

## Undergraduate Soil Science Courses

**SOIL 2112. Soil Morphology. 1 Credit Hour (Lecture: 1 Hour, Lab: 0 Hours).**

Soil morphology, characterizations of soil, and judging of soils for various uses by field-based assessment. May receive credit for WSES 2112 or SOIL 2112.

**SOIL 2375. Soil as the Basis for Society. 3 Credit Hours (Lecture: 3 Hours, Lab: 0 Hours).**

The underpinnings of the scientific principles of soils, how people have harmed them, and why everyone should be concerned with how we treat them. This course may not be used to fulfill the degree requirements for wildlife or ecosystem sciences.

**SOIL 3101. Soil Science Laboratory. 1 Credit Hour (Lecture: 0 Hours, Lab: 4 Hours).**

Basic laboratory techniques used to analyze soil chemical, physical, and biological properties. Hands on examples will demonstrate core soil science principles. Prerequisites: ENVS 3301 or SOIL 3301 (or concurrent enrollment); and CHEM 1411, CHEM 1407, or CHEM 1409.

**SOIL 3301. Soil Science. 3 Credit Hours (Lecture: 3 Hours, Lab: 0 Hours).**

Basic principles of soil science, including physical, biological, and chemical properties. Discussion will include soils applications in wildland, cropland, and developed environments. This course does not include a laboratory section. Credit will not be awarded for both this course and WSES 3401. Prerequisite: CHEM 1411, CHEM 1407, or CHEM 1409.

**SOIL 3302. Soils, Land Use, and The Environment. 3 Credit Hours (Lecture: 3 Hours, Lab: 0 Hours).**

Interactions among soil physical, chemical, and biological processes affecting soil, water, and environmental quality. Addressed in relation to land use management practices such as erosion control, soil conservation, soil reclamation, riparian buffers, bioswales, and artificial wetlands. Land use planning tools, including WebSoil Survey and GIS will be used. Prerequisites: WSES/ENVS 3401; or WSES/SOIL 3301 and WSES/SOIL 3101.

**SOIL 3319. Composting. 3 Credit Hours (Lecture: 2 Hours, Lab: 2 Hours).**

The art and science of composting of agricultural, municipal, foodservice and household wastes to include composting techniques, waste products and feedstocks, aerobic vs. anaerobic processes, evaluation of composted products and their beneficial uses. Biological processes used to decompose organic materials will be studied. Prerequisites: Junior standing or permission of the instructor.

**SOIL 3412. Soil Genesis, Morphology, and Classification. 4 Credit Hours (Lecture: 3 Hours, Lab: 3 Hours).**

Soil development, classification, and mapping. Laboratory work will consist of field-based study of the morphological features of the soil profile and mapping of designated areas using standardized methods. Student may receive credit for either WSES 3412 or SOIL 3412. Prerequisites: SOIL 3301 and SOIL 3101.

**SOIL 4212. Soil Ecology. 2 Credit Hours (Lecture: 2 Hours, Lab: 0 Hours).**

Characterizations of organisms in the soil food web, analyses of interrelationships among soil organisms, and assessments of interactions between soil organisms and their environmental conditions. Credit will only be given for WSES 4212 or SOIL 4212. Prerequisites: WSES 2405, SOIL 3301, and SOIL 3101.

**SOIL 4213. Soil Physical Properties. 2 Credit Hours (Lecture: 2 Hours, Lab: 0 Hours).**

Soil physical characteristics and their relationship to soil management. Methods of measuring soil and soil conservation. Soil phases, soil water properties, particle size, clay and clay mineralogy, and environmental impacts. Credit will only be given for WSES 4213 or SOIL 4213. Prerequisites: SOIL 3301 and SOIL 3101.

**SOIL 4450. Soil Nutrient Cycling. 4 Credit Hours (Lecture: 3 Hours, Lab: 3 Hours).**

Plant nutrition, soil nutrient cycling, and nutrient management. Biological, physical, and chemical soil properties and implications for nutrient availability to crops and nutrient fate in the environment. Plant nutrition and soil fertility problems and corrective action, soil and nutrient management. Credit will only be given for WSES 4450 or SOIL 4450. Prerequisites: SOIL 3301 and SOIL 3101.