

# AGRONOMY OPTION

This option is offered within the following major(s):

- Crop and Soil Science - College of Agricultural Sciences (<http://catalog.oregonstate.edu/college-departments/agricultural-sciences/crop-soil-science/crop-soil-science-bs-hbs/>)

Also available at LaGrande and via Ecampus.

Students in the Agronomy option will gain the knowledge and skills necessary to be active participants in producing food, feed, fiber, and energy crops for our world. Increased production of field crops—wheat, corn, rice, sorghum, soybeans, forages, cotton, etc.—will be essential to meet the basic needs of the world's ever-growing population and such production will need to be accomplished in a world of diminishing soil, water, mineral, and petrochemical resources. As an agronomic professional, you will have the knowledge and skill to access the potentials of a given production system and to choose plant materials and plant production practices that will optimize production while minimizing environmental impact. Maximum sustainable production will be your goal and you will need in-depth knowledge of plants, plant genetics, plant pests, soils, soil fertility, production equipment, economics, and politics to achieve this goal. Agronomists work for field crop production companies, as managers of small to large farms and ranches, and as managers of their own farming operations. Agronomists also work for federal, state, or local government agencies as educators, researchers, or field technicians. Others hold teaching, research, or extension positions in universities. Some work for private research laboratories, environmental service companies, insurance companies, or land appraisal firms.

Option Code: 784

Code	Title	Credits
<b>Agricultural Science</b>		
CROP 200	CROP ECOLOGY AND MORPHOLOGY	3
SOIL 205 & SOIL 206 or CSS 205	SOIL SCIENCE and *SOIL SCIENCE LABORATORY FOR SOIL 205 *SOIL SCIENCE	4
SOIL 316	NUTRIENT CYCLING IN AGROECOSYSTEMS	4
<b>Additional Math</b>		
Select one course from the following:		4
MTH 112	*ELEMENTARY FUNCTIONS	
MTH 241	*CALCULUS FOR MANAGEMENT AND SOCIAL SCIENCE	
MTH 245	*MATHEMATICS FOR MANAGEMENT, LIFE, AND SOCIAL SCIENCES	
ST 351	INTRODUCTION TO STATISTICAL METHODS	
<b>Agronomy Core</b>		
BOT 350	INTRODUCTORY PLANT PATHOLOGY	4
CROP 280	INTRODUCTION TO THE COMPLEXITY OF OREGON CROPPING SYSTEMS	4
CROP 300	CROP PRODUCTION IN PACIFIC NORTHWEST AGROECOSYSTEMS	4
CROP 440	WEED MANAGEMENT	4
ENT 311	INTRODUCTION TO INSECT PEST MANAGEMENT	4
<b>Capstone</b>		
CROP 480/HORT 480	CASE STUDIES IN CROPPING SYSTEMS MANAGEMENT	4
<b>Agronomy Electives</b>		
Select at least 7-8 credits from the following courses:		7-8
CROP 310	FORAGE PRODUCTION	
CROP 330	*WORLD FOOD CROPS	
CROP 420	SEED SCIENCE AND TECHNOLOGY (Ecampus only)	

CROP 460	SEED PRODUCTION	
HORT 316	PLANT NUTRITION	
PBG 430	PLANT GENETICS	
PBG 431	PLANT GENETICS RECITATION	
<b>Business and Economics</b> <sup>1</sup>		
Select one course from the following:		3-4
AEC 250	*INTRODUCTION TO ENVIRONMENTAL ECONOMICS AND POLICY	
AEC 251	*INTRODUCTION TO AGRICULTURAL AND FOOD ECONOMICS	
ECON 201	*INTRODUCTION TO MICROECONOMICS	
Select one course from the following:		3-4
AEC 211	AGRICULTURAL AND FOOD MANAGEMENT	
AEC 221	AGRICULTURAL AND FOOD MARKETING	
AEC 388	AGRICULTURAL LAW	
BA 365	FAMILY BUSINESS MANAGEMENT	
<b>General Electives</b> <sup>1</sup>		
Select at least 7-8 credits from the following courses:		7-8
AEC 211	AGRICULTURAL AND FOOD MANAGEMENT	
AEC 221	AGRICULTURAL AND FOOD MARKETING	
AEC 250	*INTRODUCTION TO ENVIRONMENTAL ECONOMICS AND POLICY	
AEC 251	*INTRODUCTION TO AGRICULTURAL AND FOOD ECONOMICS	
AEC 372	AGRICULTURAL COOPERATIVES	
AEC 388	AGRICULTURAL LAW	
AEC 442	AGRICULTURAL BUSINESS MANAGEMENT	
AEC 444	COMMODITY FUTURES AND OPTIONS MARKETS	
AG 391	FARM IMPLEMENTS	
AGRI 420	INTRO TO ORGANIC PRODUCTION	
ATS 201	*CLIMATE SCIENCE	
ATS 341	*SNOW, SMOKE, AND STORMS: CLIMATE CHANGE IMPACTS IN THE PNW	
BA 365	FAMILY BUSINESS MANAGEMENT	
BA 463	FAMILY ENTERPRISE GOVERNANCE	
BB 350	ELEMENTARY BIOCHEMISTRY	
BEE 439	IRRIGATION PRINCIPLES AND PRACTICES	
BI 370	ECOLOGY	
BOT 313	PLANT STRUCTURE	
BOT 331	PLANT PHYSIOLOGY	
BOT 341	PLANT ECOLOGY	
BOT 414	AGROSTOLOGY	
BOT 442	PLANT POPULATION ECOLOGY	
BOT 480	PHOTOSYNTHESIS AND PHOTOBIOLOGY	
BOT 488	ENVIRONMENTAL PHYSIOLOGY OF PLANTS	
CH 331	ORGANIC CHEMISTRY	
CH 332	ORGANIC CHEMISTRY	
CH 337	ORGANIC CHEMISTRY LABORATORY	
CROP 310	FORAGE PRODUCTION	
CROP 330	*WORLD FOOD CROPS	
CROP 355	ORGANIC CERTIFICATION	
CROP 414	PRECISION AGRICULTURE	
CROP 420	SEED SCIENCE AND TECHNOLOGY	
CROP 460	SEED PRODUCTION	
CROP 463/HORT 463	SEED BIOLOGY	
CSS 320	PRINCIPLES OF OIL AND FIBER CROP PRODUCTION (EOU only)	
CSS 321	PRINCIPLES OF CEREAL CROP PRODUCTION (EOU only)	
CSS 322	PRINCIPLES OF POTATO PRODUCTION (EOU only)	
ECON 201	*INTRODUCTION TO MICROECONOMICS	
ENT 444	INSECT AGROECOLOGY	

## 2 Agronomy Option

FES 365	*ISSUES IN NATURAL RESOURCES CONSERVATION (Cascades & Ecampus only)
FES 435/TOX 435	*GENES AND CHEMICALS IN AGRICULTURE: VALUE AND RISK
FES 477	*AGROFORESTRY
GEOG 201	*FOUNDATIONS OF GEOSPATIAL SCIENCE AND GIS
GEOG 300	*SUSTAINABILITY FOR THE COMMON GOOD
GEOG 340	*INTRODUCTION TO WATER SCIENCE AND POLICY
GEOG 360	GISCIENCE I: GEOGRAPHIC INFORMATION SYSTEMS AND THEORY
GEOG 361	GISCIENCE II: ANALYSIS AND APPLICATIONS
HORT 212	INTRODUCTION TO ORGANIC AGRICULTURAL SYSTEMS
HORT 260	ORGANIC FARMING AND GARDENING
HORT 301	GROWTH AND DEVELOPMENT OF HORTICULTURAL CROPS
HORT 316	PLANT NUTRITION
HORT 318	*APPLIED ECOLOGY OF MANAGED ECOSYSTEMS
HORT 433/CROP 433	SYSTEMATICS AND ADAPTATION OF VEGETABLE CROPS
MTH 251	*DIFFERENTIAL CALCULUS
MTH 252	INTEGRAL CALCULUS
MB 230	*INTRODUCTORY MICROBIOLOGY
PBG 430	PLANT GENETICS
PBG 431	PLANT GENETICS RECITATION
PBG 441	PLANT TISSUE CULTURE
PBG 450	PLANT BREEDING
PH 201	*GENERAL PHYSICS
RNG 341	RANGELAND ECOLOGY AND MANAGEMENT
SOIL 360	SOIL MANAGEMENT FOR ORGANIC PRODUCTION
SOIL 366	ECOSYSTEMS OF WILDLAND SOILS
SOIL 388	SOIL SYSTEMS AND PLANT GROWTH
SOIL 395	*WORLD SOIL RESOURCES (Ecampus only)
SOIL 435	ENVIRONMENTAL SOIL PHYSICS
SOIL 445	ENVIRONMENTAL SOIL CHEMISTRY
SOIL 455	BIOLOGY OF SOIL ECOSYSTEMS
SOIL 466	SOIL MORPHOLOGY AND CLASSIFICATION
ST 351	INTRODUCTION TO STATISTICAL METHODS
ST 411	METHODS OF DATA ANALYSIS
WR 327	*TECHNICAL WRITING

### Experiential Learning Track (optional) <sup>1</sup>

CROP 410	INTERNSHIP
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### Research Track (optional)

Select courses most relevant to your intended graduate school program from the following:

BB 350	ELEMENTARY BIOCHEMISTRY
BI 221 & BI 222 & BI 223	*PRINCIPLES OF BIOLOGY: CELLS and *PRINCIPLES OF BIOLOGY: ORGANISMS and *PRINCIPLES OF BIOLOGY: POPULATIONS
BOT 321	PLANT SYSTEMATICS
BOT 341	PLANT ECOLOGY
BOT 414	AGROSTOLOGY
CH 331	ORGANIC CHEMISTRY
CH 332	ORGANIC CHEMISTRY
CH 337	ORGANIC CHEMISTRY LABORATORY
MB 230	*INTRODUCTORY MICROBIOLOGY
MTH 251	*DIFFERENTIAL CALCULUS
MTH 252	INTEGRAL CALCULUS
PH 201	*GENERAL PHYSICS
ST 351	INTRODUCTION TO STATISTICAL METHODS
WR 327	*TECHNICAL WRITING

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Baccalaureate Core Course (BCC)

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Writing Intensive Course (WIC)

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10 or more credits of a structured internship (CROP 410) can be substituted for 6 of the 7–8 General Electives credits and four credits of Business and Economics. This allows a student to use an entire term for internship work

## Grade Requirements

Students pursuing the Agronomy option under the Crop and Soil Science major are required to receive a grade of C or better in all CROP, CSS, ENT, HORT, PBG, and SOIL courses required within their major and option.

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