SWS 4233: Soil and Water Conservation

Summer 2025 3 Credits

Instructor	Teaching Assistant	Teaching Assistant	Teaching Assistant
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Course Overview: Statement of General Education Purpose

This course delves into the issues surrounding our two most valuable and most mistreated resources: soil and water. The objective of this course is to provide students with an understanding of the interconnectedness of soil and water conservation. The course focuses on soil and water management as it relates to relevant issues surrounding agriculture and sustainability. Throughout the course, students will learn the importance of soils and water in sustaining life, historical, cultural and socioeconomical aspects in soil and water conservation, and the impact of soil and water conservation on global environmental quality and society.

Course structure:

The course is organized by modules and each module will cover specific themes related to soil and water conservation (see syllabus for details). Each module will consist of four main components: Discussion Board, Assignment, Chat Session and Quiz. Discussion Board and Chat session will provide opportunities to interact with your classmates, while assignments are designed to practice ideas and concepts learned. Quizzes are designed to assess the understanding of the materials covered in each module. 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 related to soil and water conservation and present the project using Voicethread and submit the term project paper.

Topics covered in the course modules:

Topics discussed include: Water conservation; water resources, water functions, water usage, water footprint, virtual water, damming streams, irrigation, drainage, salinity, nutrient issues (eutrophication, algal bloom), aquifer conservation, aquatic ecosystems and services (stream, wetland, lake, and coastal ecosystem services), water resources management, stormwater management, and wastewater treatments. Soil conservation; soil resources, soil functions, soil taxonomy, soil profiles, soil properties, soil texture, soil organic matter, soil health, soil erosion, erosion mechanisms, erosion prediction equations and reduction practices, soil compaction, soil conservation programs, and soil survey. Comprehensive approaches; food-water-energy nexus. Solutions; technologies based, community based and policy-based solutions.

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

Course Goals:

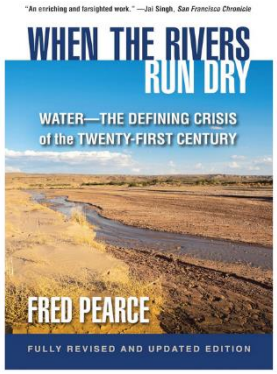
- Understand the basic principles of soil and water management and conservation.
- Describe and inform strategies for soil and water conservation.
- Develop an informed appreciation of the value of our soil and water resources from an environmental, economic, and social perspective.
- Be acquainted with technological innovations available for aiding in the best utilization of our soil and water resources.

Student Learning Objectives:

- Define and utilize concepts of virtual water and water footprint for conservation.
- Recognize services and issues associated with water resources.
- Explain the formation of a dead zone and assess the effects of agricultural soil drainage on them.
- List and describe ecosystem services provisioned by water resources including stream, wetland, and lakes.
- Recognize functions and issues associated with dams.
- Recognize challenges associated with water rights.
- Define water harvesting and give examples.
- Compare and contrast the agricultural practices of historical civilizations and the resulting soil and water conditions with modern agriculture.
- Describe functions of soil organic matter and factors that affect its subsidence/decomposition.
- List and describe the types of erosion and the active agents in each.
- List the environmental impacts of soil erosion.
- Predict the movement of water based on soil characteristics.
- Define the parameters in the RUSLE equation.
- Explore the web soil survey and extract information for several areas in the US.
- Compare and contrast conservation tillage operation to conventional tillage.
- List and describe different cropping systems for conserving soil.
- Recognize interactions between terrestrial and aquatic ecosystems.
- Recognize interactions between food, water and energy productions.
- Explore and apply technology-based, community-based, and policy-based solutions to pressing environmental issues.

Textbook:

Required: " When the Rivers Run Dry, Fully Revised and Updated Edition: Water-The Defining Crisis of the Twenty-First Century" by Fred Pearce – August 28, 2018



Module outlines and additional lecture materials will be provided on the class web page in Canvas. Required reading material for each of the lecture topics will be provided on the class web page.

Grading:

Exams (2)	20%
Voicethread Project	20%
Module Assignments	30%
Quizzes	10%
Discussion Board	10%
Chat session participation	10%
TOTAL	**100%**

Exams:

Grades will be based on **2 required exams (90 min will be provided for 60 min exam, so your answers should not be limited by time)**, one project paper/presentation, assignments, quizzes, discussion board and chat session participation. Exams will be taken online through canvas. 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.

Participation (Discussion Board and Chat sessions):

Participation accounts for 20% (10% for discussion board and 10% for chat sessions) of your grade.

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

Chat sessions: Your attendance at live chat session is a part of the participation grade. If you cannot attend in live chat sessions, you can simply watch the recorded chat sessions and turn in answers to the chat session questions within 2 days following the chat session. Then, you will get participation points for the chat session. **In this way, you can make this online course completely asynchronous.** Just one chat session will be held for each module. Chat sessions are scheduled for Wednesday nights at 6:30 pm (EST) through a Zoom link on the web page.

Assignments:

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

Quizzes:

Quizzes for modules are scheduled in the first week after the module ends. Quizzes are used for you to evaluate whether you obtain knowledge and skills that are covered in each module. They are meant as a study aid for exams as well. Correct answers will be available on canvas after each quiz closes.

Project:

The project will consist of a Voicethread presentation plus 2 pages long project paper dealing with a topic in soil or water conservation. More details will be given in class.

Honors Section:

Honors students will produce a Voicethread project as above. In addition to the Voicethread presentation, they will write a **5 pages long project paper** with more depth and details. The Honors Project will be an extended project in the length and detail of discussion.

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 4233 ARE DUE AT 11:59 PM (EST) ON THE DUE DATE

COURSE MATERIAL	ACTION	DUE DATE	TIME
Module 1 – Course Introduction	**Begin**	Monday, May 12, 2025	9:00 AM
View/read Module 1 Materials: *Course Introduction: Course Overview/Syllabus*			
Live chat session	*Live*	Wednesday, May 14, 2025	6:30 PM
Discussion Module #1 - Your Response	*Due*	Thursday, May 15, 2025	11:59 PM
*Discussion Module #1 - Respond to **at least** 3 other students*	*Due*	Saturday, May 17, 2025	11:59 PM
Module 2 – Water resources, usages and services	**Begin**	Monday, May 19, 2025	9:00 AM
View/read Module 2 Lectures and Materials:			
Assignment (Module 2)	*Due*	Friday, May 23, 2025	11:59 PM
Live chat session	*Live*	Wednesday, May 28, 2025	6:30 PM
Discussion Module #2 - Your Response	*Due*	Wednesday, May 28, 2025	11:59 PM
*Discussion Module #2 - Respond to **at least** 3 other students*	*Due*	Friday, May 30, 2025	11:59 PM
Complete Quiz (Module 2)	*Due*	Monday, June 2, 2025	11:59 PM
Module 3 – Water related issues and conservation	**Begin**	Monday, June 2, 2025	9:00 AM
View Module 3 Lectures and Materials:			
Assignment (Module 3)	*Due*	Friday, June 6, 2025	11:59 PM
Live chat session (Module 3)	*Live*	Wednesday, June 11, 2025	6:30 PM
Discussion Module #3 - Your Response	*Due*	Wednesday, June 11, 2025	11:59 PM
*Discussion Module #3 - Respond to **at least** 3 other students*	*Due*	Friday, June 13, 2025	11:59 PM
Complete Quiz (Module 3)	*Due*	Monday, June 16, 2025	11:59 PM
Exam 1: 6/19/2025 - 6/22/2025 (Before summer break)			
Module 4 – Soil sciences, usages and services	**Begin**	Monday, June 16, 2025	9:00 AM
View Module 4 Lectures and Materials:			
Summer Break		**June 23 – June 27, 2025**	
Live chat session or book club (Module 4)	*Live*	Wednesday, July 2, 2025	6:30 PM
Discussion Module #4 - Your Response	*Due*	Wednesday, July 2, 2025	11:59 PM
*Discussion Module #4 - Respond to **at least** 3 other students*	*Due*	Saturday, July 5, 2025	11:59 PM
Assignment (Module 4):	*Due*	Saturday, July 5, 2025	11:59 PM
Complete Quiz (Module 4)	*Due*	Monday, July 7, 2025	11:59 PM

Module 5 – Soil related issues and erosion managements	**Begin**	Monday, July 7, 2025	9:00 AM
View Module 5 Lectures and Materials:			
Live chat session or book club (Module 5)	*Live*	Wednesday, July 16, 2025	6:30 PM
Discussion *Module #5 - Your Response*	*Due*	Wednesday, July 16, 2025	11:59 PM
*Discussion Module #5 - Respond to **at least** 3 other students*	*Due*	Friday, July 18, 2025	11:59 PM
Assignment (Module 5):	*Due*	Friday, July 18, 2025	11:59 PM
*Complete **Quiz (Module 5)***	*Due*	Monday, July 21, 2025	11:59 PM
Soil and Water Conservation Project Topic Due	*Due*	**Monday, July 14, 2025**	11:59 PM
Begin work on Final Project	**Do not wait until last minute!**		
Module 6 – Soil and Water Conservation and Solutions	**Begin**	Monday July 21, 2025	9:00 AM
View Module 6 Lectures and Materials:			
Live chat session or book club (Module 6)	*Live*	Wednesday, July 23, 2025	6:30 PM
Discussion Module #6 - Your Response	*Due*	Wednesday, July 23, 2025	11:59 PM
*Discussion Module #6 - Respond to **at least** 3 other students*	*Due*	Friday, July 25, 2025	11:59 PM
Assignment (Module 6)	*Due*	Friday, July 25, 2025	11:59 PM
Complete Quiz (Module 6)	*Due*	Monday, July 28, 2025	11:59 PM
Continue working on Final Project	**Do not wait until last minute!**		
Soil and Water Conservation Project	**Submit**	**Monday, July 28, 2025**	**11:59 pm**
Topic Submitted	*Due*	Monday, July 14, 2025	11:59 pm
Voicethread Link submitted or shared	***Due***	**Monday, July 28, 2025**	**11:59 pm**
Peer Review Questions/Comments	*Due*	Wednesday, July 30, 2025	11:59 pm
Project paper	*Due*	Friday, August 1, 2025	11:59 pm
References	*Due*	Friday, August 1, 2025	11:59 pm
Gatoreval Course Evaluation			
Exam 2: 8/2/2025 – 8/5/2025			
The course ends on Friday August 8th 2025!!			

Note: