

ESP 303 - Wetlands Ecology

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Welcome to wetlands ecology! Wetlands are unique features of the landscape, with disproportionately large ecosystem importance relative to their small total area. Wetlands are also some of the most imperiled ecosystems in the world and are rapidly disappearing. In North American, wetlands preservation and restoration is both legislated and hotly disputed. The goals of this course are to:

- Introduce you to the basic chemistry, hydrology and biology of wetlands
- Introduce you to the large variety of wetland types throughout the world
- Explore Maine wetlands
- Explore the many ecosystem functions delivered by wetland systems
- Explore the art and science of wetland restoration and creation
- Introduce you to the process of wetlands delineation
- Highlight the numerous sources for wetlands information on the web, in libraries, and through public talks
- Provide hands-on experience in researching wetlands information for local sites

Course Basics

Time & location: 11-1:30 pm Fridays in 205 Bailey Hall (we'll use 213 Bailey for hands-on demos)

Text: **Wetlands (3rd Edition)**. Several other critical manuals are available on the web and will be linked via Blackboard.

Attendance Policy

Because this class meets only on Fridays for the equivalent of 2 lecture periods, it is critical that you attend all classes (your attendance will be reflected in your grade).

Blackboard and class communications

Because our class only meets on Fridays, I often communicate via email and post documents, assignments, articles, etc, on Blackboard (<https://www.courses.maine.edu/webapps/login/>). To contact the class I will use the class list generated by Blackboard which uses the UMET student email accounts. **Please make sure you have activated your UMET email account (see <http://mail.maine.edu/>) and, if you use another email account on a daily basis, be sure to set your UMET account to forward to your everyday account (see the “Change your UMET account mail forwarding” option at <http://mail.maine.edu/>).**

Class requirements

Daily attendance and class participation 10% *Includes preparation for discussions*

Professional activities 15%

An important aspect of being a professional wetlands ecologist is attending talks or seminars or meetings. You must attend 2 talks and write a short 1 page summary and reaction to each. Many talks, etc will satisfy this requirement: Maine Wetland ecology meetings, water resources meetings, Town planning meetings, etc... If you hear of a meeting, please share!

Semester-long Wetland Research Project (individual) 20%

Semester-long Class Project (group) 20%

Raymond/Gray Site or Newcastle/Edgecomb Sherman Lake Site.

Midterm exam 15%

Final exam 20%

Two Saturday field trips Extra credit (up to an additional 10%)

to Wells Estuarine Reserve and TBA: these field trips are not mandatory but highly recommended. We will meet at the field site. You will be required to pass in field notes and other documentation for each trip.

Lectures

The schedule may change depending on current events or interests, and updates will be posted on Blackboard. **You are responsible for the assigned readings.**

Date/Lec#	Topic	Readings	Assignments/activities
Jan 20 th Lec 1	Wetlands definitions Wetlands classifications systems (see http://www.npwrc.usgs.gov/resource/1998/classwet/classwet.htm)	Chapt 1 & 2 Chapt 21 (737-744; 751-754)	Discuss • Individual Wetland Research Project. • Group Project.
Jan 27 th Lec 2	Wetland hydrology	Chapter 5 (107-153)	• Turn in Map & Basic Info for individual wetlands project.
Feb 3 rd Lec 3	Wetland hydrology, con't: examples	Marshes & Swamps (383-384, 474-481) Peat Bogs (423-435) Riparian ecosystems (520-532) Tidal marshes (273-276, 311-313, 340-344)	
Feb 10 th Lec 4	Soil & biogeochemistry (see http://soils.usda.gov/use/hydric/)	Background 155-156 Wetland soils 156-164 Hydric Soils Manual (pgs TBA)	• Turn in Background on Group Project Site.
Feb 17 th Lec 5	Soil & biogeochemistry	O ₂ & redox 165-170 pH 170	
Feb 24 th	WINTER BREAK		
Mar 3 rd Lec 6	Soil & biogeochemistry	Nitrogen 171-173 Fe, Mn, S, C, P 173-187 Chemical budgets (187-198)	• Turn in Hydrology & Soils Info on individual wetland project.

Mar 10 th Lec 7	IN-CLASS MIDTERM EXAM & Vegetation Intro	Readings TBA	
Mar 17 th Lec 8	Vegetation: Plant adaptations	Plant adaptations 207-224	• Turn in maps, background data, etc for Group Project
Mar 24 th Lec 9	Vegetation in specific wetland types	Readings taken from numerous chapters	
Mar 31st	SPRING BREAK		
Apr 7 th Lec 10	Ecosystem development & function	Background 231-232 Succession, seedbanks, plant communities 232-247	• Turn in Individual Wetland Assessment & Field Report
Apr 14 th Lec 11	Ecosystem development & function	Productivity, decomposition, organic matter export	
Apr 21 st Lec 12	Wetland creation & restoration	Intro, definitions, rationale 653-668	• Turn in Group Project Draft
Apr 28 th Lec 13	Wetland creation & restoration	Approaches & methods 668-686	
May 5 th Lec 14	Wetland delineation	Chapt 21 754-758	• Group presentations • Turn in Group Project Final Version
Final Exam	Scheduled for end of final exam period... 12 May 2006 most likely – can we schedule earlier?		

Other Important Information:

Disability Accommodations

If you need course accommodations because of a disability, please make an appointment with me or with the Office of Support for Students with Disabilities (780-4706) as soon as possible.

Academic Integrity

Plagiarism, cheating, and falsification of information are violations of academic integrity that will not be tolerated. Please check the USM Office of Community Standards website (www.usm.maine.edu/ocs/) for official definitions of these practices. If you are unsure if a given assignment is meant to be group work or individual effort, please ask before you begin.