Course Summary

Course : CW511  Title : Soil Science
Length of Course : 8  Tamara Smith
Prerequisites : Credit Hours : 3

Description

Course Description: A fundamental study of soil properties and reactions critical to the evaluation of how contaminants, as well as essential nutrients, behave in the soil environment. Interactions of potential pollutants with soils and the aquatic and atmospheric environments are emphasized. Methods of soil management or remediation to minimize pollution are presented. (Prerequisites: CHEM133 OR SCIN131 AND SCIN138)

Course Scope:

This course seeks to introduce students to basics of soils science and contemporary issues in soils science and management. There are no science pre-requisites; however, an understanding of basic principles of environmental science, chemistry and/or physics will be helpful in easily understanding soil science concepts.

Objectives

After successfully completing this course, you will be able to:

LO-1 Define the basic chemical and physical changes which transform rock into soil.
LO-2 Summarize the different soil orders and their characteristics.
LO-3 Demonstrate how and why the physical properties of soil impact certain human activities.
LO-4 Explain how chemicals and nutrients are stored and released from the soil.
LO-5 Utilize soil surveys to analyze how soil properties have changed over time.
LO-6 Distinguish the major categories of soil pollutants and how remediation for these pollutants occurs.
LO-7 Identify how erosion affects the soil and how it can be prevented.
LO-8 Apply your knowledge to assess a current topic in soil science.
Outline

Week 1: Why study soil? Soil Formation & Development

Learning Objectives
LO-1

Readings
Plaster, Chapters 1 & 2 and Appendix 1

Week 1 Lesson
Assignments
Intro Forum
Forum #1

Week 2: Soil classification Physical Properties

Learning Objectives
LO-2, LO-3

Readings
Plaster, Chapters 3 & 4 and Appendices 2 & 3
Learning Soil with the Kayapo Indians (Cooper et al. 2005)

Week 2 Lesson
Assignments
Forum #2
Quiz 1

Week 3: Soil Biota Organic Matter

Learning Objectives
LO-3, LO-4

Readings
Plaster, Chapters 5 & 6
The Scoop on Dirt (Jones 2006)

Week 3 Lesson
Assignments
Week 4: Soil and Water

Learning Objectives
LO-3, LO-4, LO-7

Readings
Plaster, Chapters 7-9

Week 4 Lesson
Assignments
Forum #4
Quiz 3

Week 5: Soil and Plants

Learning Objectives
LO-3, LO-4

Readings
Plaster, Chapters 10-12

Week 5 Lesson
Assignments
Forum #5
Quiz 4

Week 6: Soil Sampling & Testing Fertilizers

Learning Objectives
LO-2, LO-3, LO-4, LO-5, LO-6

Readings
Plaster, Chapters 13-15
USDA Guide to Soil Taxonomy pp 1-162, 851-861

Week 6 Lesson
Assignments
Forum #6
Quiz 5

**Week 7: Agricultural & Horticulture**

Learning Objectives
LO-3, LO-4, LO-6, LO-7

Readings
Plaster, Chapters 16, 17, and Appendices 4 & 5

Week 7 Lesson
Assignments
Forum #7
Start work on Soil Survey Project

**Week 8: Soil Conservation & Current Issues**

Learning Objectives
LO-2, LO-3, LO-5, LO-6, LO-7, LO-8

Readings
Plaster, Chapters 18-20
Soil Science and the Carbon Civilization (Lal 2007)

Week 8 Lesson
Assignments
Forum #8
Soil Survey Project Due

**Evaluation**

**Grading:**

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<tr>
<th>Name</th>
<th>Grade %</th>
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<tbody>
<tr>
<td>Forums</td>
<td>24.00 %</td>
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<tr>
<td>Forum 1</td>
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<td>Quiz 2 (Wk3)</td>
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<tr>
<td>Quiz 1 (Wk2)</td>
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**Materials**

**Book Title:** Soil Science and Management - The VitalSource eBook will be provided through the APUS Bookstore.

**Author:** Plaster, Edward

**Publication Info:** Cengage

**ISBN:** 9780840024329

**Book Title:** You must validate your cart to get access to your VitalSource e-book(s). If needed, instructions are available here - http://apus.libguides.com/bookstore/undergraduate

**Author:** N/A

**Publication Info:** N/A

**ISBN:** N/A

**Required Readings**

Under the Lessons tab in our classroom, or on the web as specified.

**Websites**

In addition to the required course texts a number of public domain Websites are useful. Please abide by the university’s academic honesty policy when using all sources, including those found on the Internet. Note website addresses are subject to change.

Soil Science Society of America: https://www.soils.org/


USDA Natural Resources Conservation Service: http://www.soils.usda.gov/

12 Soil Orders: http://soils.cals.uidaho.edu/soilorders/


Course Guidelines

Citation and Reference Style

- Attention Please: Students will follow the APA Format as the sole citation and reference style used in written work submitted as part of coursework to the University. Assignments completed in a narrative essay or composition format must follow the citation style cited in the APA Format.

Tutoring

- Tutor.com offers online homework help and learning resources by connecting students to certified tutors for one-on-one help. AMU and APU students are eligible for 10 free hours* of tutoring provided by APUS. Tutors are available 24/7 unless otherwise noted. Tutor.com also has a SkillCenter Resource Library offering educational resources, worksheets, videos, websites and career help. Accessing these resources does not count against tutoring hours and is also available 24/7. Please visit the APUS Library and search for ‘Tutor’ to create an account.

Late Assignments

- Students are expected to submit classroom assignments by the posted due date and to complete the course according to the published class schedule. The due date for each assignment is listed under each Assignment.
- Generally speaking, late work may result in a deduction up to 20% of the grade for each day late, not to exceed 5 days.
- As a working adult I know your time is limited and often out of your control. Faculty may be more flexible if they know ahead of time of any potential late assignments.

Turn It In

- Faculty may require assignments be submitted to Turnitin.com. Turnitin.com will analyze a paper and report
instances of potential plagiarism for the student to edit before submitting it for a grade. In some cases professors may require students to use Turnitin.com. This is automatically processed through the Assignments area of the course.

**Academic Dishonesty**

- Academic Dishonesty incorporates more than plagiarism, which is using the work of others without citation. Academic dishonesty includes any use of content purchased or retrieved from web services such as CourseHero.com. Additionally, allowing your work to be placed on such web services is academic dishonesty, as it is enabling the dishonesty of others. The copy and pasting of content from any web page, without citation as a direct quote, is academic dishonesty. When in doubt, do not copy/paste, and always cite.

**Submission Guidelines**

- Some assignments may have very specific requirements for formatting (such as font, margins, etc) and submission file type (such as .docx, .pdf, etc) See the assignment instructions for details. In general, standard file types such as those associated with Microsoft Office are preferred, unless otherwise specified.

**Disclaimer Statement**

- Course content may vary from the outline to meet the needs of this particular group.

**Communicating on the Forum**

- Forums are the heart of the interaction in this course. The more engaged and lively the exchanges, the more interesting and fun the course will be. Only substantive comments will receive credit. Although there is a final posting time after which the instructor will grade comments, it is not sufficient to wait until the last day to contribute your comments/questions on the forum. The purpose of the forums is to actively participate in an ongoing discussion about the assigned content.
- “Substantive” means comments that contribute something new and hopefully important to the discussion. Thus a message that simply says “I agree” is not substantive. A substantive comment contributes a new idea or perspective, a good follow-up question to a point made, offers a response to a question, provides an example or illustration of a key point, points out an inconsistency in an argument, etc.
- As a class, if we run into conflicting viewpoints, we must respect each individual’s own opinion. Hateful and hurtful comments towards other individuals, students, groups, peoples, and/or societies will not be tolerated.

**University Policies**

**Student Handbook**

- Drop/Withdrawal policy
- Extension Requests
- Academic Probation
- Appeals
- Disability Accommodations

The mission of American Public University System is to provide high quality higher education with emphasis on educating the nation’s military and public service communities by offering respected, relevant, accessible, affordable, and student-focused online programs that prepare students for service and leadership in a diverse, global society.
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