson, Frances E.	Com.	Fr.	Corvallis
Watson, Margaret B.	Com.	Soph.	Hoskins
Watson, Ralph Waldo	M. E.	Voc.	Medford
Watt, Bertha	Com.	Soph.	Portland
Watt, Edith Elizabeth	Com.	Spec.	Bay City
Watt, George Alex	Chem. E.	Jr.	Portland
Watt, Harry Albert	Agri.	Fr.	Chico, Calif.
Watt, Robert Henry	Agri.	Jr.	Bay City
Watts, Carl Ramsey	M. E.	Voc.	Madras
Watterson, Alfred	C. E.	Fr.	Bishop, Calif.
Waugh, Robert Walter	C. E.	Soph.	Hood River
Waxmuth, Wm.	Agri.	Fr.	St. Johns
Weatherall, Esley Christopher	C. E.	Voc.	Portland
Weatherly, Clayton Warren	Com.	Fr.	Portland
Webb, George Maurice	Chem. E.	Fr.	Primeville
Webber, Charles H.	Agri.	Soph.	Portland
Webber, David Edwin	Phar.	Fr.	Portland
Weber, Georgia Muriel	H. E.	Soph.	Halsey

Name	Course	Rank	Home Address
Weber, Homer Ballard	E. E.	Fr.	Creswell
Weber, Otto A.	Agri.	Fr.	Corvallis
Weber, Richard Merle	Agri.	Jr.	Hood River
Weberg, Leonard Amel	Agri.	Voc.	Wapinitia
Wechter, Harry Alvin	M. E.	Voc.	Salem
Weed, Wilbur Wynn	Agri.	Soph.	Beaverton
Weeks, Richard Herbert	Chem. E.	Fr.	Portland
Wehrley, Lawrence Fred.	Phar.	Fr.	Forest Grove
Weidenheimer, Norman Wm.	Min.	Soph.	Corvallis
Weidenheimer, Russell V.	M. E.	Voc.	Hermiston
Weinstein, Harry	M. E.	Voc.	Portland
Weir, Dwight Arthur	Agri.	Voc.	Corvallis
Weisenborn, Henry Wm.	Com.	Soph.	Portland
Welch, Lloyd	M. E.	Voc.	Vancouver, Wash.
Welch, Wilbur Hazelton	C. E.	Fr.	Corvallis
Weller, George C.	M. E.	Soph.	Salem
Weller, Wm. Henry	M. E.	Fr.	Portland
Wellman, Harry R.	Agri.	Jr.	Walla Walla, Wash.
Welling, Emmett Owens	Agri.	Voc.	Portland
Wertheimer, Edgar Maurice	C. E.	Voc.	Portland
West, Albert Flavius	Com.	Soph.	Portland
West, George G.	C. E.	Soph.	Portland
West, Harold Frenderick	M. E.	Fr.	Portland
West, Marion Lou	H. E.	Jr.	Portland
Westbrook, Clifford C.	M. E.	Voc.	Albany
Westering, Ralph Alvin	M. E.	Fr.	Portland
Westfall, Philip Nelson	Com.	Fr.	Grant City, Mo.
Whaley, Mamie	H. E.	Spec.	Corvallis
Wharton, Florence A.	Phar.	Fr.	Roseburg
Wheeler, Cecil Halvor	M. E.	Fr.	Pleasant Hill
Wheeler, Ethel C.	H. E.	Soph.	Portland
Wheeler, Eva May	H. E.	Jr.	Tillamook
Whipple, Hazel Mary	Com.	Spec.	Corvallis
Whitaker, Arthur W.	Agri.	Voc.	Seaside
Whitaker, Leslie C.	Agri.	Sr.	Sacramento, Calif.
Whitaker, Richard Mason	Agri.	Voc.	Seaside
Whitaker, Willam Carey	Agri.	Jr.	Sacramento, Calif.
Whitcomb, Charles Raymond	E. E.	Fr.	Portland
White, Elsie Anna	H. E.	Spec.	Salem
White, Harold H.	Agri.	Jr.	Kerby
White, Leon Harold	Min.	Fr.	Salem
White, Leceister Stewart	E. E.	Fr.	Camp Lewis, Wash.
White, Marvin Colfax	Com.	Voc.	Portland
White, Percy Joseph	Com.	Fr.	Portland
Whitmore, Merritt	E. E.	Fr.	Portland
Whittle, Wm. David	M. E.	Fr.	Hilt, Calif.
Whittlesey, Roland Deming	Min.	Soph.	Philomath
Wicher, Carl E.	M. E.	Voc.	Camas, Wash.

Name	Course	Rank	Home Address
Weidener, William P.	M. E.	Voc.	Harrisburg
Wieman, John Samuel	Agri.	Sr.	Los Angeles, Calif.
Wienert, Alfred Gilbert	Agri.	Spec.	Airlie
Wiertzba, Edward K.	M. E.	Voc.	American Falls, Idaho
Weist, Ada Alberta	H. E.	Spec.	Portland
Weightman, Wm. Thompson	Com.	Fr.	Long Beach, Calif.
Wilbur, Russell Jay	Agri.	Fr.	Duncan
Wilcox, Horatio Nelson	M. E.	Voc.	Portland
Wilcox, Mabel Violet	H. E.	Fr.	Heppner
Wiles, Clarence E.	Agri.	Soph.	Albany
Wiley, Harold James	C. E.	Voc.	Medford
Wilkes, Lewa	Phar.	Fr.	Hillsboro
Willard, Lyle Hans	Com.	Fr.	Dayton
Willert, Floyd Byron	For.	Soph.	Corvallis
Willis, Walter Alvin	M. E.	Voc.	Portland
Willoughby, Daniel Troy	Com.	Voc.	Corvallis
Willoughby, Ralph S.	Agri.	Jr.	Harrisburg
Wilsey, Ivan Fred	M. E.	Voc.	Chelan, Wash.
Wilt, Clarence Oliver	M. E.	Spec.	Corvallis
Williams, Charles Walter	Agri.	Jr.	Corvallis
Williams, Clarence Ward	Com.	Fr.	Klamath Falls
Williams, Claude DeVall	M. A.	Voc.	Orland, Calif.
Williams, Claude	M. E.	Voc.	Sacramento, Calif.
Williams, George Lett	E. E.	Fr.	Cove
Williams, Harold Edwin	E. E.	Fr.	Portland
Williams, Hoige	Com.	Fr.	Glendale
Williams, Howard Thomas	M. E.	Fr.	Tillamook
Williams, Irene Helen	H. E.	Fr.	Monroe
Willams, Sumner W.	For.	Spec.	Glendale
Williams, Lynn A.	Agri.	Fr.	Albany
Willams, William Edward	M. E.	Voc.	Bend
Williamson, Fred Nelson	Agri.	Soph.	Yachats
Williamson, Isaac Oscar	Agri.	Fr.	Dayton
Williamson, Loma Emma	H. E.	Jr.	Corvallis
Williamson, Martha Jane	H. E.	Sr.	Corvallis
Williamson, William P.	Com.	Fr.	Portland
Willson, Merritt Aubery	M. E.	Fr.	Oregon City
Willson, Raymond Rex	Agri.	Voc.	Salem
Wilson, Celia	Phar.	Fr.	Corvallis
Wilson, Chas. Earl	M. E.	Voc.	Spray
Wilson, Clarence Curtis	M. E.	Voc.	Salem
Wilson, Clarice	H. E.	Fr.	Portland
Wilson, Doris M.	Com.	Fr.	North Powder
Wilson, Frank Edward	C. E.	Soph.	Mosier
Wilson, Harry William	Com.	Voc.	Mosier
Wilson, Heston Lawshe	Agri.	Soph.	Hemet, Calif.
Wilson, Raymond	M. E.	Voc.	Dallas
Wilson, Robert Espy	M. E.	Fr.	Oswego

Name	Course	Rank	Home Address
Wilson, Stella Nora	H. E.	Sr.	Portland
Windle, Edward John	M. E.	Fr.	Portland
Winklebleck, Ray Alvis	C. E.	Voc.	Portland
Winnard, Howard Ellis	Agri.	Fr.	Lorella
Winningham, William W.	M. E.	Voc.	Watkins
Winter, Arthur Bedison	Phar.	Fr.	Pasadena, Calif.
Wintermute, Gladys Marie	Phar.	Fr.	Seattle, Wash.
Winters, Orin Hurding	Agri.	Voc.	Elma, Wash.
Wise, Leo M.	M. A.	Voc.	Astoria
Wise, Mabel Odessa	H. E.	Fr.	Cathlamet, Wash.
Wise, Zina Alexander	M. E.	Soph.	Portland
Witherow, Sidney Daniel	Agir.	Voc.	Rivera, Calif.
Witters, Jacob Roland	M. E.	Voc.	Grants Pass
Wittmeyer, Alfred Franklin	M. E.	Voc.	Island City
Witty, Charles Ezikel	M. E.	Voc.	Imbler
Witty, John Thomas	Agri.	Fr.	Jerome, Idaho
Wohler, Victor Joseph	M. E.	Fr.	Hillsboro
Wolcott, Myron Leland	Agri.	Voc.	Spokane, Wash.
Wolcott, Marion Freeland	Agri.	Voc.	Spokane, Wash.
Wolf, Ernest Henry	C. E.	Fr.	Dilley
Wolfer, Ursule Quentine	M. E.	Fr.	Hubbard
Wolff, Ruth E.	Phar.	Soph.	Portland
Wood, Jesse Newton	M. E.	Voc.	Marshfield
Wood, LeVelle	H. E.	Soph.	Corvallis
Wood, Lyle Robert	Com.	Voc.	Mill City
Woodell, Junous Edward	Agri.	Voc.	La Grande
Woodruff, Lois Marie	Com.	Fr.	Roseburg
Woods, Marvin Arthur	Phar.	Fr.	Caldwell, Idaho
Woods, Sylvia	Phar.	Fr.	Lebanon
Woodsum, Edna May	H. E.	Sr.	Corvallis
Woodward, Enna Q.	Min.	Fr.	Creswell
Woodward, Mary	H. E.	Soph.	Portland
Woolach, Harry	C. E.	Voc.	Portland
Wooley, Ray Laurel	E. E.	Fr.	Cottage Grove
Workinger, Gerald Lowey	M. E.	Voc.	Shedds
Worthington, Orland L.	Com.	Voc.	Oswego
Worsham, Fordyce Verne	E. E.	Fr.	Union
Wrenn, Clifford Carl	M. E.	Voc.	Riedgefield, Wash.
Wright, Blanche Ellen	Com.	Jr.	Brownsville
Wright, Burton Geo.	Agri.	Fr.	Santa Ana, Calif.
Wright, Carolyn Jane	Com.	Fr.	Albany
Wright, Clarence Everett	Agri.	Fr.	Portland
Wright, Clyde Bernard	C. E.	Fr.	Portland
Wright, Edwin Kennedy	Chem. E.	Fr.	Linnton
Wright, Eugene	Agri.	Voc.	The Dalles
Wright, Frances M.	H. E.	Fr.	Corvallis
Wright, Gill Cowan	Agri.	Fr.	Modesto, Calif.
Wright, Lynn Colder	Phar.	Fr.	La Grande

Name	Course	Rank	Home Address
Wright, Malcolm Engleman	Chem. E.	Soph.	The Dalles
Wright, Rlaph Riley	E. E.	Fr.	Baker
Wunder, Eugene George	E. E.	Fr.	Portland
Wylie, Wm. George	E. E.	Voc.	Corvallis
Yates, Irma	Com.	Soph.	Corvallis
Yeatman, Irene Estelle	H. E.	Jr.	Oakland, Calif.
Yexley, Lyle Marion	H. E.	Soph.	Oregon City
Yexley, Myrle Allen	H. E.	Soph.	Oregon City
Yoder, Willis	M. E.	Voc.	Hubbard
Yoe, Harold Sewall	Com.	Voc.	Portland
York, Ralph Lee	M. E.	Fr.	North Powder
Young, Alice Annette	Com.	Fr.	Eugene
Young, Austin Merle	M. E.	Fr.	Sherwood
Young, Garth Lyall	M. E.	Soph.	Portland
Young, Hubbell Wilkins	M. E.	Voc.	Tangent
Young, James Garvin	C. E.	Fr.	Burns
Young, Justus Millard	Com.	Voc.	Montgomery City, Mo.
Young, LaVerne Fred	M. E.	Voc.	Yakima, Wash.
Young, Lewis William	Agri.	Soph.	Sherwood
Young, Wm. Barron	Com.	Voc.	Seattle, Wash.
Young, William Nelson	M. E.	Fr.	Portland
Young, Wm. Nelson	Agri.	Soph.	Seattle, Wash.
Youngblood, Paul Kenneth	M. E.	Voc.	Grants Pass
Zaik, David Irving	M. E.	Voc.	Portland
Zalkurtz, Harry Harold	M. E.	Voc.	Yakima, Wash.
Zan, Regina	Opt.		Philadelphia, Pa.
Zenger, Carl	E. E.	Fr.	Portland
Zeigler, Augusta Emily	Com.	Soph.	Portland
Zeilgler, Laura	Phar.	Sr.	White Salmon, Wash.
Zinser, Arthur	Agri.	Voc.	Heisson, Wash.
Zumwalt, Harold Weston	M. E.	Voc.	Port Orford

SUMMER SCHOOL STUDENTS

Name	Course	Home Address
Allinger, Henry Wesley	Coll.	Corvallis
Anderson, Ellen C.	Coll.	Portland
Anderson, Esther	Coll.	Salem
Appelman, Ruth Marguerite	Com.	Corvallis
Barratt, Marion Marjorie	H. E.	Portland
Bartels, F. J.	Coll.	Cottage Grove
Bartholomew, Buell	Com.	Corvallis
Bassett, K. Florence	Com.	Newberg
Berchtold, Florence E.	H. E.	Corvallis
Bethers, Raymond	Coll.	Corvallis
Binns, Mary Anderson	Coll.	Corvallis
Birch, D. Gracia	H. E.	Corvallis
Blackledge, Mrs.	Phys. Ed.	Corvallis
Bowen, Merle	Spec.	Silverton
Boord, Opal	H. E.	Corvallis
Bradley, Mrs. Pearl	H. E.	Corvallis
Brinckerhoff, Ethel	H. E.	Piedmont, Calif.
Brown, Francis	H. E.	Haines
Brown, Stella	Com.	Corvallis
Bump, C. L.	I. A.	Forest Grove
Bump, Jessie Esther	Coll.	Carnation
Burchell, Hulda	Com.	Corvallis
Burnap, James Walter	Com.	Corvallis
Cannon, Roy Edwin	Coll.	Corvallis
Carlson, Barbara Moore	H. E.	Corvallis
Chambers, Bernice	Coll.	Corvallis
Chase, Fanny	Com.	Albany
Clark, Aileen Dorris	Spec.	Seattle
Clausen, Rosa K.	H. E.	Santa Ana, Calif.
Clifford, Ida A.	H. E.	Portland
Coates, M. F.	I. A.	Portland
Cochrane, Adona	H. E.	Salem
Cofer, E. E.	Coll.	Corvallis
Cavender, Alberta	Spec.	Portland
Cramer, Rae Leah	Com.	Corvallis
Crout, Mildred	H. E.	Portland
Cunningham, Bessie	Phys. Ed.	San Jose, Calif.
Cyrus, Nellie	Coll.	Corvallis
Davis, Bertha	Phys. Ed.	Corvallis
Dinger, Viola	Coll.	Sublette, Idaho
Dinges, Grace	Coll.	Corvallis
Dinwiddie, Irene	H. E.	Corvallis
Doolittle, Maida	H. E.	Corvallis
Dryden, Horace	Coll.	Corvallis
Dunning, Eva	H. E.	Stanfield
Dye, Evangeline	H. E.	Oregon City

Name	Course	Home Address
Easton, Inez	I. A.	Sitkum
Emmett, Zaretta Ethel	Coll.	Albany
English, Charles E.	I. A.	Nehalem
English, Belle Hill	H. E.	Corvallis
Erickson, Mrs. L. J.	H. E.	Corvallis
Ervin, J. O.	I. A.	Bandon
Ewing, Mary A.	H. E.	Skaniko
Fawcett, Hazel	Com.	Corvallis
Fegley, Pearl	Coll.	Corvallis
Fehler, Mrs. E. N.	Phys. Ed.	Corvallis
Field, Frances	Com.	Twin Falls, Idaho
Fisher, Ardis	Com.	Corvallis
Fitts, Grace	Coll.	Corvallis
Forsythe, R. James	Coll.	Gaston
Fox, Otto L.	Coll.	Albany
Frederick, Marianne	Coll.	Corvallis
Freeman, Claude N.	Coll.	Corvallis
Freyler, Edna	Spec.	Corvalis
Fridley, Nettie	H. E.	Klondike
Fuller, Emma	Com.	Corvallis
Fulton, Helen	Phys. Ed.	Corvallis
Funk, Vera Magdeline	Com.	Corvallis
Galloway, Grace	Com.	Corvallis
Garber, Hazel	H. E.	Nampa, Idaho
Gardiner, Vesta	H. E.	Salem
Gates, Pearl	Com.	Corvallis
Golden, Zoe	Coll.	La Grande
Goldman, Mrs. Mary	H. E.	Corvallis
Gould, Lois	Phys. Ed.	Corvallis
Green, Ibby	Com.	Crawfordsville
Hall, Coral	H. E.	Jerome, Idaho
Hall, Phila Henrietta	Spec.	Corvallis
Hamar, Jane Cecil	Com.	Philomath
Hamlin, Lucille A.	Com.	Corvallis
Hanson, Esther	Phys. Ed.	Corvallis
Harris, Agnes	Com.	Oregon City
Heath, Eva Myrtle	Com.	Corvallis
Hedlund, Lillian	H. E.	Portland
Heller, Emma E.	H. E.	Spokane, Wash.
Hembling, Grace	Coll.	Corvallis
Hemrich, Wilhelmina	Com.	Clackamas
Hobbs, Frances	Phys. Ed.	Corvallis
Hobbs, Viola	Phys. Ed.	Corvallis
Holcomb, Fern	Com.	Cottage Grove
Holloway, Mary	H. E.	Marshfield
Holroyd, Imojean	H. E.	Corvallis
Howey, Hazel D.	Com.	Corvallis
Hunsperger, Violet	Com.	Corvallis

Name	Course	Home Address
Ingle, Calvin	Coll.	Corvallis
Irvine, Mrs. B. C.	Phys. Ed.	Corvallis
Irving, Ralph E.	Com.	Harney
Irwin, Princess	Com.	Granville, N. Dak.
Jewell, Elsie F.	H. E.	Corvallis
Jewett, Christabel	Com.	Salem
Johnson, Edlie M.	H. E.	Hermiston
Jones, Margaret Frances	Com.	Corvallis
Johnson, Lillian	H. E.	Corvallis
Keil, Caroline	H. E.	Wallace, Idaho
Keiser, Laura	H. E.	Corvallis
Kelsey, Hazel	H. E.	Corvallis
Kenny, Dora	H. E.	Portland
Kerr, Genevieve	H. E.	Corvallis
Knips, Avis	H. E.	Grants Pass
Knoll, Lillian	Phys. Ed.	Corvallis
Koenig, W. J.	Coll.	Corvallis
Lane, Dorothy	Coll.	Los Angeles, Calif.
Lay, Myrtle Edna	H. E.	Molalla
Leek, Vernon David	Com.	Corvallis
Lingenfelter, Isabel M.	Com.	Toledo
Long, Ethel Day	Com.	Caldwell, Idaho
Lunt, Mrs. Etta	Com.	Corvallis
McCaw Bessie	H. E.	Prescott, Wash.
McFadden, Jane	Com.	Corvallis
McFaul, Mrs. Mary E.	Coll.	Portland
McMaster, Mrs. M. E.	Com.	Corvallis
McReynolds, Neva	Com.	Langells Valley
McReynolds, Selma	Coll.	Klamath Falls
Maag, Esther	H. E.	Salem
Martin, Elsie Pauline	H. E.	McMinnville
Maxwell, Mrs. J. E.	H. E.	Galt, Calif.
Meloy, Kathleen	Com.	Corvallis
Meloy, Lula	Com.	Corvallis
Meserve, Lillie	H. E.	Portland
Miller, Eula	H. E.	Corvallis
Miller, Helen	H. E.	Corvallis
Moore, Maple Dell	Coll.	Wilbur
Moore, Myra L.	Coll.	Corvallis
Moore, Neva L.	Com.	Corvallis
Moore, Willetta	H. E.	Eugene
Moreland, Helen	H. E.	Corvallis
Muller, Ruth	H. E.	Eugene
Murdock, Mrs. L. J.	Coll.	Salem
Murdock, L. J.	Com.	Salem
Newhouse, Miss	Phys. Ed.	Corvallis
Nichols, Mrs. Eleanor	Com.	Corvallis
Nicholsen, Gertrude	H. E.	Hood River

Name	Course	Home Address
Norris, Rita	H. E.	Boise, Idaho
O'Conner, Viola	Coll.	Corvallis
O'deen, Iva B.	Com.	Corvallis
Olsen, Ruby	Com.	Corvallis
Owens, Mrs. Elizabeth N.	Com.	Corvallis
Paine, Cecile	Com.	Corvallis
Parr, Fern	H. E.	Woodburn
Pearson, Lillian Jenkins	Coll.	Roseburg
Peaslee, Mrs. Ruth E.	H. E.	Portland
Pernot, Dorothy	Com.	Corvallis
Peterson, Ivy	Com.	Beaverton
Pettigrew, Ruth	Com.	Redmond
Pierce, Helen June	Com.	La Grande
Pierce, Lucille	Com.	La Grande
Plank, Esther	H. E.	Woodburn
Poley, Evangeline	H. E.	Ashland
Powell, Delma	Com.	Portland
Powers, Mrs. Mabel	Com.	Corvallis
Power, Margaret	Phys. Ed.	Corvallis
Powers, Verne	H. E.	Corvallis
Prather, Marie Alma	Com.	Corvallis
Price, Elise G.	H. E.	Silton, Wash.
Purmont, Charles Elliott	Com.	Des Moines, Iowa
Rawlings, Ellen Madeline	H. E.	Albany
Reed, Elizabeth	Com.	Monmouth
Reichart, Natalie	Coll.	Corvallis
Rice, Gladys	H. E.	Corvallis
Richardson, Mabel H.	H. E.	Harrisburg
Ridenour, Elinor	Com.	Corvallis
Roberts, Mrs. D. W.	Phys. Ed.	Corvallis
Robertson, Etta	Phys. Ed.	Corvallis
Robey, Donald L.	Com.	Boise, Idaho
Rogers, Mary Alice	Spec.	Corvallis
Rutledge. Ruth A.	Com.	Portland
Sandon, Helen B.	H. E.	Corvallis
Sandon, Marcella	H. E.	Corvallis
Sawyer, Dorris	Spec.	Salem
Schick, Mrs.	Phys. Ed.	Corvallis
Schmidt, Martha Selma	Com.	Corvallis
Schneider, Louise	H. E.	Portland
Schultz, Elsie	H. E.	Gresham
Schutt, Marjorie	H. E.	Corvallis
Scott, Jennie	Phys. Ed.	Corvallis
Scott, Mary R.	Coll.	Corvallis
Selover, Eleanor M.	H. E.	Corvallis
Senter, Mrs. Floyd L.	Coll.	Eugene
Sevilla, D. A.	Coll.	San Isisio, N. E., P. I.
Sherman, Edwin T.	Com.	Corvallis

Name	Course	Home Address
Shirley, Marguerite	Com.	Weiser, Idaho
Silver, Kathleen	Coll.	Ashland
Silver, Madeline	H. E.	Ashland
Simpson, Ruth	Com.	Airlie
Slayton, Mildred Laura	H. E.	Prineville
Small, Annabel	H. E.	Cottage Grove
Smith, Mrs. E. M.	Phys. Ed.	Corvallis
Smith, Mrs. Grace	Com.	Portland
Smith, Mrs. Jesse	Phys. Ed.	Corvallis
Snyder, Mrs. A. M.	Phys. Ed.	Corvallis
Soderstrom, Victoria	H. E.	Halsey
Sprague, Helen	Coll.	Portland
Stimpson, L. Etta	H. E.	Corvallis
Stoneberg, Emily	Com.	Coburg
Stoneberg, Mrs. R. L.	I. A.	Corvallis
Stovall, John	Coll.	Philomath
Struck, Martha	H. E.	Lyle, Wash.
Summers, Mylius L.	H. E.	Fresno, Calif.
Sykes, Elizabeth Cole	Com.	Corvallis
Thompson, Albert	Coll.	Boise, Idaho
Thompson, Bessie	Com.	Corvallis
Tromp, Annabelle	Coll.	Ferndale, Wash.
True, Elsie G.	H. E.	Corvallis
Turnidge, Cora L.	H. E.	Sheridan
Turnidge, Laura Z.	H. E.	Sheridan
U'Ren, Frances	H. E.	Madras
Vermilyea, Minerva B.	H. E.	Vancouver, Wash.
Vikers, Hazzlitt A.	Com.	Corvallis
Walker, Ethel	H. E.	Philomath
Warren, Mrs.	Phys. Ed.	Corvallis
Webb, Virginia	Phys. Ed.	Corvallis
Wheeler, Hazel	Coll.	Strathmore, Calif.
Wheelock, Bertha	Com.	Medford
Whitaker, L. C.	Com.	Sacramento, Calif.
White, Elsie A.	H. E.	Salem
Wildig, Sophie	H. E.	Corvallis
Williams, Eva E.	H. E.	Dexter
Williams, Vernon	Coll.	Portland
Williamson, Loma	Com.	Corvallis
Williamson, Martha	H. E.	Corvallis
Wilson, Mary F.	H. E.	Portland
Woodham, Edna Clara	H. E.	Ukiah, Calif.
Woodson, Edna May	H. E.	Corvallis

SPECIAL MUSIC STUDENTS

Name	Course	Home Address
Atkinson, Helen	Piano	La Jolla, Calif.
Atwood, Margaret	Piano	Corvallis
Bates, Marjory	Piano	Corvallis
Bauer, Marian	Voice	Corvallis
Bell, Richard Terry	Piano	Corvallis
Bell, Vera Margaret	Piano	Corvallis
Bradshaw, William	Piano	Corvallis
Brumbaugh, Madelin	Violin	Corvallis
Chambers, Bernice	Piano	Corvallis
Clyde, Elizabeth	Violin	Corvallis
Coopey, Raymond	Cornet	Corvallis
Cramer, Theodore Putnam	Voice	Grants Pass
Elgin, Helen	Piano	Corvallis
Fisher, Marie	Piano	Corvallis
Fitts, E. B.	Piano	Corvallis
Frost, Dorothy	Piano	Corvallis
Fuselman, Elizabeth	Piano	Corvallis
Gilkey, Helen M.	Voice	Corvallis
Gilmore, William	Piano	Corvallis
Greene, Jay	Piano	Corvallis
Greene, Leatitia	Piano	Corvallis
Gunn, Christina	Voice	Corvallis
Hamlin, Louis	Violin	Corvallis
Hargiss, Vera	Voice	Corvallis
Hearing, Leo	Violin	Haines
Hogshire, Geo. R.	Piano	Corvallis
Howard, Edwin Clifford	Piano	Corvallis
Howard, Esther Leona	Piano	Corvallis
Humphrey, Helen Martha	Piano	Corvallis
Hunter, Everett Leo	Violin	Corvallis
Johnson, Emma Wintler	Piano	Corvallis
Johnson, Mary Katheryn	Piano	Corvallis
Kerr, Marion	Violin	Corvallis
Kiger, Martha	Piano	Corvallis
Linville, Katheryn Louise	Violin	Oaksdale, Wash.
McGinnis, Lea	Voice	Corvallis
Morris, Mrs. H. W.	Piano	Corvallis
Newport, Beatrice	Piano	Lebanon
Pape, Albert H.	Violin	Corvallis
Peil, Faix E.	Piano	Corvallis
Prindle, Vera E.	Piano	Corvallis
Reed, Marvel Echo	Violin	Corvallis
Rondeau, Ruth	Organ	Corvallis
Shepherd, Frank E.	Piano	Corvallis
Smith, Edwina	Violin	Albany
Smith, Elinor	Piano and Voice	Corvallis

Name	Course	Home Address
Smith, Emil John	Trombone	Albany
Snyder, Claudia	Saxophone	Corvallis
Tann, J. H.	Saxophone	Corvallis
Templeton, Marguerite	Harmony	Corvallis
Thompson, Elizabeth	Violin	Corvallis
Waterman, Helen Mae	Violin	Corvallis
Watkins, Mrs.	Piano	Philomath
Whittimore, Hopewell	Piano and Violin	Corvallis
Whittemore, John	Voice and Clarinet	Corvallis
Wilkes, Clair	Voice	Corvallis
Wood, Rowena	Voice	Arlington
Woodruff, Virginia	Piano	Corvallis

SUMMARIES OF ENROLLMENT

CLASSIFIED AS TO CURRICULUM

(All Duplicates Excluded)

Course	Men	Women	Total
Agriculture	534	8	542
Home Economics		428	428
Forestry and Logging Engineering	36		36
Engineering and Industrial Arts	1264		1264
Mining	56	1	57
Chemical Engineering	83	1	84
Commerce	293	232	525
Pharmacy	117	35	152
Optional	6	31	37
Music	21	40	61
Summer School	39	223	262
Short Courses	624	14	683
Totals	3073	1013	4086

CLASSIFIED AS TO RESIDENCE

States and Territories:		
Oregon		2939
Alaska	4	
Arizona	3	
California	437	
Colorado	3	
Dist. of Columbia	2	
Hawaii	1	
Idaho	77	
Illinois	14	
Indiana	3	
Iowa	3	
Kansas	4	
Maryland	1	
Massachusetts	2	
Michigan	1	
Minnesota	2	
Missouri	6	
Montana	17	
Nebraska	4	
New Mexico	1	
New York	3	
North Dakota	4	
Ohio	5	
Oklahoma	2	
Pennsylvania	3	
Philippine Islands	9	
South Dakota	1	
Tennessee	1	
Texas	4	
Utah	6	
Vermont	1	
Washington	493	
Wisconsin	1	
Wyoming	4	1123
Foreign Countries:		
Buenos Aires	1	
Canada	13	
China	3	
Finland	1	
India	3	
Japan	1	
Norway	1	
Scotland	1	24
Net Total		4086

COMPARATIVE ENROLLMENT

1888-1889	97	1903-1904	530
1889-1890	151	1904-1905	680
1890-1891	201	1905-1906	735
1891-1892	208	1906-1907	833
1892-1893	282	1907-1908	1156
1893-1894	240	1908-1909	1352
1894-1895	261	1909-1910	1591
1895-1896	397	1910-1911	1778
1896-1897	316	1911-1912	2868
1897-1898	336	1912-1913	2314
1898-1899	388	1913-1914	2435
1899-1900	405	1914-1915	4176
1900-1901	436	1915-1916*	3251
1901-1902	448	1916-1917‡	3797
1902-1903	541	1917-1918	3453
		1918-1919§	4086

The great difference in the total enrollment for the two years, 1910-11 and 1911-12, was due largely to the increase in the number of students registered for the winter short courses in Agriculture. The increase in the number of regular students in the 36-week courses was 24 percent.

The decrease in the number of students in 1912-13 from the year 1911-12 is due to the decrease in the short course registration. The increase in the number of regular students in the 36-weeks courses was 19 percent.

---

* Totals to and including March 16, 1916.
‡ Totals to and including April 25, 1917.
§ Totals to and including April 8, 1919.

INDEX

A

Accounting and Business Management 146-154
Courses in 147-154
Equipment 146
Accredited Schools 67-68
Acts of Congress, Endowment and Foundation 27
Adams Fund 45
Administration Building 33
Administration of College..... 29-31
Administrative Council..... 7
Administrative Council, Description of 29
Administration and Instruction Officers of..... 7-25
Admission to Advanced Standing 66
Admission to College 64-68
Admission—Entrance Requirements 64-65
Admission to Freshman Year. 64-65
Admission—Registration 71
Admission from Other Colleges 66-67
Admission and Expense, Summer Session 402
Admission to Graduate Study. 65-66
Admission, Special Students... 66
Admission, Units Necessary for 64-65
Admission, Vocational Curricula 64
Admission, Degree Curricula.. 64-65
Admission as an Optional Student 66
Advanced Standing 66
Agricultural Education 303-304
Agriculture, School of 74-135
Vocational Curricula.....77, 85-86
Degree Curricula.....75-77, 78-85
Departments of Instruction.87-135
For Teachers 297, 303-304
Agricultural Vocational Curricula—
Description of 77, 85-86
Agriculture Degree Curricula
Description of 75-85
Agricultural Experiment Station Staff 30
Agricultural Hall 33-34
Agricultural Club 51
Agricultural Fraternities, Gamma Sigma Delta, Alpha Zeta 52
Agronomy Building (see Agricultural Hall)
Aim of the College..... 31-32
Alpha Kappa Psi, Theta Chapter of 53
Alumnus, O. A. C., College Publication 56
Animal Husbandry 87-91
Courses in 87-91
Equipment 87
Armory 39
Art and Architecture 311-315
Art 311-314
Architecture, Rural 314-315
Equipment 311
Assaying Laboratory 267
Assembly, Student Body..... 47-48
Associations 47-54
Athletic 50-51
Miners 52
Oratorical 49
Pharmaceutical 54
Varsity O 51
Athletic Association 50-51

B

Bacteriology 316-320
Courses in 317-320
Equipment 316-317
Barn, Dairy 41
Cattle 41-42
Hog 43-44
Band, College 49, 393
Band Instruments 400
Barometer 55, 372
Beaver, (The Junior Annual) 55
Bible Classes 50
Board of Regents..... 6
Standing Committees 7
Description of 29
Board, Cost of 57-59
Board and Room 57-58
Board for Men 58
Board for Women 57-58
Bookkeeping, Courses in.....146-154
Books, Cost of 59
Botany and Plant Pathology.321-327
Courses in 322-327
Equipment 321-322
Branch Experiment Stations.. 22
Buildings and Grounds 33-44
Administration 33
Agricultural Hall 33-34
Agronomy (see Agric. Hall)
Armory 39
Barn, Dairy 41
Cattle Barn 41-42
Cauthorn Hall 40
Dairy 36
Engineering Laboratory..... 38
Farm Mechanics 42-43
Forestry 36
Foundry 38
Greenhouses 35
Hog Barn 43-44
Home Economics 36-37
Horticultural Wing (see Agricultural Hall)

Horticultural Products 40-41
Library 35
Mechanic Arts 37
Mechanical Hall 37
Men's Gymnasium 39
Mines 37
New Engineering Laboratory 38
New Heating Plant..... 39
Poultry Houses 43
Power Plant 39
Science 33
Shepard Hall 40
Stock Judging Pavilion 42
Veterinary 42
"Y" Hut 40
Waldo Hall 40
Women's Gymnasium..... 38-39
Business Law and Government 165-168
Business Administration 146-154
Equipment 146-147
Courses, Description of.....147-154
Bulletins, Extension 47, 411, 413
Station 47
Summer School 47

C

Cadet Regiment Officers.379, 427-428
Calendar 2
Calendar, College 3
California Club 54
Catalogue, College 47
Catalogue of Students.....436-508
Cattle Barn 41-42
Cauthorn Hall 40
Ceramics, Degree Curriculum in 266, 270-271
Description of Courses.....281-283
Equipment 281
Cement Testing Laboratory.. 206
Chemical Engineering, Degree Curriculum in 368-370
Description of Courses.....370-371
Equipment 369
Chemistry 328-337
Description of Courses.....329-337
Equipment 328-329
Christian Associations 50
Buildings 40
Civil, Highway, Irrigation, and Structural Engineering.....
.....177-180, 197-203
Equipment 188, 196, 199
Civil Engineering 187-195
Courses in 188-195
Civil Engineering Club 52
Civil Service 171
Clara H. Waldo Prize Fund.. 63
Clara H. Waldo Prizes Awarded 426
Clubs 47-54
Agricultural 51
California 54
Civil Engineers 52
Commercial 54
Cosmopolitan 51
Easterners' 54
Eastern Oregon 54
Electrical Engineers 52
Forest 52
Home Economics 53
Lewelling 51
Mask and Dagger 49
Mechanical Engineers 51
Miners' Association 52
Portland 54
Washington Club 54
Withycombe 51-52
College Calendar 3
College Catalogue 47
College Council 8
Description of 29-30
College Extension .....
.....29, 30, 46, 47, 410-420
College Faculty 7-26, 429-435
College Farm Buildings 41-44
College Government 29-31
College Grounds 33
College, Location of.....32-33
College, Object of..... 31-32
College Organizations..... 47-54
College Publications.....47, 55-56
Colleges, Admission from other colleges 66-67
Commerce, School of.....136-174
Descriptions of Courses.....
.....147-154, 157-164, 165-168, 169-174
Degree Curriculum in...136, 138-144
Electives 142-144
Vocational Curriculum 137, 145
Commercial Club 54
Commercial Education..144, 296, 305
Description of courses in.... 305
Commercial Fraternity 53
Commercial Print 56
Committees, Board of Regents 7
Congressional Acts 27
Control, Board of 48
Cosmopolitan Club 51
Cost of a Year in College..... 58-59
County Branch Experiment Stations 22
Councils—
Administrative 8
Description of 29
College 8-27
Description of 29-30
Courses (see Curricula)
Courses of Study—
Agriculture, School of 75
Agriculture, Degree Curricula 75-76, 78-85
Agriculture, for Teachers...
..... 297, 303, 303
Agriculture, Vocational Curriculum 77, 85-86
Animal Husbandry, Courses in 87-91

Bacteriology 316-320
Botany and Plant Pathology 321-327
Ceramics, Degree Curriculum in 266, 270-271
Chemical Engineering, Degree Curriculum in.....368-370
Civil Engineering, Degree Curriculum in 176, 177-180
Commerce, School of.....136-174
Degree Curriculum 136-174
Vocational Curriculum...137, 145
Suggested Electives.....142-144
Dairy Husbandry, Courses.. 92-96
Dairy Manufactures, Vocational Curriculum in.....86, 95
Dairying, Vocational Curriculum 77, 86, 95
Drainage and Irrigation..... .....126, 127-129, 131, 132, 199-203
Engineering, School of.....175-232
Engineering, Curriculum in Electrical 176, 180-182
Engineering, Curriculum in Civil 176, 177-180
Engineering, Courses in Experimental 207-212
Engineering, Curriculum in Chemical 368-370
Engineering, Courses in Highway 176, 179, 196-198
Engineering, Courses in Irrigation 176, 179, 199-203
Engineering, Courses in Logging 237, 244-245
Engineering, Courses in Mechanical 226-232
Engineering, Curriculum in Mining 268-270
Courses in 277-278
Entomology, Courses in....346-349
Farm Management, Courses in 102-106
Farm Crops, Courses in 97-101
Floriculture, Courses in..... 119
Forestry, School of 233-245
Forestry, Degree Curriculum in General 234-236
Highway Engineering, Courses in 176, 179, 196-198
Home Economics, School of 246-265
Home Economics, Degree Curricula in 248, 249-250, 253
Homemaker's Curriculum... .....248-249, 255
Horticulture, Curriculum..249, 255
Industrial Arts, Degree Curriculum in 176, 182-183
Industrial Arts, Courses in.215-225
Irrigation Engineering.....
Irrigation Farming, Courses in 127-128
Landscape Gardening, Courses in 117-119
Logging Engineering, Courses in 244-245
Degree Curriculum in..... 237
Mechanic Arts, One-year Curriculum 176, 186, 220-225
Mechanical Engineering, Degree Curriculum in....176, 184-185
Mines, School of 266-283
Mining Engineering, Degree Curriculum in 266, 268-269
Olericulture, Courses in.....115-117
Pharmacy, Courses in.....284-296
Pharmacy, Degree Curricula in 284, 287-291
Pomology, Courses in ...•...112-115
Poultry Husbandry, Courses in 123-125
Soils, Courses in.....126-132
Curricula, Degree..... 64-65, 69, 75-76, 78-85, 136, 138-141, 176, 177-185, 234-237, 248, 249-250, 253, 266, 268-271, 284, 287-291, 368-370.
Vocational ..... 64, 69, 77, 85-86, 137, 145, 176, 186, 248-249, 254-255, 284, 287, 288-289.
Curricula, Entrance Requirements, to Degree 64-65
Entrance Requirements to Graduate 65
Entrance Requirements to Vocational 64

D

Dairy Barn 41
Dairy Building 36
Dairy Husbandry 92-96
Dairy Manufactures....77, 86, 95-96
Description of Courses..... 92-96
Equipment 92
Vocational Curriculum..... .....77, 86, 95-96
Debate and Oratory, Local....48, 49
Debate and Oratory, Intercollegiate 48, 49
Degree Curricula—
Admission to 64-65
Entrance Requirements.....64-65
See also Curricula.
Degree Curricula .....
Agriculture, School of.....74-135
Animal Husbandry 87-91
Dairy Husbandry 92-96
Farm Crops 97-101
Farm Management 102-106
Farm Mechanics 107-110
Horticulture 111-122
Poultry Husbandry.....123-125
Soils 126-132
Veterinary Medicine 133-135
Commerce, School of.....136-174

Business Administration..146-154
Economics and Sociology.155-164
Political Science 165-168
Office Training and Stenography 169-174
Engineering, School of 175-232
Civil Engineering 187-195
Electrical 204-206
Highway 196-198
Industrial Arts 213-225
Irrigation 199-203
Mechanical 226-232
Forestry, School of.....233-245
General Forestry 238-243
Logging Engineering.....244-245
Home Economics, School of.246-265
Household Administration 256-257
Household Art 258-261
Household Science.....262-265
Mines, School of 266-283
Ceramic Engineering.....281-283
Geology 272-276
Mining Engineering.....277-278
Metallurgy 279-280
Pharmacy, School of.....286-296
Pharmacy, Two-year Curriculum 284, 287, 288-289
Three-year Curricumum, ...284, 287, 289
Four-year Curriculum.... ..... 284, 287-288, 290-291

Degrees—
Conferred 69, 421-424
Higher 69

Departments of Instruction—
Agricultural Education.....303-304
Animal Husbandry 87-91
Architecture 314-315
Architecture, Landscape....117-119
Art and Architecture.....311-315
Art 311-314
Bacteriology 316-320
Band Instruments 400
Botany and Plant Pathology 321-327
Business Administration....146-154
Ceramic Engineering 281-283
Civil and Structural Engineering 186-195
Chemistry 328-337
Chemical Engineering 368-371
Commercial Education..... 305
Dairy Husbandry 92-96
Domestic Art (Household Art) 258-261
Domestic Science (Household Science) 262-265
Drainage and Irrigation.....127-129
Drill, Military.....376-381
Economics and Sociology...155-164
Education 299-300
Education, Agri. 303-304
Education, Commercial 305
Education, Home Economics 306
Education, Industrial 307-308
Electrical Engineering.....204-206
Engineering, Ceramic 281-283
Engineering, Chemical.....368-371
Engineering, Highway.....196-198
Engineering, Electrical.....204-206
Engineering, Experimental.207-212
Engineering, Industrial Arts 213-225
Engineering, Irrigation 199-203
Engineering, Logging 244-245
Engineering, Mechanical....226-232
Engineering, Mining 277-278
Entomology 346-349
English Language and Literature 338-345
Farm Crops 97-101
Farm Management 102-106
Farm Mechanics 107-110
Floriculture 119
Forestry, General 238-243
French 357-358
Gardening, Landscape.....117-119
Geology 272-276
German 359
Government and Business Law (Pol. Science) 163-168
History 350-351
Home Econ. Education.....306
Horticulture 111-122
Horticultural Products 120
Household Administration..256-257
Household Art 258-261
Household Science 262-265
Industrial Arts 213-225
Industrial Education 307-308
Industrial Journalism 372-373
Irrigation Engineering.....199-203
Journalism 372-373
Landscape Gardening 117-119
Languages, Modern 357-359
Library 374-375
Mathematics 352-356
Mechanical Engineering.....226-232
Metallurgy 279-280
Mining Engineering 277-278
Military Science and Tactics 376-381
Modern Languages 357-359
Music 391-400
Office Training 169-174
Pathology, Plant 321-327
Pharmacy 291-296
Physics 360-362
Physical Education for Men 382-386
Physical Education for Women 387-390
Plant Pathology 321-327
Political Science 163-168
Piano 396-398
Pomology 112-115
Poultry Husbandry 123-125

Psychology 301-302
Public Speaking 341-342
Research .....
28-29, 30, 70, 91, 95, 101, 105, 120-121, 125, 131, 212, 264, 283, 300, 319-320, 327, 349, 367, 404-409.
Rhetoric and Literature.....338-345
Soils 126-132
Spanish 358-359
Stenography and Office Training 169-174
Theory of Music 398-399
Vegetable Gardening 115-117
Veterinary Medicine 133-135
Violin 399-400
Voice 395-396
Zoology and Physiology....363-367
Dietitians' Curriculum ...248-249, 254
Dismissal of Students 31
Domestic Art (Household Art) 258-261
Domestic Science (Household Science 262-265
Dormitories for Women..... 57
Reserving Room in 57
Opening Date 58
Drainage and Irrigation.....127-129
Dramatic Club, Mask and Dagger 49
Drill Hall 39
Drill, Military.....69, 72, 376-381

E

Easterners' Club 54
Eastern Oregon Club 54
Economics and Sociology, Description of Courses.....157-164
Equipment 156
Education 299-300
Description of Courses.....299-300
Education, Agricultural.....303-304
Education, Commercial 305
Education, Home Economics.. 306
Education, Industrial 307-308
Electrical Engineers 52
Electrical Engineering.....204-206
Degree Curriculum in..176- 180-182
Equipment 204
Description of Courses.....204-206
Employment 59-61
Y. M. C. A. Assistance..... 60
Employment, for Women..... 60-61
Endowment and Foundation. 27, 44-46
English, Entrance Requirements in 65
English Language and Literature 338-345
Engines, Gas.....211, 225, 229
Steam 211, 229, 230
Engineering Equipment (see Equipment)
Engineering Courses (see Curricula)
Engineering Courses, Description of (see Engineering, under Departments of Instruction.)
Engineering, School of.....175-232
Engineering Fraternity..... 53
Engineering Magazine..... 55
Engineers' Club, Civil..... 52
Electrical 52
Mechanical 53
Enrollment Summaries.....509-510
Comparative 510
Entrance Requirements 64-68
Degree Curricula 64-65
English 65
Mathematics 65
Vocational Curricula 64
Entomology 346-349
Description of Courses.....347-349
Equipment 346
Equipment—
Animal Husbandry 87
Art and Architecture 311
Bacteriology 316-317
Botany and Plant Pathology 321-322
Business Administration....146-147
Ceramic Engineering 281
Chemistry 328-329
Chemical Engineering 369
Civil Engineering 188
Dairy Husbandry 92
Economics and Sociology.... 156
Education, Vocational 298
Electrical Engineering 204
English 338
Entomology 346
Experimental Engineering..207-208
Experiment Station 404
Farm Crops 97
Farm Management 102
Farm Mechanics 107
Forestry 234
Gymnasium, Men's 384
Women's 388
Highway Engineering 196
Horticulture 111-112
Household Administration... 256
Household Art 258
Household Science 262
Industrial Arts 213-215
Irrigation Engineering 199
Library 374-375
Mechanical Engineering ... 223
Mines 267
Office Training 169
Pharmacy 286-287
Military Science and Tactics 379-380
Music 393, 394
Pharmacy 286-287

Physics 360
Physical Education, Men... 384
Women 388
Poultry Husbandry 123
Stenography and Office Training 169
Soils 126-127
Veterinary Medicine 133
Vocational Education 298
Zoology and Physiology..... 363
Expenses—
Amount Necessary to Start 59
Cost of a Year in College.. 58-59
Dormitory 57-58
Expense and Admission, Summer Session 402
General Fees 56
Laboratory Fees 56
Personal 58
Student 56-61
Experiment Station .....
.....28-29, 30, 34, 42, 45, 47, 404-409
Branches 405-409
Description of 28-29
Investigation 404
Staff 30, 74-75, 309-310
Experimental Engineering....207-212
Courses in 208-212
Equipment 207-208
Expulsion of Students..... 31
Extension Service 410-420
Bulletins 47
Staff 30, 410

F

Faculty—
Description of 30
Members 6-25
In Agriculture 74-75
In Commerce 136
In Engineering 175
In Forestry 233
In Home Economics 246
In Mines 266
In Pharmacy 284
In Vocational Education..... 297
In Service Departments ...308-309
In Extension 410
In Agricultural Research (see Experiment Station).
Farm Buildings 41
Farm Mechanics Building.....42-43
Farm, College 33
Farm Crops 97-101
Description of Courses 97-101
Equipment 97
Farm Management 102-106
Description of Courses 102-106
Equipment 102
Farm Mechanics 107-110
Description of Courses 107-110
Equipment 107
Fawcett Cup 63
Fees—
General 56
Music 394-395
Graduate Students 71
Fees and Deposits, Laboratory 56
Floriculture, Courses in..... 119
Foreign Students' Club—Cosmopolitan Club 51
Foreign Countries, Enrollment from 28, 510
Forestry Building 36
Forestry, School of.....233-245
Degree Curricula in.....234-237
Descriptions of Courses.....
.....238-243, 244-245
Equipment 234
Forest Club 52
Forum 51
Foundation and Endowment of College 27, 44-46
Foundry 38
Fraternities, Chapters of National—
Alpha Zeta 52
Alpha Kappa Psi 53
Gamma Sigma Delta 52
Omicron Nu 53
Sigma Tau 53
French 357-358
Freshman Year, Entrance Requirements 64-65
Fund—
Adams 45
Department of Agriculture.. 46
Hatch 45
Johnson Prize 63
J. T. Apperson Agricultural College Educational 62
Land-Grant 44
L. J. Simpson Scholarship Loan 62
Morrill 44
Smith-Lever 46
State 44, 45, 46
Student Loan 61-62
Waldo Prize 63
War Emergency 46

G

Gamma Sigma Delta Fraternity 52
Gatch Cup, The 48
Gas Engines 211, 225, 229
General Fees 56
General Information 27-73
Music 391-395
Geology, Description of Courses 272-276
Equipment 267
Geological Museum 267
German 357, 359
Governing Bodies of the College 29-31

Government and Business Law (see Political Science).
Government of College..... 29-31
Government Support 44-46
Government of Students.30-31, 47-48
Graduate Students—
Admission as 65, 66-67
Fees 71
Names and Addresses..... 436
Graduate Study 65, 69-71
Admission to 65
Graduation 69-71, 73
Greenhouses 35
Grounds and Buildings 33-44
Gymnasium, Men's 39, 384
Equipment 384
Gymnasium, Women's 38-39
Equipment 388

H

Hatch Fund 45
Heating Plant 39
Health Service 61
Highway Engineering 196-198
Degree Curriculum in...176, 177-179
Description of Courses.....196-198
Equipment 196
Higher Degrees 69-71
History, Department of.....350-351
College 27-28
Home Economics Education.297, 306
Hog Barn 43
Home Economics, School of..246-265
Building 36-37
Club 53
Degree Curricula in.....248, 249-254
Description of Courses—
Household Administration.256-257
Household Art 258-261
Household Science 262-265
Vocational Curricula in.....
.....248-249, 254, 255
Honor Fraternities—
Alpha Kappa Psi 53
Alpha Zeta 52
Gamma Sigma Delta 52
Sigma Tau 53
Omicron Nu 53
Honor Societies—
Forum 51
Sphinx 51
Horticulture—
Buildings 34, 40-41
Club, Lewelling 51
Courses in 111-112
Equipment 111-112
Floriculture 119
Horticultural Products 120
Landscape Gardening 117-119
Horticultural Products Building 40-41
Horticultural Products Courses 120
Olericulture 115-117
Pomology 112-115
Research 120-121
Vegetable Gardening 115-117
Vocational Courses 121-122
Vocational Curriculum.....77, 86
Household Administration....256-257
Household Art 258-261
Household Science 262-265

I

Income, Sources of..... 44-46
Industrial Arts—
Degree Curriculum in..176, 182-183
Description of Courses.....213-225
Equipment 213-215
Industrial Education.297, 298, 307-308
Description of Courses.....307-308
Investigations, Experiment Station 404-409
Irrigation Engineering 199-203
Degree Curriculum in..176, 177-179
Description of Courses.....199-203
Equipment 199
Irrigation and Drainage 127-132

J

Johnson, A. J., Prize Fund.... 63
Junior Publication, Beaver.... 55
Junior and Senior Honor Society, Forum 51

L

Laboratory Fees and Deposits 56
Land-Grant Fund 27, 44
Landscape Gardening 117-119
Languages, Modern 357-359
Lewelling Club 51
Library 374-375
Library Building 35
List of Accredited Schools.... 67-68
Literary Societies 48
Loan Funds 61-63
Student 61-62
L. J. Simpson Scholarship.. 62
J. T. Apperson Agricultural College Educational 62-63 61-62
Local Debate and Oratory ... 49
Location of College..... 32-33

M

Machine Shop Equipment..... 214
Magazines—
C. P. Jonrnal 56
Engineer, Student 55
Oregon Countryman 55
O. A. C. Alumnus 56
Marketing and Rural Leadership 156
Mask and Dagger Dramatic Club 49

Mathematics 352-356
Entrance Requirements in.. 65
Mechanical Engineering 226-232
Club 53
Degree Curriculum in..176, 184-185
Description of Courses.....226-232
Equipment 226
Mechanic Arts, One-year Vocational Curriculum in.....
.....176, 186, 220-225
Mechanic Arts Building..... 37
Mechanical Hall 37
Men's Boarding Places 58
Men's Gymnasium Building... 39
Men's Gymnasium Equipment 384
Mines, School of.....266-283
Building 37
Mining Engineering—
Degree Curriculum in..266, 268-269
Description of Courses.....277-278
Equipment 267
Miner's Association 52-53
Mineralogical Laboratory 267
Military Science and Tactics..
.....69, 72, 376-381
Modern Languages 357-359
Morrill Fund 44
Museums—
Entomology 346
Forestry 234
Geological 267
Zoology and Physiology..... 363
Music, School of.....391-400
Courses in 395-400
General Information 391-395
Practice in 394

N

National Fraternities, Chapters of,
Alpha Kappa Psi 53
Alpha Zeta 52
Gamma Sigma Delta 52
Omicron Nu 53
Sigma Tau 53

O

Object of the College..... 31-32
Officers—
Administration and Instruction 6-25
Cadet Regiment 427-428
Office Training and Stenography 169-174
Official Publications 47
Olericulture, Courses in.....115-117
One-year Curriculum, Agriculture 77, 85
Dairy Manufactures 77, 86
Dietitian's 248-249, 254
Farm Mechanics 77, 86
Horticulture 77, 86
Homemakers 249, 255
Mechanic Arts 176, 186
Optional Students 66
Oratorical Association 49
Oratory and Debate—
Intercollegiate 49
Local 49
Oregon Countryman 55
Ore-testing Laboratory 267
Organizations, College 47-54
Other Colleges, Admission from 66-67

P

Pathology, Botany and Plant
....321-327
Description of Courses.....322-327
Equipment 321-322
Pavilion for Stock Judging... 42
Personal Expenses 58
Pharmacy, School of.....284-296
Degree Curricula in.....
..... 284, 287-288, 288-291
Description of Courses.....291-296
Equipment 286-287
Pharmaceutical Association .. 54
Physiology 362-367
Physical Education, for Men.382-386
For Women 387-390
Physics 360-362
Equipment 360
Physiology and Zoology.....362-367
Plant, Heating 39
Power 39
Plant Pathology and Botany.321-327
Equipment.. 321-322
Political Science 165-168
Pomology, Courses in.....112-115
Portland Club 54
Poultry Husbandry, Courses in 123-125
Equipment 123
Poultry Houses 43
Power Plant 39
Products, Horticultural..... 40-41
Private Board for Men Students 58
Prizes—
Clara H. Waldo 63
Debate and Oratory, Local..48, 49
A. J. Johnson 63
Prize Funds 48, 63
Public Speaking, Description of Courses 341-342
Publications, College 47
Catalogue 47
Extension Bulletins 47
Station Bulletins 47
Summer School Bulletins..... 47
Winter School Bulletins 47
Publications, Student 55-56
Alumnus, O. A. C. 56
Barometer 55
Beaver 55
Commercial Print 56

Oregon Countryman 55
Student Engineer 55
Purpose and Scope of the College 31-32

R

Railroad Rates 401
Regents, Board of 5
Registration 71
Registration Days 71
Requirements for Entrance... 64-67
In English 65
In Mathematics 65
Requirements for Graduation 69-71
In the School of Agriculture 76-77
In the School of Commerce. 137
In the School of Engineering 176
In the School of Forestry.... 234
In the School of Home Economics 248
In the School of Mines.....266-267
In the School of Pharmacy.287-288
In Chemical Engineering...368-370
In School of Music.....396, 398, 400
Requirements for Higher Degrees 69-71, 156, 175-176
Research .....
28-29, 30, 47, 70, 95, 105, 120-121, 131, 264, 319-320, 327, 349, 367, 404-409.
Bacteriology 319-320
Botany 327
Cookery 264
Dairying 95
Entomology 349
Farm Management 105
Physiology 367
Plant Pathology 327
Zoology 367
Horticulture 120-121
Soils 131
Rhetoric and Literature.....338-345
Room and Board 57-58
Roster of Cadet Officers, Military Department 427-428
Rules and Regulations, Enforcement of 31
Students' Handbook of..... 71-72

S

School of Agriculture 74-135
School of Commerce 136-174
School of Engineering and Mechanic Arts 175-232
School of Forestry 233-245
School of Home Economics...246-265
School of Mines 266-283
School of Music 391-400
School of Pharmacy.....284-296
School of Vocational Education 297-308
Schools, Accredited 67-68
Science Hall 33
Scope and Purpose of the College 31-32
Self-Government, Student..... 47-48
Self-Support 59-61
Shepard Hall 40
Short Course Bulletins 47
Sigma Tau 53
Sociology and Economics.....155-164
Societies 47-54
Honor, Sphinx 51
Honor, Forum 51
Literary 48
Soils 126-132
Courses in 127-132
Drainage and Irrigation 127-132
Equipment 126-127
Spanish 358-359
Special Bulletins of the Summer School 403
Special Students 66
Sphinx Honor Society 51
Staff, Experiment Station (defined) 30
Extension Service (defined).. 30
Standing, Advanced 66-67
States Represented, Enrollment 28
Station Bulletins 47
Station, Experiment 404-409
Staff 30, 74-75, 309-310
Steam Engines 211, 229, 230
Stenography and Office Training 169-174
Equipment 169
Stock Judging Pavilion 42
Student Body Assembly..... 47-48
Student Engineer 55
Students, Regular 64
Graduate 66
Optional 66
Special 66
Students, Classified as to Curricula 509
Classified as to Residence... 509
Dismissal of 31
Expenses 56-59
Government of 47-48
Graduate Study 65, 69-71
Honor 425-426
Loan Fund 61-62
Names and Addresses 437-508
Optional 66
Organizations 47-54
Publications 55-56
Self-Government 47-48
Special 66
Special Music 392
Summer Session 401-403
Admission and Expenses..... 402
Bulletins of the 47, 403
Social and Other Features..402-403
Summaries, Enrollment 509-510
Support, National Government 27, 44-46
Surveying, Equipment 188

T

Testing Cement, Equipment for 207-208
Testing Highway Materials, Equipment for 207-208
Thesis 70
Theta Chapter of Alpha Kappa Psi Fraternity 53
Two-year Vocational Commerce Curriculum 137, 145

U

Undergraduate Students 436-508
Uniform, Gymnasium 58, 59, 387
Military 58, 377
Units for Admission 64-65

V

Varsity O Association 51
Vegetable Gardening 115-117
Veterinary Medicine 133-135
Equipment 133
Veterinary Building 42
Vocational Curricula .....
.....64, 69, 77, 137, 176, 248, 249, 287
Admission to 64
Vocational Curriculum—
Agriculture 77, 85
Commerce 137
Dairying 77, 86
Dietitian's 248-249, 254
Farm Mechanics 77, 86
Homemaker's 249, 255
Horticulture 77, 86
Mechanic Arts 176, 186
Vocational Education 297-308
Agricultural Education.....303-304
Commercial Education 305
Education 299-300
Home Economics Education 306
Industrial Education 307-308
Psychology 301-302

W

Waldo Hall 40
Waldo, Clara H., Prize Fund.63, 426
Washington Club 54
Winter School, Bulletins of the 47
Winter Short Courses..... 47
Withycombe Club 51-52
Women's Dormitories.....40, 57-58
Women's Gymnasium 38-39. 388
Equipment 388
Wood Shop, Equipment 213
Working Way Through College, Self-Support 59-61

Y

Y. M. C. A. 50
Building ("Y" Hut) 40
Y. W. C. A. 50
Building (Shepard Hall) 40

Z

Zoology and Physiology.....363-367
Courses in 363-367
Equipment 363