Soils 461/661: Soil Management for Environmental Sustainability

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Course Description: Use soil science concepts from fertility, wind and water erosion, and surface and groundwater contaminant abatement principles in solving soil management problems for all disciplines of natural resources. 2hrs Lecture (asynchronous online), 3hrs Lab per week.

Students completing this course will be able to:

1. Describe various soil physical, chemical, and biological management concerns and potential solutions.
2. Assess the complexity of various management practices and their impacts on soil.
3. Employ practices and software used by soil conservation agencies and others who manage soil.
4. Demonstrate the ability to use and apply soil management tools and techniques.
5. Complete a project that integrates knowledge of soil, land, and waste resources; technical skills (such as lab analyses, software analyses, and research); and previous experience in your area of study.
6. Demonstrate skills, processes, and resources needed to make a successful transition from college to the world beyond by completing a team oriented project for an external audience in a self-directed environment
    a. Demonstrate the ability to work in a team environment on a complex project
    b. Demonstrate the ability to work in a self-directed environment on a complex project
    c. Demonstrate the ability to use and apply soil management tools and techniques.

Texts:

Required:

Soil and Water Conservation. Troeh, Hobbs, and Donahue. Prentice Hall.

There will also be various handouts and links to online resources.
This course has a D2L space for dissemination of materials

Evaluation

Grade is a combined lecture and lab score including:

6 Homework/Writing Assignments	300 points (50 each)
Participation in Group Discussion	100 points
Lab/Consultant Reports	180 points (60 points each)
Project	300 points
Quizzes	100 points (20 points each)

***Graduate students will have additional expectations.

Expect the **A, B, C, etc…** breakdown to follow the **90, 80, 70, etc…** percent of total points earned with +/- grading used. This is a Writing Emphasis credit course.

Cheating and/or plagiarism will not be tolerated. You may work together in lab and class discussions, but you will do all assignments and exams independently as per Chapter 14 of the Student Handbook.

Proper American Society of Agronomy style citation is required on all written documents.

Late assignments will be assessed a 5% deduction per day.

Lecture Topic	Tentative Date
Introduction to Land Degradation Issues	Week 1
Soil Physical Concerns	Week 2 and 3
Soil Chemical Concerns	Week 4 and 5
Nutrient Management Planning	Week 6 and 8
Soil Loss	Week 9
Water Erosion	Week 10
Wind Erosion	Week 11
Managing Erosion	Week 12
Water Balance Management	Week 13
Soil Biology and Soil Quality	Week 14
Project Presentations	Week 15