Hydric Soils
SWS 5247 & SWS 4932 (2 Credits)
Summer 2015

Instructors
Rex Ellis, PhD, CPSS
Environmental Scientist V, SJRWMD
rexellis@ufl.edu
386.329.4548 (office hours M-F, 9-5)
352.262.3687 (mobile)

Willie Harris, PhD
Professor, Soil and Water Science Dept, UF
apatite@ufl.edu
352-294-3110 (office hours Tues 10-11:30am)
352-213-8747 (mobile)

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 reviewed at a fast pace in course lectures. Understanding these concepts is critical to understanding how and why hydric soil indicators are constructed. That understanding is necessary for students to correctly identify hydric soils in the field. Students who have not been exposed to these concepts are encouraged to review them prior to attending the course.

Course Website and Listserve
A course website will be created with the aim of posting logistical information students need prior to attending the course. The site is currently under construction. 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 form course instructors. Once completed, the course website will be announced via the listserv. Notes will be posted on the website for students to print.

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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.

Course Format
Classes will be held 2-6 PM on Wednesday (Austin Cary Conference Center), 8-5 PM on Thursday through Saturday (mornings at Conference Center and afternoons in field), and 8 AM-1pm on Sunday. Time spent in classroom and field is approximately the same. Lecture and field instruction are conducted off campus near Gainesville, FL. Homework exercises will be assigned that reinforce daily instruction. Field work will occur in the afternoons, weather permitting, under summer time (hot and humid) conditions.

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. Important: Students will be responsible for downloading and printing the notes prior to class.

Field Gear and Conditions
Students should expect hot temperatures in excess of 90F, 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 encouraged to bring any of these items since it always helps to have more:

- 16” drain spade shovel (Home Depot stock 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 in order 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 results of one exam (take home-60%), classroom participation (20%), and field participation (20%).

**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**

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<thead>
<tr>
<th>Grade</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>A</td>
<td>93-100</td>
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<tr>
<td>A-</td>
<td>90-93</td>
</tr>
<tr>
<td>B+</td>
<td>87-90</td>
</tr>
<tr>
<td>B</td>
<td>83-87</td>
</tr>
<tr>
<td>B-</td>
<td>80-83</td>
</tr>
<tr>
<td>C+</td>
<td>77-80</td>
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<tr>
<td>C</td>
<td>73-77</td>
</tr>
<tr>
<td>C-</td>
<td>70-73</td>
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<tr>
<td>D+</td>
<td>67-70</td>
</tr>
<tr>
<td>D</td>
<td>63-67</td>
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<tr>
<td>D-</td>
<td>60-63</td>
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<tr>
<td>E</td>
<td>&lt;60</td>
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</tbody>
</table>

Summer 2015
Schedule of Instruction
A detailed lecture outline will be posted online or given to the students in class. The general schedule is:

<table>
<thead>
<tr>
<th>Day</th>
<th>Time</th>
<th>Activity</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wednesday</td>
<td>2:00pm-6:00pm</td>
<td>Lecture and Field work</td>
<td>ACMF Classroom and Forest</td>
</tr>
<tr>
<td>Thursday</td>
<td>8:00am-12:00pm</td>
<td>Lecture</td>
<td>ACMF Classroom</td>
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<tr>
<td></td>
<td>12:00pm-1:00pm</td>
<td>Lunch (bring your own)</td>
<td>ACMF</td>
</tr>
<tr>
<td></td>
<td>1:00pm-5:00pm</td>
<td>Field Exercises</td>
<td>ACMF</td>
</tr>
<tr>
<td>Friday</td>
<td>8:00am-12:00pm</td>
<td>Lecture</td>
<td>ACMF Classroom</td>
</tr>
<tr>
<td></td>
<td>12:00pm-1:00pm</td>
<td>Lunch (bring your own)</td>
<td>ACMF</td>
</tr>
<tr>
<td></td>
<td>1:00pm-5:00pm</td>
<td>Field Exercises</td>
<td>ACMF</td>
</tr>
<tr>
<td>Saturday</td>
<td>8:00am-12:00pm</td>
<td>Lecture</td>
<td>ACMF Classroom</td>
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<tr>
<td></td>
<td>12:00pm-1:00pm</td>
<td>Lunch (bring your own)</td>
<td>ACMF</td>
</tr>
<tr>
<td></td>
<td>1:00pm-5:00pm</td>
<td>Field Exercises</td>
<td>Offsite</td>
</tr>
<tr>
<td>Sunday</td>
<td>8:00am-10:00am</td>
<td>Lecture</td>
<td>ACMF Classroom</td>
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<td></td>
<td>10:00am-1:00pm</td>
<td>Field Exercises</td>
<td>ACMF</td>
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<td>Adjourn</td>
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Accommodations for Student with Disabilities
Students requesting classroom or laboratory 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.

Academic Honesty
As a result of completing the registration form at the University of Florida, every student has signed the following statement: “I understand that the University of Florida expects its students to be honest in all their academic work. I agree to adhere to this commitment to academic honesty, and understand that my failure to comply with this commitment may result in disciplinary action, up to and including expulsion from the University”. We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity.

UF Counseling Services
Resources are available on campus for students having personal problems or lacking clear career and academic goals, which interfere with their academic performance. These resources include:

1. University Counseling Center, 301 Peabody Hall, 392-1575, personal and career counseling;
2. Student Mental Health, Student Health Care Center, 392-1171, personal counseling;
3. Sexual Assault Recovery Services (SARS), Student Health Care Center, 392-1161, sexual assault counseling; and
4. Career Resource Center, Reitz Union, 392-1601, career assistance and counseling.

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.