

# ENVIRONMENTAL SOIL SCIENCE, CERTIFICATE

## REQUIREMENTS

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Code	Title	Credits
	Soil Science Foundation	4
	Soil Science Themes	9
	Allied Sciences	2-4
<b>Total Credits</b>		<b>16</b>

- The certificate requires a **minimum of 16 credits**.
- A minimum grade of C is required in all certificate coursework.
- Courses taken on a pass/fail (satisfactory/unsatisfactory) basis will not count toward the certificate.
- All certificate coursework must be completed in residence at the UW-Madison.

### SOIL SCIENCE FOUNDATION

Complete the following courses for a total of **4 credits**:

Code	Title	Credits
SOIL SCI 301 or SOIL SCI/ ENVR ST/ GEOG 230	General Soil Science Soil: Ecosystem and Resource	3
SOIL SCI 302	Meet Your Soil: Soil Analysis and Interpretation Laboratory	1
<b>Total Credits</b>		<b>4</b>

### SOIL SCIENCE THEMES

Complete at least one course from three of the four thematic areas for a **minimum of 9 credits**. Courses may only count towards one thematic area. Additional courses from this section may be completed to meet the overall minimum credits for the certificate.

#### Soil Fertility & Chemistry

Code	Title	Credits
SOIL SCI 321	Soils and Environmental Chemistry	3
SOIL SCI/ AGRONOMY/ HORT 326	Plant Nutrition Management	3
SOIL SCI/BSE/ CIV ENGR 372	On-Site Waste Water Treatment and Dispersal	2
SOIL SCI 430	Environmental Soil Contamination	3
SOIL SCI/ F&W ECOL 451	Environmental Biogeochemistry	3
SOIL SCI 621	Soil Chemistry	3
SOIL SCI/ CIV ENGR/ M&ENVTOX 631	Toxicants in the Environment: Sources, Distribution, Fate, & Effects	3

#### Soil Physics & Development

Code	Title	Credits
SOIL SCI 327	Environmental Monitoring and Soil Characterization for Earth's Critical Zone	4
SOIL SCI/ GEOG 525	Soil Geomorphology	3
SOIL SCI/ GEOG 526	Human Transformations of Earth Surface Processes	3
SOIL SCI/ AGRONOMY/ ATM OCN 532	Environmental Biophysics	3
SOIL SCI 622	Soil Physics	3

#### Soil Biology & Ecology

Code	Title	Credits
SOIL SCI/ PL PATH 323	Soil Biology	3
SOIL SCI/ AGRONOMY/ BOTANY 370	Grassland Ecology	3
SOIL SCI/ MICROBIO 425	Environmental Microbiology	3
SOIL SCI/ F&W ECOL 451	Environmental Biogeochemistry	3
SOIL SCI/ CIV ENGR 623	Microbiology of Waterborne Pathogens and Indicator Organisms	3

#### Soils and the Environment

Code	Title	Credits
SOIL SCI 211	Soils and Climate Change	2
SOIL SCI 250	Introduction to Environmental Science	3
SOIL SCI/ ENVR ST 324	Soils and Environmental Quality	3
SOIL SCI 327	Environmental Monitoring and Soil Characterization for Earth's Critical Zone	4
SOIL SCI 430	Environmental Soil Contamination	3
SOIL SCI 499	Soil Management	3
SOIL SCI/ F&W ECOL/ HORT 524	Urban Soil and Environment	3
SOIL SCI/ ENVR ST 575	Assessment of Environmental Impact	3
SOIL SCI 585	Using R for Soil and Environmental Sciences	3

### ALLIED SCIENCES

Complete one course from the following for a **minimum of 2 credits**:

#### Course List

Code	Title	Credits
A A E 101	Introduction to Agricultural and Applied Economics	4
A A E/ENVR ST 244	The Environment and the Global Economy	4

A A E 352	Global Health: Economics, Natural Systems, and Policy	4
AGRONOMY 100	Principles and Practices in Crop Production	4
AGROECOL/ AGRONOMY/ C&E SOC/ENTOM/ ENVIR ST 103	Agroecology: An Introduction to the Ecology of Food and Agriculture	3
AGRONOMY/ BOTANY/ SOIL SCI 370	Grassland Ecology	3
AGRONOMY 377	Global Food Production and Health	3
BSE 301	Land Information Management	3
BSE/CIV ENGR/ SOIL SCI 372	On-Site Waste Water Treatment and Dispersal	2
BSE 473	Water Management Systems	3
C&E SOC/SOC 140	Introduction to Community and Environmental Sociology	4
C&E SOC/SOC 222	Food, Culture, and Society	3
C&E SOC/ F&W ECOL/ SOC 248	Environment, Natural Resources, and Society	3
C&E SOC/A A E/ SOC 340	Issues in Food Systems	3-4
ENTOM/ AGRONOMY/ NUTR SCI 203	Introduction to Global Health	3
ENTOM 570	Systems Thinking in Global Health	3
HORT 120	Survey of Horticulture	3
HORT 227	Propagation of Horticultural Plants	3
HORT/PL PATH 261	Sustainable Turfgrass Use and Management	2
HORT 370	World Vegetable Crops	3
LSC 212	Introduction to Scientific Communication	3
LSC 251	Science, Media and Society	3
LSC 430	Communicating Science with Narrative	3
PL PATH 311	Global Food Security	3

## CERTIFICATE COMPLETION REQUIREMENT

This undergraduate certificate must be completed concurrently with the student's undergraduate degree. Students cannot delay degree completion to complete the certificate.