SWS 4233 Soil and Water Conservation

Summer 2022 3 Credits

Instructor	Teaching Assistant	Teaching Assistant
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Overview:

This course delves into the issues surrounding our two most valuable and most mistreated resources: soil and water. Topics discussed include: soil/water resources, water conservation, water usage, water footprint, virtual water, dams, issues associated with damming streams, irrigation, drainage and salinity; nutrient issues, eutrophication, algal bloom; aquifer conservation; aquatic ecosystems and services, stream, wetland, lake, and coastal ecosystem services; water resources management, stormwater management, wastewater treatments; soil erosion; historical erosions and sediment problems, erosion prediction equations and reduction practices, soil compaction, soil organic matter, soil conservation programs, soil survey; comprehensive approaches, food-water-energy nexus; solutions; technologies based, community based and policy based solutions.

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

Chat Sessions: Live chat sessions (a short lecture followed by a live group discussion) are scheduled biweekly for Wednesday nights at 5:30 pm (EST).

Course Description and Statement of General Education Purpose:

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. Concepts include soil/water resources, water conservation, water usage, water footprint, virtual water, dams, issues associated with damming streams, irrigation, drainage and salinity; nutrient issues, eutrophication, algal bloom; aquifer conservation; aquatic ecosystems and services, stream, wetland, lake, and coastal ecosystem services; water resources management, stormwater management, wastewater treatments; soil erosion; historical erosions and sediment problems, erosion prediction equations and reduction practices, soil compaction, soil organic matter, soil conservation programs, soil survey; comprehensive approaches, food-water-energy nexus; solutions; technologies based, community based and policy based solutions.

Course Goals:

Understand the basic principles of soil and water management and conservation.
Discuss strategies for soil or 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:

Recognize functions and issues associated with dams.
Define and utilize concepts of virtual water and water footprint for conservation.
Recognize services and issues associated with Floridan aquifer.
Recognize issues associated with water rights.
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.
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 USLE, RUSLE, and RUSLE2 equations.
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.

Basic Course Requirements:

Exams consist of short answer, definitions, multiple choice and true/false questions. Study guides and review sessions will be provided prior to each exam.
Homework will address current and historic topics in soil and water conservation as well as basic assignments related to class lectures.
Discussion topics will be available for each module. Students are expected to contribute to the discussions on a regular basis.

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, 2021

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

Grading:

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

Grades will be based on 2 required one-hour exams, one project/presentation, assignments and quizzes, discussion board and chat session participation. Exams will be taken online through Honorlock. **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 accounts for 20% (10% for discussion board and 10% for chat sessions) of your grade. 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. In addition, attendance at chat session is part of the participation grade. If you cannot attend, you may watch the recorded chat and turn in the chat session questions within 2 days following the chat session. Chat sessions are scheduled biweekly for Wednesday nights at 5:30 pm (EST) through the Zoom link on the web page.

Homework/Assignments
Homework submissions: Submission of assignments is expected on time. Late work will lose 10% of total points each day and not accepted after 2 calendar days.

Quizzes
Quizzes may be taken multiple times. These are meant as a study aid and can be worked on together with classmates. Correct answers will be available after each quiz closes.

Project
The project will consist of a Voicethread presentation plus 2 pages long project summary paper dealing with a topic in 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 summary 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 - Introduction	**Begin**	Monday, May 9, 2022	9:00 AM
View/read Module 1 Materials:			
Course Overview			
Discussion *Module #1 - Your Response*	*Due*	Thursday, May 12, 2022	11:59 PM
Discussion Module #1 - Respond to ***at least*** *3 other students*	*Due*	Friday, May 13, 2022	11:59 PM
Module 2 – Water resources, usages and services	**Begin**	Monday, May 16, 2021	9:00 AM
View Module 2 Lectures and Materials:			
Assignment (Module 2)	*Due*	Friday, May 20, 2022	11:59 PM
Discussion *#2 - Your Response*	*Due*	Wednesday, May 25, 2022	11:59 PM
Discussion #2 - Respond to ***at least*** *3 other students*	*Due*	Friday, May 27, 2022	11:59 PM
Complete ***Quiz (Module 2)***	*Due*	Wednesday, June 1, 2022	11:59 PM
Module 3 – Water related issues and conservation	**Begin**	Monday, May 30, 2022	9:00 AM
View Module 3 Lectures and Materials:			
Assignment (Module 3)	*Due*	Friday, June 3, 2022	11:59 PM
Discussion *Module #3 - Your Response*	*Due*	Wednesday, June 8, 2022	11:59 PM
Discussion Module #3 - Respond to ***at least*** *3 other students*	*Due*	Friday, June 10, 2022	11:59 PM
Complete ***Quiz (Module 3)***	*Due*	Wednesday, June 15, 2022	11:59 PM
Test 1 – Due 6/17/2022			
Module 4 – Geology / Soil Review	**Begin**	Monday, June 13, 2022	9:00 AM
View Module 4 Lectures and Materials:			
Summer Break		**June 20 – June 24, 2022**	
Discussion *Module #4 - Your Response*	*Due*	Wednesday, June 29, 2022	11:59 PM
Discussion Module #4 - Respond to ***at least*** *3 other students*	*Due*	Friday, July 1, 2022	11:59 PM
Assignment (Module 4):	*Due*	Friday, July 1, 2022	11:59 PM
Complete ***Quiz (Module 4)***	*Due*	Wednesday, July 6, 2022	11:59 PM

Module 5 – Cropping systems and Soil erosion managements	**Begin**	**Tuesday, July 5, 2022**	**9:00 AM**
View Module 5 Lectures and Materials:			
Independence Day		Monday, July 4th, 2022	
***Discussion** Module #5 - Your Response*	*Due*	Wednesday, July 13, 2022	11:59 PM
*Discussion Module #5 - Respond to **at least** 3 other students*	*Due*	Friday, July 15, 2022	11:59 PM
Assignment (Module 5):	*Due*	Friday, July 15, 2022	11:59 PM
*Complete **Quiz (Module 5)***	*Due*	Wednesday, July 20, 2022	11:59 PM
Water Conservation Project Topic Due	*Due*	**Monday, July 18, 2022**	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 18, 2022	9:00 AM
View Module 6 Lectures and Materials:			
***Discussion** Module #6 - Your Response*	*Due*	Thursday, July 21, 2022	11:59 PM
*Discussion Module #6 - Respond to **at least** 3 other students*	*Due*	Friday, July 22, 2022	11:59 PM
Assignment (Module 6)	*Due*	Friday, July 22, 2022	11:59 PM
*Complete **Quiz (Module 6)***	*Due*	Wednesday, July 27, 2022	11:59 PM
Continue working on Final Project	**Do not wait until last minute!**		
Water Conservation Project	**Submit**	**Monday, July 25, 2022**	11:59 pm
Topic Submitted	*Due*	Monday, July 18, 2022	11:59 pm
Voicethread Link submitted or shared	*Due*	**Monday, July 25, 2022**	11:59 pm
Peer Review Questions/Comments	*Due*	Wednesday, July 27, 2022	11:59 pm
Summary Paper Due	*Due*	Friday, July 29, 2022	11:59 pm
Test 2 – Due 8/4/2022			
The course ends on August 5th Friday 2022			