

Hydric Soils
SWS 5247 & SWS 4932 (2 Credits)
Summer 2017

Instructors

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Course Overview

This course focuses on soil/landscape relationships in and around wetlands. Major topics covered:

- Hydrology and biogeochemical processes
- Hydric soil formation in and around wetlands
 - Organic matter accumulation
 - Iron redistribution
- Expression of soil formation as soil morphology
- Organization of wet soil morphologies into field indicators of hydric soils
- Identification of hydric soils in the field using these field indicators

Course Preparation

Although this course has no prerequisite, it assumes the student has been exposed to some general concepts of soil science such as:

- Introductory soil science
 - Soil forming factors and processes
 - Soil morphology and description
 - Master and subordinate horizon designations
 - Soil textural classes
 - Size and abundance of soil features
- Biogeochemical processes
 - Saturation causing anaerobiosis
 - Effect of soil texture (i.e. particle size) on water movement
 - Biogeochemical processes as mediated by redox status of soil

These specific topics will be covered in the set of course lectures that the student will review prior to and following the field portion.

Course Website and Listserve

A course website will be created to deliver lecture material and contact with the instructors. Prior to the course, the instructors will communicate to the students using a university generated listserv. This listserv will send messages to students' ufl.edu email accounts. Students are expected to regularly monitor their UF email accounts in anticipation of correspondence from course instructors.

Course Objectives

Upon completion of this course, the student should be able to:

1. Explain the pedogenic processes that result in hydric soils.

2. Identify/describe redoximorphic features in soils and explain their relationship to hydric soils.
3. Describe regional groundwater and surface water relationships.
4. Use the definition and criteria for hydric soils and explain their relationships.
5. Use field techniques to identify regional hydric soils.
6. Install monitoring instruments to prove/disprove the presence of hydric soils.
7. Interpret monitoring equipment data.
8. Understand and explain the development of hydric soil interpretations.
9. Delineate hydric soils.

Course Format

The field portion of the course will be conducted at the University of Florida Austin Cary Forest (ACMF) at a time to be announced. The field portion will be two consecutive, all-day field excursions into the wetland of ACMF. The lectures will be available for review online. Evening chat sessions will also be available online.

Frequency

Course is taught annually in the summer.

Textbook and Course Notes

There is no textbook. Course notes will be provided on the course website.

Field Gear and Conditions

Students should expect hot temperatures more than 90°F, humid conditions, biting insects, and standing water. Students will get wet and dirty. Proper field gear clothing includes:

- ✓ Long pants to protect skin from insects and vegetation
- ✓ Boots or old shoes that will stay on your feet when walking through soft soils.
- ✓ Vented/breathable shirt to keep you cool and protect you from the vegetation, sun, and bugs
- ✓ Sunscreen: will spend half our time in the field for several consecutive days, don't burn!
- ✓ Hat: some people prefer hats to keep them cool, others don't
- ✓ Light rain jacket: we stop working when there is heavy rain or lightning
- ✓ Bug spray: mosquitos and ticks are the main pests, with chiggers only on occasion. Personal preference varies, but experience has shown the instructors that DEET and Permethrin to be effective at repelling these insects.
- ✓ Small cooler with water and a light snack to get you through the afternoon
- ✓ A positive attitude!

We will always be a short distance from our vehicles and take frequent short drives from site to site so a small cooler with cold drinks will always be within your reach when you need it. The instructors will provide a few larger coolers full of ice if you want to store items in there. Students who are unfamiliar with the conditions of summertime in North Central Florida woods are encouraged to contact the instructor for guidance.

The following field gear will be provided to each group; however, students who have their own equipment are welcome to do so. We will provide:

- ✓ 16" drain spade shovel (home depot stocks a very nice one right now)
- ✓ soil knife (any dull kitchen knife will do)
- ✓ measuring tape (short ruler, 12" or similar)
- ✓ clipboard
- ✓ Munsell color book

You will not need wetland plant lists or any other wetland delineation materials. The focus on this class will be hydric soils. The occurrence of wetland plants will be briefly discussed for a frame of reference, but the focus will be on soils.

Attendance

Class attendance is required. There are topics and concepts that are not explicitly communicated in the course notes. A student must be present the entire time on all days to master the content. As such, class attendance and participation will be a considerable portion of a student's grade:

Student Evaluation

Student grade will be based on the following assessments:

Exam (60%):

- Take-home and open book
- Distributed at the end of the course
- Undergraduate and graduate version of exam
- Due date and submission procedures will be explained in-class

Classroom Participation (20%):

- A student will be considered participating if he/she is in attendance of the lectures and paying attention
- Tardy or disruptive students will have participation points deducted

Field Participation (20%):

- Students will work in small groups (usually 2-3)
- Groups will dig and describe soils in and around wetlands, sometimes in knee-deep water
- A student will be considered participating if he/she is digging and describing soil with a group

Course Grade Scale

A	93-100
A-	90-93
B+	87-90
B	83-87
B-	80-83
C+	77-80
C	73-77
C-	70-73
D+	67-70
D	63-67
D-	60-63
E	<60

Attendance, Late Assignments, and Make-up Exam Policy:

Weekly chat attendance via the Adobe Chat forum is expected. Attendance is based on the student's confirmation of completion of materials. Attendance for a two-day field sampling exercise is mandatory. Make-up exam maybe given only in extreme circumstances, as determined by instructor.

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>.

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/honorcodes/honorcode.php>.

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.

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

Training Programs

Community Provider Database

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

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.

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/