Wetland Ecology and Management

Biosc 1310

Pymatuning Lab of Ecology, Session 1, May 2012

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Primary Course Objectives

(1) Gain an appreciation of the biophysical structure of wetlands, the major ecological processes that occur in wetlands, and the environmental factors that control the structure and function of wetland systems.

(2) Acquire an understanding of the responses and feedbacks of wetlands to environmental variability and change at multiple temporal and spatial scales.

(3) Become familiar with wetland management and restoration techniques, and gain experience with field methods used to delineate, classify, and study wetlands.

Texts

Required

- (M&G) Mitsch & Gosselink. 2007. *Wetlands.* 4th Edition John Wiley and Sons.

Optional (important readings will be provided)

- (Mitsch et al.) Mitsch, Gosselink, Anderson, & Zhang. 2009. *Wetland Ecosystems.* John Wiley and Sons.
- (C) Charman, D.J. 2002. *Peatlands and Environmental Change.* John Wiley and Sons.

Assessment and Assignments

Midterm exam – 20% of course grade
Final exam – 30% of course grade
Participation in discussions/activities – 10% of course grade
Homework assignments, plant collection, field exercises – 40% of course of grade

General course structure

Lectures and literature discussions will occur during most mornings. Field activities will take place most afternoons. We may also have one or two day-long field trips.

Very Tentative Schedule of topics

DATE	TOPICS	READINGS*
WEEK 1: WETLANDS & WETLAND SCIENCE		
Monday	**Introduction to wetlands, wetland laws, and wetland functions**	M&G, Ch 1-3 M&G, Ch 14
Tuesday	**Overview of wetland classification, delineation, and mapping**	M&G, Ch 14 M&G, Ch 8

Wednesday	**Wetland hydrology**	M&G, Ch 4
Thursday	**Wetland biogeochemistry**	M&G, Ch 5
Friday	**Adaptations of wetland biota.**	M&G, Ch 6
WEEK 2: COMMUNITY & ECOSYSTEM ECOLOGY OF WETLANDS		
Monday	**Coastal wetlands**	Mitsch et al., Ch 2
Tuesday	**Freshwater marshes**	Mitsch et al., Ch 3
Wednesday	**Freshwater swamps and riparian wetlands** **MID-TERM EXAM**	Mitsch et al., Ch 4
Thursday	**Peatlands and peatland environmental archives**	C, Ch 1-3 M&G, Ch 7
Friday	**Wetland ecosystem development**	C, Ch 6
WEEK 3: GLOBAL CHANGE AND WETLANDS		
Monday	**Climate change, wetlands, and wetland-environment feedbacks**	M&G, Ch 10 C, Ch 9
Tuesday	**Human impacts on wetlands, wetland restoration & creation**	M&G, Ch 9 C, Ch 10 M&G, Ch 12 C, Ch 11
Wednesday	**Wetland restoration and treatment wetlands**	M&G, Ch 12, 13
Thursday	**Future of wetlands**	
Friday	**Final exam**	

* M&G = Mitch and Gosselink (2007), C = Charman (2002)
Charman (2002) readings and additional handouts/readings will be provided