

# Agroecology, Horticulture, and Environmental Quality

## SOIL AND LAND RESOURCES OPTION

Dig into the ecosystem underneath your feet.

### THIS MAJOR IS A GOOD FIT IF YOU CAN SEE YOURSELF:

CONSERVING SOIL and improving soil and water quality

EXPLORING HOW SOILS FORM over millions of years and how they function today

INTEGRATING INFORMATION from soil chemistry, physics, microbiology, biochemistry, and other sciences to meet environmental challenges

Just as soil is the foundation of our roads, cities, and farms, the study of soil and land resources is foundational for careers in agriculture, land use, and environmental fields. You will study native soil systems and soils under the influence of agriculture, logging, mining, and urban development, including polluted and depleted soils.

At the University of Idaho, soil scientists study heavy metal contamination of soil, the impacts of fertilizers and pesticides on soil and water quality, the use of bacteria and fungi to fight soilborne plant diseases, nutrient and organic matter cycling in soil, and much more.

### INSIDE THE CLASSROOM

First learn the basics: chemistry, biology, geology, physics, and math. Move on to the biology, chemistry, and physics of soil. In hands-on laboratories you will determine moisture retention, aeration, and sedimentation rates in different types of soil. You'll learn to identify and classify soils. You'll take field trips to collect soil samples for analysis—from windblown silts in the south of the state to glacial sands in the north. More hands-on opportunities are available at our plant science farms and computer-controlled greenhouses.

### OUTSIDE THE CLASSROOM

**INTERN.** Get practical experiences like these: NATURAL RESOURCES CONSERVATION SERVICE Monitor soil erosion in the Flathead region of Montana . . . U.S. FOREST SERVICE Collect soil data in national forests . . . WESTERN FARM SERVICE Inspect farm fields and evaluate their water use.

**STUDY ABROAD.** Deepen your understanding of your major—and the world—in countries like these: TAIWAN Study soils used in the commercial production of rice and tropical fruits . . . COSTA RICA Evaluate soil quality on a cacao farm . . . INDIA Observe 1,000-year-old farming practices on terraced hillsides.

**DO RESEARCH.** Make hands-on discoveries. Participate in a faculty research project or do your own independent study. Explore mustard seed meal as a biopesticide in farm soils. Measure different forms of selenium in mine run-off. Collect data on the role of volcanic ash in Idaho's soil systems. Paid positions are available.

**VOLUNTEER.** Give back. Grow produce to donate to a local food bank. Teach 4-H youth groups about soil. Hunt for the giant Palouse earthworm.

**GET INVOLVED.** Network and have fun. SOIL STEWARDS Grow vegetables at the UI organic farm and sell the produce . . . SOIL AND SITE EVALUATION TEAM Compete in intercollegiate contests identifying and evaluating different types of soil . . . PLANT AND SOIL SCIENCE CLUB Grow and sell plants; visit the Japanese Gardens or the World Forestry Center in Portland.

### FASTFACT

One tablespoon of rich soil contains more organisms than there are people on Earth.

### CAREER OPPORTUNITIES

Our graduates take jobs with starting salaries of up to \$45,000 in businesses and in government agencies.

Here are a few possibilities:

**SOIL CONSERVATION TECHNICIAN.** Provide landowners with technical information on soil and water conservation; help them apply conservation practices; survey, design, and inspect conservation practices.

**AGRICULTURE SPECIALIST.** Assist growers in organic farming techniques, agrichemical use, nutrient management, conservation tillage, or soil and water management.

**ENVIRONMENTAL CONSULTANT.** Work for a private firm with expertise in bioremediation, waste cleanup, hazardous waste management, water quality protection, or land-use planning.

**ENVIRONMENTAL QUALITY SPECIALIST.** Work for government agencies in jobs related to soil and water quality, regulatory procedures and enforcement, and public information.

**FIELD SCIENTIST.** Collect data for land-use planning and present your findings to the public.

**COMBINE YOUR EDUCATION.** A second language can broaden your career options. Depending on your career goals, take courses in communications, natural resource management, or business.

**CONTINUE YOUR EDUCATION.** Earn an advanced degree in soil science, environmental science, ecology, chemistry, geology, or physics.

FIND OUT MORE ABOUT THE AGROECOLOGY, HORTICULTURE, AND ENVIRONMENTAL QUALITY MAJOR

[WWW.CALS.UIDAHO.EDU/PSES](http://WWW.CALS.UIDAHO.EDU/PSES)

	FRESHMAN		SOPHOMORE		JUNIOR		SENIOR	
FALL	Chem 111 Principles of Chemistry I	4	Biol 115 Cells & Evolution of Life	4	Biol 213 Principles of Biological Structure & Function or PLSc 205 General Botany	4	Engl 313 Business Writing or Engl 317 Technical Writing	3
	Comm 101 Fund. of Public Speaking	2	Chem 275 Carbon Compounds or Chem 277 Organic Chemistry	3	PLSc 438 Pesticides in the Environment	3	PLSc 415 Plant Pathology or Soil 425 Microbial Ecology	3
	CORE 103-149 Core Discovery Course	4	Ent 322 Economic Entomology	3	Soil 415 Soil & Environmental Physics	3	Soil 437 Soil Biology	3
	Engl 101 Intro. to College Writing	3	Phys 111 General Physics I	4	Elective Elective—Core	3	Stat 251 Statistical Methods	3
	PLSc 102 Science of Plants in Agriculture	3	Soil 205/206 The Soil Ecosystem/Lab	4	Elective Elective	3	Elective Elective	3
	<b>TOTAL</b>	<b>16</b>	<b>TOTAL</b>	<b>18</b>	<b>TOTAL</b>	<b>16</b>	<b>TOTAL</b>	<b>15</b>
SPRING	Chem 112 Principles of Chemistry II	5	Geog 385 GIS Primer	3	MMBB 250/255 General Microbiology/Lab	5	Soil 422 Environmental Soil Chemistry	3
	CORE 153-199 Core Discovery Course	3	Math 160 Survey of Calculus	4	Soil 454 Soil Development & Classification	3	Soil 499 Directed Study Professional Certification	3
	CS 112 Intro. to Problem Solving & Programming	3	Phys 112/L General Physics II/Lab	4	Soil 446 Soil Fertility	3	Elective Elective—Core	3
	Engl 102 College Writing & Rhetoric	3	Elective Elective—Core	3	Elective Elective—Core	3	Electives Electives	9
	Geol 101/L Physical Geology/Lab	4	Elective Elective	3	Elective Elective	3	<b>TOTAL</b>	<b>18</b>
	<b>TOTAL</b>	<b>18</b>	<b>TOTAL</b>	<b>17</b>	<b>TOTAL</b>	<b>17</b>		

Total for degree = 128 credits. Course offerings may change from year to year. Always check the current course catalog.

TO LEARN MORE  
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*"I feel that soil and land resources is a good alternative to environmental studies because it allows me to take more hard science classes. I was also able to double major in Spanish, which has prepared me to work for the Peace Corps."*

ERIN MORRA, soil and land resources option