

Florida International University
Department of Earth and Environment and
Department of Biological Sciences

PCB 4452-U01 (90016)
Introduction to Wetlands Ecology and Management

Fall 2016; PG5 155; Tu-Th 6:25 - 7:40 p.m.

Instructors:

Professor:	Dr. Jennifer Richards	Dr. Mike Ross	Dr. Leonard Scinto
Office:	OE 233	AHC5 367	AHC5 368
Phone:	305-348-3102	305-348-1420	305-348-1965
e-mail	richards@fiu.edu	rossm@fiu.edu	scintol@fiu.edu
Office Hrs:	M, 12-3 p.m. or by appointment	W, 10 a.m. - noon or by appointment	T Th, 3:30 – 5:00 p.m. or by appointment

Course Description:

This is an upper-division undergraduate science course that introduces principles of ecology and management as applied to freshwater and estuarine wetlands. This course provides students an introduction to: the extent, diversity, definitions and general features of wetlands of the world; wetland science; and wetland management including policies, conservation and uses of wetlands.

Course Objectives:

Introduce students to the application of ecological principles in wetland ecosystems, to the diversity and functional values of wetlands world-wide, and to best-management practices for wetland conservation and restoration.

Learning Outcomes:

After mastering the material in this course, students will have a basic understanding of wetland hydrology and biogeochemistry, flora and fauna, and functional attributes. Students will also understand important issues to consider for wetland management, conservation, and restoration and will gain an appreciation of the myriad ecosystem services provided by wetlands to humankind.

Required Text:

Mitsch, W. J. and J. G. Gosselink. 2015. Wetlands, 5th Edition. John Wiley & Sons, Hoboken, NJ. 736 pp. (ISBN: 978-1-118-67682-0).

Additional readings from other sources and the primary literature will also be assigned.

Web Access

Access to the FIU online **Blackboard Learn** is required for this class. Students will use **Blackboard Learn** to obtain updates to the syllabus, send email and review grades. Lecture presentations will be posted on **Blackboard Learn** soon after class. Lack of Internet access is not an excuse for missed material. Access Blackboard Learn through <http://online.fiu.edu/login> and follow login instructions.

This syllabus will be updated as needed. Please refer to Blackboard Learn for updates and announcements.

Course Grading:

	Pts	Grade	Points
EXAM I	100	A	≥ 270
EXAM II	100	B	≥ 240-269
EXAM III	100	C	≥ 210-239
		D	≥ 180-209
Total	300	F	< 180

Grades will be based on three hour exams. Exams will be graded on a scale of 90-100=A, 80-89=B, 70-79=C, 60-69=D, and <60=F. Exams are worth 300 points total (100 pts. each). Final grades will be assigned based on the percentage of the 300 possible points.

Course Information:

Attendance is mandatory and expected. Formal attendance checks will be randomly conducted starting during the second week of the semester. Students are responsible for gaining an understanding of materials presented during lectures, in assigned readings or in posted Blackboard Learn lectures. All material presented in class, available in the course site on Blackboard Learn or in the assigned readings can be considered for an exam.

Academic Honesty etc: Cheating is a very serious form of academic misconduct and will not be tolerated. University policies for academic misconduct as given in the Student Handbook (<http://www.fiu.edu/student.htm>)(p. 140) are strict, and the results of cheating can be a failing grade or, ultimately, expulsion from the University.

Sidebar conversations will not be permitted during class. If you need to discuss something with a classmate, meet outside of class. Students who disrupt the class will be asked to leave.

Electronic Devices

Cell phones, I-Pods, or similar devices must be turned **OFF** during class.

Early Alert

In an effort to help you succeed in your academic courses, FIU utilizes an Early Alert system. Instructors are now able to notify students' academic advisors if there are concerns about class performance. If an alert is submitted, your academic advisor will send you a message via your Student Dashboard (accessed via your MYFIU page) to discuss ways to improve your performance. Please respond to any communication you receive from your academic advisor about an early alert. Our goal with this program is to help you to be successful by identifying any issues as early on as possible to address them.

Other

An Incomplete grade will only be given out in accordance with FIU grading guidelines. The majority (>75%) of the course work must be completed before an incomplete grade will be considered. Students who have issues that prevent them from completing the course should petition the Registrar for late withdrawal from the course.

If a student has a disability and needs assistance with class, please contact the Disability Resource Center (GC 190; 305-348-3532, drc@fiu.edu). It is the responsibility of each student to work with the Center and Instructor to make arrangements for the classroom and course activities as needed for their accommodations.

Tentative Schedule

#	Date	Topic	Lecturer	Readings
1	23-Aug	Intro -What is a wetland?	All	M & G, Chap. 2
2	25-Aug	Wetlands of the World	Richards	M & G, Chap. 3
3	30-Aug	Cultural attitudes toward wetlands	Ross	Villiesis 1997; pp 1-10
4	1-Sep	Wetland hydrology	Scinto	M & G; Chap. 4
5	6-Sep	Wetland hydrology	Scinto	M & G; Chap. 4 cont.
6	8-Sep	Wetland microbiology and soils	Scinto	M & G; Chap. 5
7	13-Sep	Wetland biogeochemistry (oxygen - redox)	Scinto	M & G; Chap. 5 cont.
8	15-Sep	Wetland Biogeochemistry (C & N cycles)	Scinto	M & G; Chap. 6
9	20-Sep	Wetland Biogeochemistry (P and other nutrients)	Scinto	M & G; Chap. 6 cont.
10	22-Sep	Exam 1		
11	27-Sep	Wetland plant communities	Richards	M & G, Chap. 7
12	29-Sep	Wetland ecosystems	Richards	M & G, Chap. 7
13	4-Oct	FW wetland biota	Richards	M & G, Chap. 10
14	6-Oct	FW wetland biota	Richards	M & G, Chap. 10

15	11-Oct	Peatlands	Richards	M & G, Chap. 12, Rydin & Jeglum, Ch. 2-4
16	13-Oct	Freshwater Swamps	Richards	M & G, Chap. 11
17	18-Oct	Coastal marshes	Ross	M & G, Chap. 8, Carter 1988; pp 335-346
18	20-Oct	Mangrove swamps	Ross	M & G, Chap. 9, Lugo et al. 1988
19	25-Oct	Wetland Classification	Richards	M & G, Chap. 13
20	27-Oct	Exam 2		
21	1-Nov	Wetland gradients	Ross	Sanderson et al. 2008; pp 1060-1070
22	3-Nov	Climate change and wetlands	Ross	M & G, Chap. 17
23	8-Nov	Wetland ecosystem services / Values	Scinto	M & G; Chap. 16,
24	10-Nov	Wetlands and Water Quality, Treatment Wetlands	Scinto	M & G; Chap. 19
25	15-Nov	Everglades Predrainage Landscape and Hydrology	Richards	McVoy et al. 2011, selected chapters
26	17-Nov	Wetland restoration, Wetland management	Ross	M & G; Chap. 14, 18
27	22-Nov	Wetland law and regulation	Ross	M & G; Chap. 15
	24-Nov	<i>Thanksgiving Day holiday</i>		
28	29-Nov	Wetland policy	Ross	Pittman 2009; pp 108-127
29	1-Dec	Course wrap-up	All	
30	8-Dec	Exam 3, 5 PM-7PM		

Other references:

Austin, M.P and T.M. Smith. 1989. A new model for the continuum concept. *Vegetation* 83: 35-47.

Batzer, D.P. and R.R. Sharitz (eds). 2006. *Ecology of freshwater and estuarine wetlands*. U. of California Press, Berkeley, CA. 568 pp.

Carter, R. W. G. 1988. *Coastal Environments: an introduction to the physical, ecological and cultural systems of coastlines*. Academic Press, London, UK. 617 pp.

Keddy, P.A. *Wetland ecology: Principles and conservation*. Cambridge University Press, Cambridge, UK. 614 pp.

Lodge, T.E. 2010. *The Everglades handbook: Understanding the ecosystem*. CRC Press, Boca Raton, FL 392 pp.

McVoy CW, Park WA, Obeysekera J, VanArman JA, Dreschel TW. 2011. Landscapes and hydrology of the pre-drainage Everglades. University Press of Florida, Gainesville

Mitsch, W. J. and J. G. Gosselink. 1993. Wetlands, 2th Edition. John Wiley & Sons, Hoboken, NJ. 722 pp.

Mitsch, W. J., J.G. Gosselink, C.J. Anderson, L. Zhang. Wetland ecosystems. 2009. John Wiley & Sons, Hoboken, NJ. 295 pp.

Pittman, Craig and Matthew Waite. 2009. Paving Paradise: Florida's vanishing wetlands and the failure of No Net Loss. University Press of Florida, Gainesville, FL. 351 pp.

Rydin, H. and J. Jeglum. 2006. The biology of peatlands. Oxford University Press. Oxford, UK. 343 pp.

Tomlinson, P. B. 1986. The botany of mangroves. Cambridge University Press, Cambridge UK. 419 pp.

Vilieisis, Ann. 1997. Discovering the unknown landscape: a history of America's wetlands. Island Press, Washington, DC. 433 pp.