

**Instructor:**

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Catalog Description

Defining and classifying major wetland ecosystems, formation of wetlands, wetland functions and values; wetlands ecological engineering and management; and integrating wetlands into developing landscape. Opportunity for field trip(s) to natural and/or altered wetlands.

Course Objectives

- ❖ Understand the physical, chemical, biological, and ecological processes that occur within, around, and among wetlands.
- ❖ Understand how structure and processes relate to wetland function.
- ❖ Identify and discuss the variability of structure and function in wetland systems.
- ❖ Understand the effects of human interactions with wetlands.

Course Text

Mitsch, W.J. and J.G. Gosselink. 2007. Wetlands, 4th ed. John Wiley & Son, Inc., NY

Assignments -Each student will select a wetland resource, be it defined as a major wetland type, by a geographic area or political boundaries, by a watershed, etc. All three homework assignments will be based on the selected wetland resource.

Assignment #1 - Wetland Background & Diagram

Construct a profile detailing background information on the wetland resource (e.g., geographic location, size, uses, etc.) Present a map of the wetland resource. Present a systems diagram of the wetland resource.

Assignment #2 - Wetland Profile

Present a detailed wetland profile including detailed and scientific descriptions of soils, hydrology, flora, and fauna. Include images (e.g., photos, line drawings) of the ten most common species of flora and ten most common species of fauna providing common and scientific names and descriptions (e.g., size, color, habitat requirements, etc.).

Assignment #3 - Wetland Ecology Research

Present a concise 'state-of-the-current-knowledge' for the selected wetland resource. What has been studied? What are the major outstanding/unanswered research questions? This will require a literature search in the peer-reviewed scientific literature. Further, present a means to address at least one of the major outstanding research questions.

Course Schedule

<u>Week</u>	<u>Topic</u>
1	Course Overview/Introduction Chs. 1-2 (M&G)
2	Wetland Resources/Ecosystem Services Ch. 3 (M&G); Chokkalingam et al. 2007; Ewel 1990
3-4	Wetland Hydrology Ch. 4 (M&G); Carr et al. 2006; Mazda and Ikeda 2006 Assignment #1 – Wetland Background and Diagram - - Due (week 4)
5-6	Wetland Soils Ch. 5 (M&G) pgs. 163-172; Ravit et al. 2003; Wolfe and Klironomos 2005 Test #1 (week 6)
7-8	Biogeochemistry Ch. 5 (M&G) pgs. 173-206; DeCant 2008; Verhoeven et al. 2001
9-10	Wetland Biota Ch. 6 (M&G); Bagstad et al. 2005; Montalto and Marchese 2005 Assignment #2 – Wetland Profile (week 10)
11-12	Wetland Ecosystem Development Ch. 7 (M&G); Casey and Ewel 2006; Suding et al. 2004 Test #2 (week 12)
13	Measuring Wetlands (Evaluation & Valuation) Ch. 11 (M&G); Mahan et al. 2000; Ragkos et al. 2006
14	Wetland Creation & Restoration Ch. 12 (M&G); Hobbs et al. 2006; Simenstad et al. 2006 Assignment #3 – Wetland Ecology Research (week 14)
15	Treatment Wetlands Ch. 13 (M&G); Kivaisi 2001
16	Course Overview/Conclusion Test #3 (week 16)