

**COURSE SYLLABUS**  
**INTRODUCTION TO HYDRIC SOILS**  
**SWS 5247**  
**Spring 2016**  
**2 credits**

**I. ENROLLMENT CAP: 20**

**II. COURSE PREREQUISITES:** A knowledge of chemistry, hydrology, and soils is expected.

**III. COURSE DESCRIPTION:** Introduction to hydric soils as part of the wetland ecosystems. This course will cover topics such as basic concepts in soil as related to hydric and non-hydric soils; definition and history of wetlands in the United States; what the criteria and hydric soil indicators are and how to use them in the field; a discussion of hydric soils in the United States by Land Resource Regions; whole landscape hydrology and its application to restore or create wetlands; protocol for monitoring hydric soils in the field; using Soil Taxonomy to identify potential hydric soils; understand special conditions for hydric soils; and a dialogue on regulations, mitigation, and laws associated with hydric soils. As much as possible all instruction will be in accordance with the National Technical Committee for Hydric Soils.

**IV. COURSE OBJECTIVES:**

- A. To acquaint students with soil science terminology used to describe hydric and non-hydric soils
- B. To appreciate the history of wetlands and hydric soils
- C. To identify and describe redoximorphic features in soils
- D. To define wetlands and the role hydric soils play
- E. To understand the criteria and indicators used for hydric soils
- F. To be able to use the hydric soil indicators
- G. To be able to used the hydric soil national list
- H. To be able to identify the hydric soil indicators in the field to delineate wetlands
- I. To use field techniques/equipment to monitor soil water tables
- J. To understand hydric soils in special conditions

**V. COURSE FORMAT:** Lecture material will be delivered via E-Learning Canvas.

**VI. INSTRUCTOR:**

Mary E. Collins

Phone: 563-245-3754

Email: [mec@ufl.edu](mailto:mec@ufl.edu)

Office: On the web at [lss.at.ufl.edu](http://lss.at.ufl.edu)

Office Hours: Available via email, phone, and chat sessions

**VII. COURSE WEBSITE:** lss.at.ufl.edu login using your Gatorlink username and password.  
You will see this course listed under e-learning.

**VIII. INFORMATION ON WEBSITES and SUGGESTED TEXTBOOK:**

Wetland Soils by J.L. Richardson and M.J. Vepraska. 2001. Lewis Publishers

Field Indicators of Hydric Soils in the United States - [ftp://ftp-fc.sc.egov.usda.gov/NSSC/Hydric\\_Soils/FieldIndicators\\_v6\\_0.pdf](ftp://ftp-fc.sc.egov.usda.gov/NSSC/Hydric_Soils/FieldIndicators_v6_0.pdf)

Information on Hydric Soils - <http://soils.usda.gov/use/hydric/>

National Hydric Soils List - <http://soils.usda.gov/use/hydric/lists/state.html>

Field Book for Describing and Sampling Soils - [ftp://ftp-fc.sc.egov.usda.gov/NSSC/Field\\_Book/FieldBookVer2.pdf](ftp://ftp-fc.sc.egov.usda.gov/NSSC/Field_Book/FieldBookVer2.pdf)

Keys to Soil Taxonomy - [http://soils.usda.gov/technical/classification/tax\\_keys/](http://soils.usda.gov/technical/classification/tax_keys/)

**XI. LECTURE MATERIALS and HANDOUTS:** Lecture material, handouts, and assignments will be available via the website. This DE course has been structured to provide the students with similar lecture materials as the on-campus course. Therefore, some of the lecture material (modified, used with permission) is from Wade Hurt (instructor of the on-campus course), Soil and Water Science Department and others.

**X. CLASS ATTENDANCE:** Chat sessions are not mandatory, but you are expected to make an effort to attend as many as possible. Students are expected to spend the time necessary on each section to successfully complete this course in a semester. Students must complete all material presented. This course is designed to enable the student to learn as much as the student wants to study.

**XI. GRADING SYSTEM:** There will be no exams, but rather assignments. Assignments must be completed and turn-in on time in the proper format. Each day the assignment (if accepted) is late, 5 points will be deducted.

6 Assignments @ 100 points each	600 points
Project @200 points	<u>200 points</u>
Total Points	800 points

Final Grade Determination Based on a total of 800 points:

A =  $\geq$  744 points

A- = 743 - 720 points

B+ = 719 - 696 points  
B = 695 - 664 points  
B- = 663 - 640 points  
C+ = 639 - 616 points  
C = 615 - 584 points  
C- = 583 - 560 points  
D+ = 559 - 536 points  
D = 535 - 504 points  
D- = 503 - 480 points  
E = ≤ 479 points

**PROJECT:** A project (approved by the instructor) for **200 points** will be turned-in **MONDAY, April 11**. You may turn it in before that date if you wish. The project **WILL NOT** be accepted after the posted date and time. All projects must be approved by the instructor by/on **MONDAY, Feb 15**. Submit an outline of your project by the deadline. The following is a suggested list of projects.

Interview – You may want to interview a person who is actively engaged in hydric soil determinations or wetland identification. This person could be in research or work for a private business or a regulating agency. The interview must be FACE-TO-FACE. More information about the interview will be given when you receive permission from the instructor.

Field Exercise – You may have a wetland close to your home. Get permission from the owner and identify and delineate the extent of the hydric soils. Document your field exercise with pictures and/or video. More information about the field exercise will be given when you receive permission from the instructor.

Research Paper – Pick a topic of interest concerning hydric soils and write a research paper of approximately 10 pages. More information about the research paper will be given when you receive permission from the instructor.

Presentation – Create a presentation on an area of interest related to hydric soils. This presentation could be a powerpoint presentation which could be posted on the course website. The topic for the presentation may range from a past or present legal issue concerning hydric soils, creating a DE lecture on some aspect in hydric soils, to field techniques used to determine hydric soils. More information about the presentation will be given when you receive permission from the instructor.

Video – Create a 5 to 7 minute video on hydric soils. This video should be made to be viewed by a broad audience with the potential of being uploaded to the course website and e.g. YouTube. More information about the video will be given when you receive permission from the instructor.

Others – There may be project not listed above that you would be attracted to and wish to pursue. Advice on what you propose will be given when you receive permission from the instructor.

## UNIVERSITY POLICIES

### Grades and Grade Points

For information on current UF policies for assigning grade points, see <https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>

### Absences and Make-Up Work

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/](http://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/](http://www.crc.ufl.edu/)

## 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/](http://www.dso.ufl.edu/drc/)

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.

**COURSE OUTLINE**  
**SWS 5247**  
**Spring 2016**

- I. Introduction to Hydric Soils
  - Introduction to Course
  - Introduction to General Concepts
  
- II. Basic Soil Concepts
  - Soil Horizons – Masters and Subordinate Horizons
  - Soil Color – How it is determined and what it means
  - Soil Particle Sizes, Texture, and Textural Triangle
  - Soil Drainage & Redoximorphic Features
  - Concepts of Soil Classification
  
- III. History of Wetlands and Hydric Soils and Definition of Wetlands
  - Definitions of Wetlands
  - History of Wetlands
  - History of Hydric Soils
  - Regulations, Mitigation, and Laws associated with Hydric Soils
  
- IV. Redox Soil Chemistry
  - Chemistry of Water
  - Redox Reactions
  - Redoximorphic Features
  - Soil Color and Oxidation/Reduction
  - Measuring Reduction in Soils
  - Redox Potential
  - Factors Controlling Reduction Features in Soils
  - Redox Depletions
  
- V. Criteria and Indicators of Hydric Soils in the United States
  - Land Resource Regions
  - Hydric Soil Criteria and National List of Hydric Soils
  - All Soil Textures Indicators
  - Sandy Soils Indicators
  - Loamy and Clayey Soils Indicators
  - Delineation of Hydric Soils
  
- VI. Field Instruments to Monitor Hydric Soils
  - Construction, Installation, and Use of Water Wells
  - Construction, Installation, and Use of Piezometers
  - Construction, Installation, and Use of Platinum Electrodes

VII. Whole Landscape Hydrology Indicators: Application to Restore or Create Wetlands  
Hydric Soil Indicators Related to Morphological Features  
Non-hydric Soils Related to Morphological Features

VIII. Using Hydric Soil Indicators in Disturbed and Altered Hydric Soils to Characterize Regulatory Wetlands  
Vegetative Disturbance  
Filled Disturbance  
Land Leveling Disturbance

IX. Soil Taxonomy and Possible Hydric Soils  
Categorical Levels  
Wet Suborders  
Interpreting Taxonomic Names  
Examples of Subgroups