

SWS 5050: Soils for Environmental Professionals

Spring 2024

3 Credits

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Course Prerequisites:

Basic knowledge of chemistry, physics and biology. Graduate Student status or instructor approval.

Course Overview: Statement of General Education Purpose

This course covers fundamentals pertaining to soil; one of our most valuable and most mistreated natural resources. This course also delves into the environmental issues surrounding soil. The objective of this course is to provide students with an understanding of soil basics including its chemical, physical and biological properties, and the interconnectedness between soil, water and human activities. Throughout the course, students will learn the importance of soils in sustaining life and the impact of soil conservation on global environmental quality and society.

Course Goals:

The goal is to acquire the basic knowledge about soil including soil physical, chemical and biological properties and to be acquainted with technological innovations available for aiding in the best utilization of our soil. Demonstrate a practical understanding of: a) properties common to all or most soils, b) vocabulary sufficient to communicate with others in soil science and management, c) the different management strategies required for problem soils, d) problem-solving skills to manage soil effectively, and e) an appreciation of the importance of soils in agriculture, the environment, and our daily lives. After the course, students are able to communicate/discuss with soil scientists and local/regional natural resource managers about topics related to soil issues. To aid these goals, a couple of specific learning objectives are set for each module related to specific topics covered in each module.

Course structure:

The course is organized by modules and each module will cover specific theme(s) related to soil sciences including physical, chemical and biological properties. Modules will consist of four main components: Discussion Board, Assignment, Chat Session and Quiz. Discussion Board and Chat session will provide opportunities to learn from classmates through interactions, while assignments are designed to practice ideas and concepts each student learned. Quizzes are designed to assess the understanding of the materials covered in each module. In addition to these module components, students will take two exams during the course, which will be used to evaluate comprehension of the themes covered during the course and to apply knowledge and skill to new problems. Students will also develop their own term project (either a short research proposal or a research paper) related to soil sciences or soil conservation efforts.

Topics covered in the course modules:

Topics covered include: Soil formation, soil classification, soil physical, chemical (salinity, pH and ion exchange), and biological properties, soil water contents and movements, soil organic matter, soil nutrients, soil pollution, soil erosion, soil health concepts and soil conservation.

Course Website: Course website is managed through E-Learning Canvas: <https://elearning.ufl.edu/>

Chat Sessions:

One hour long live chat sessions (short review/feedback of the previous module followed by a live group discussion related to the themed topic for each module) are scheduled for Wednesday nights at 6:30 pm (EST) (one live chat session for each module). After the group discussion, students who have questions related to the course materials are welcome to stay in the zoom meeting and ask questions to the instructor.

Textbook:

Required: “The Nature and Properties of Soils”, 2017 (15th ed). R.R. Weil and N.C. Brady. Prentice Hall Publishers. ISBN-13 : 978-0133254488.

Note: Additional lecture materials will be provided on the class web page in Canvas.

Grading:

Exams (2 exams)	20%
Term Project	20%
Module Assignments	20%
Module Quizzes	20%
Discussion Board	10%
Chat session participation	10%
TOTAL	100%

Final grades will be based on 2 exams, term project (a research proposal or short research on soil conservation efforts), assignments, quizzes, discussion board and chat session participation.

Exams:

Students will take two exams during the course. Each exam is designed for 60 min but students can spend 90 min to complete the exam, so answers should not be limited by time. Each exam consists of multiple-choice questions (just like quizzes) and essay questions. Make-up exams will be approved only due to extended illness or excused class activities. Make-up exams must be approved prior to the regularly scheduled exam, and must be made-up within two days. If you are unable to take the exam due to illness, call the instructors prior to the exam to confirm your absence.

Chat Participation:

Chat participation accounts for 10% (10% for either attending live chat sessions or submitting answers to the chat group discussion questions) of your grade. If you cannot attend, you may watch the recorded chat sessions and turn in the answers to chat session questions within 2 days following the chat session. Chat sessions are scheduled for Wednesday nights at 6:30 pm (EST) through the Zoom link on the web page.

Discussion Board:

Topics for Discussion Board will be provided in each module. Students are required to submit a response to these topics/questions as well as respond to at least **3** other student responses.

Assignments:

Submission of assignments is expected on time. Late work will lose 10% of total points each day and not accepted after 3 calendar days.

Quizzes:

Quizzes for modules are scheduled in the first week after the module ends (the first Monday following the previous module). Quizzes are used for you to evaluate whether you obtained knowledge and concepts that were covered in each module. They are meant as a study aid for exams as well. Correct answers will be available after each quiz closes.

Project:

The project will consist of either a research proposal (2 pages long) or short research paper (2 pages long). More details will be given in class.

Grading scale:

The following grading scale will be used:

A	100-90.0 %	C	76.99-70.00
B+	89.99-87.00	D+	69.99-67.00
B	86.99-80.00	D	66.99-60.00
C+	79.99-77.00	E	<60

Requirements for class attendance and make-up exams, assignments and other work are consistent with university policies that can be found at:

<https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>.

For information on current UF policies for assigning grade points, see

<https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>

Online Course Evaluation Process:

Student assessment of instruction is an important part of efforts to improve teaching and learning. At the end of the semester, students are expected to provide feedback on the quality of instruction in this course using a standard set of university and college criteria. These evaluations are conducted online through GatorEval. Evaluations are typically open for students to complete during the last two or three weeks of the semester; students will be notified of the specific times when they are open.

Each online distance learning program has a process for, and will make every attempt to resolve, student complaints within its academic and administrative departments at the program level. See <http://distance.ufl.edu/student-complaints> for more details.

Academic Honesty:

As a student at the University of Florida, you have committed yourself to uphold the Honor Code, which includes the following pledge: ***"We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity."*** You are expected to exhibit behavior consistent with this commitment to the UF academic community, and on all work submitted for credit at the University of Florida, the following pledge is either required or implied: ***"On my honor, I have neither given nor received unauthorized aid in doing this assignment."***

It is assumed that you will complete all work independently in each course unless the instructor provides explicit permission for you to collaborate on course tasks (e.g. assignments, papers,

quizzes, exams). Furthermore, as part of your obligation to uphold the Honor Code, you should report any condition that facilitates academic misconduct to appropriate personnel. It is your individual responsibility to know and comply with all university policies and procedures regarding academic integrity and the Student Honor Code. Violations of the Honor Code at the University of Florida will not be tolerated. Violations will be reported to the Dean of Students Office for consideration of disciplinary action. For more information regarding the Student Honor Code, please see: <http://www.dso.ufl.edu/sccr/process/student-conduct-honor-code>.

Software Use:

All faculty, staff and students of the university are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against university policies and rules, disciplinary action will be taken as appropriate.

Services for Students with Disabilities:

The Disability Resource Center coordinates the needed accommodations of students with disabilities. This includes registering disabilities, recommending academic accommodations within the classroom, accessing special adaptive computer equipment, providing interpretation services and mediating faculty-student disability related issues. Students requesting classroom accommodation must first register with the Dean of Students Office. The Dean of Students Office will provide documentation to the student who must then provide this documentation to the Instructor when requesting accommodation

0001 Reid Hall, 352-392-8565, www.dso.ufl.edu/drc/

Campus Helping Resources:

Students experiencing crises or personal problems that interfere with their general well-being are encouraged to utilize the university's counseling resources. The Counseling & Wellness Center provides confidential counseling services at no cost for currently enrolled students. Resources are available on campus for students having personal problems or lacking clear career or academic goals, which interfere with their academic performance.

- *University Counseling & Wellness Center, 3190 Radio Road, 352-392-1575, www.counseling.ufl.edu/cwc/*
Counseling Services

Groups and Workshops

Outreach and Consultation

Self-Help Library

Wellness Coaching
- *Career Resource Center, First Floor JWRU, 392-1601, www.crc.ufl.edu/*

DUE DATES AND DEADLINES

ALL ASSIGNMENTS IN SWS 5050 ARE DUE AT 11:59 PM (EST) ON THE DUE DATE

COURSE MATERIAL	ACTION	DUE DATE	TIME
Module 1 - Introduction to soils: Soils around us (1 week)	Begin	Monday, January 8, 2024	9:00 AM
<i>View/read Module 1 Materials: Course Overview / Go over syllabus</i>			
Live chat session (Module 1)	<i>Live</i>	Wednesday, January 10, 2024	6:30 PM
<i>Discussion Module #1 - Your Response</i>	<i>Due</i>	Thursday, January 11, 2024	11:59 PM
<i>Discussion Module #1 - Respond to at least 3 other students</i>	<i>Due</i>	Friday, January 12, 2024	11:59 PM
Module 2 – Soil formation and soil classification (1 week)	Begin	Tuesday, January 16, 2024	9:00 AM
<i>View/read Module 2 Materials:</i>			
Live chat session (Module 2)	<i>Live</i>	Wednesday, January 17, 2024	6:30 PM
<i>Assignment (Module 2)</i>	<i>Due</i>	Friday, January 19, 2024	11:59 PM
<i>Complete Quiz (Quiz Module 2)</i>	<i>Due</i>	Monday, January 22, 2024	11:59 PM
Module 3 – Soil physical property (1 week)	Begin	Monday, January 22, 2024	9:00 AM
<i>View/Read Module 3 Materials:</i>			
Live chat session (Module 3)	<i>Live</i>	Wednesday, January 24, 2024	6:30 PM
<i>Discussion Module #3 - Your Response</i>	<i>Due</i>	Wednesday, January 24, 2024	11:59 PM
<i>Discussion Module #3 - Respond to at least 3 other students</i>	<i>Due</i>	Friday, January 26, 2024	11:59 PM
<i>Complete Quiz (Module 3)</i>	<i>Due</i>	Monday, January 29, 2024	11:59 PM
Module 4 – Soil water and air (2 weeks)	Begin	Monday, January 29, 2024	9:00 AM
<i>View/Read Module 4 Materials:</i>			
Live chat session (Module 4)	<i>Live/due</i>	Wednesday, February 7, 2024	6:30 PM
<i>Assignment (Module 4)</i>	<i>Due</i>	Friday, February 9, 2024	11:59 PM
<i>Complete Quiz (Module 4)</i>	<i>Due</i>	Monday, February 12, 2024	11:59 PM

Module 5 – Soil chemical property (2 weeks)	Begin	Monday, February 12, 2024	9:00 AM
<i>View/Read Module 5 Materials:</i>			
Live chat session	<i>Live</i>	Wednesday, February 21, 2024	6:30 PM
<i>Discussion Module #5 - Your Response</i>	<i>Due</i>	Wednesday, February 21, 2024	11:59 PM
<i>Discussion Module #5 - Respond to at least 3 other students</i>	<i>Due</i>	Friday, February 23, 2024	11:59 PM
Complete Quiz (Module 5)	<i>Due</i>	Monday, February 26, 2024	11:59 PM
<i>Begin work on Term Project</i>	Do not wait until last minute!		
Exam 1		Module 2 through Module 5	
<i>Exam 1</i>	<i>Opens</i>	Friday, March 1, 2024	Noon
	<i>Closes</i>	Monday, March 4, 2024	11:59 PM
Module 6 – Soil biological property (2 weeks)	Begin	Monday February 26, 2024	9:00 AM
<i>View/Read Module 6 Materials:</i>			
Live chat session	<i>Live</i>	Wednesday, March 6, 2024	6:30 PM
<i>Assignment Module #6</i>	<i>Due</i>	Friday, March 8, 2024	11:59 PM
Term Project Topic Due	<i>Due</i>	Friday, March 8, 2024	11:59 PM
Complete Quiz (Module 6)	<i>Due</i>	Monday, March 18, 2024	11:59 PM
Spring break			
<i>Spring Break</i>	March 11th – March 15th Enjoy your break!!!		
Module 7 – Soil organic matter (1 week)	Begin	Monday, March 18, 2024	9:00 AM
<i>View/Read Module 7 Materials:</i>			
Live chat session	<i>Live</i>	Wednesday, March 20, 2024	11:59 pm
<i>Discussion Module #7 - Your Response</i>	<i>Due</i>	Wednesday, March 20, 2024	11:59 pm
<i>Discussion Module #7 - Respond to at least 3 other students</i>	<i>Due</i>	Friday, March 22, 2024	11:59 pm
Complete Quiz (Module 7)	<i>Due</i>	Monday, March 25, 2024	11:59 PM
Module 8 – Soil nutrients (2 weeks)	Begin	Monday, March 25, 2024	9:00 AM
<i>View/Read Module 6 Materials:</i>			
Live chat session	<i>Live</i>	Wednesday, April 3, 2024	6:30 pm
Assignment Module 8	Due	Friday, April 5, 2024	11:59 pm
Complete Quiz (Module 8)	<i>Due</i>	Monday, April 8, 2024	11:59 PM
Module 9 – Soil conservation and soil health (2 weeks)	<i>Begin</i>	Monday April 8, 2024	9:00 AM
<i>View/Read Module 9 Materials:</i>			
<i>Assignment Module 9</i>	<i>Due</i>	Friday, April 12, 2024	11:59 pm
Live chat session	<i>Live</i>	Wednesday, April 17, 2024	11:59 pm
<i>Discussion Module #9 - Your Response</i>	<i>Due</i>	Wednesday, April 17, 2024	11:59 pm
<i>Discussion Module #9 - Respond to at least 3 other students</i>	<i>Due</i>	Friday, April 19, 2024	11:59 pm
Complete Quiz (Module 9)	<i>Due</i>	Monday, April 22, 2024	11:59 PM
Term Project Week (1 week)	<i>Begin</i>	Monday April 22, 2024	9:00 AM
<i>Live chat session (Review and QA for final exam)</i>	<i>Live</i>	Wednesday April 24, 2024	6:30 pm
<i>Discussion Board (Your response: Share project summary)</i>	<i>Due</i>	Wednesday April 24 th , 2024	11:59 PM
Project paper (short proposal or short research paper)	<i>Due</i>	Wednesday April 24, 2024	11:59 pm
<i>Discussion Board (Respond to at least 3 classmates)</i>	<i>Due</i>	Friday April 26 th , 2024	11:59 PM
Final Exam		Module 6 through Module 9	
<i>Final exam</i>	<i>Opens</i>	Friday April 26th, 2024	Noon
	<i>Due</i>	Monday April 29th, 2024	11:59 pm

Note: