

Riverine Ecology

Spring 2015

WIS 6934 - Section 06CA or WIS 4934 - Section 02E7 or FAS 4905/FAS 6932

3 Credits

Course meeting time: Lecture Tuesday and Thursday Period 4 (10:40-11:30 AM)

Lab: Thursday 11:45-6:00 Periods 5-9 (11:45 AM -4:55 PM)

LOCATION: MCCB 3096

OPTIONAL TEXT: *Stream Ecology: Structure and Function of Running Waters* J. D. Allan and M. M Castillo (2nd edition, 1st is fine as well) Springer

REQUIRED READING: *Mirage: Florida and the Vanishing Water of the Eastern U.S.* Cynthia Barnett, 2007, University of Michigan Press (~\$20.00)

INSTRUCTORS OFFICE HOURS: Bill Pine Tuesday 1:00-2:00 (location Campus building 87 "Wetland and Riverine Ecology" building) or by appointment billpine@ufl.edu

Jonathan Freedman Office hours TBD (location 405 McCarty C) jonathanfreedman@ufl.edu

COURSE OBJECTIVES: To become familiar with stream and river ecosystems and the important roles of these ecosystems across the landscape. To examine the physical, biological, and ecological principles that structure lotic ecosystems with particular attention to assessing human impacts on stream and river ecosystems.

CLASS FORMAT: Information will be provided through a combination of lectures, discussions, readings, and labs. Part of one session each week will generally be devoted to a discussion of natural resource issues in the news. Labs will expose student to a variety of lotic ecosystems and provide an opportunity to integrate lecture material with field conditions. Makeup of lectures, labs, assignments missed for legitimate (as identified by UF policy) reasons should be arranged with me.

ATTENDANCE: You are required to attend all lectures and labs. If you will be away from lecture or lab, arrangements must be made with me beforehand. Be on time for lecture and lab.

ACADEMIC HONESTY: As a result of completing the registration form at the University of Florida, every student has signed the following statements: "I understand that the University of Florida expects its students to be honest in all their academic work. I agree to adhere to this commitment to academic honesty and to understand that my failure to comply with this commitment may result in disciplinary action up to and including expulsion from the University."

EXAMINATIONS/GRADING: There are 600 regular points available in this course distributed as follows. There will be 2 exams: Mid-term will be worth 150 points, Final exam 200 points, writing assignments (2) will be worth 100 points each and the lab exercises will be worth a total of 50 points. Makeup exams for excused absences arranged in advance with the instructor will be scheduled and taken during the final week of classes. Detailed information regarding the writing and lab assignments will be presented at a later time.

All segments of the course must be completed to earn a final grade.

Letter Grade	% Of Total Points
A	90% or 540 points
B	83% or 498 points
C	73% or 438 points
D	63% or 378 points
F	<60% or <300 points

STUDENTS WITH DISABILITIES: 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.

This is tentative and subject to change, check this page for frequent updates

Week	Date	Lecture Topics	Readings	Other info	Lab (Thursday)
1	Jan 6 Jan 8	Tue: Course introduction Thur: Water status trends and challenges	<i>Mirage</i> : Prologue, Ch 1, Ch 2, Ch 3		Thur Lab: NO LAB
2	Jan 13 and 15	Tue: Basic hydrology Wed: Basic geomorphology	<i>Mirage</i> Ch 4, Ch 5, Ch 6 <u>Ward et al. 2002. <i>Verh Internat. Verein. Limnol.</i> 28:443-450.</u> <u>Richter et al. 2003 Sustainable water management</u> <u>Service 2004</u>		Thur. Lab: FL underwater journey, Hike to river rise
3	Jan 20 and 22	Tue: Abiotic I Thur: Abiotic II	<i>Mirage</i> Ch 7, Ch8, Ch 9 <u>Canfield and Hoyer 1988 <i>CJFAS</i> 45:1467-1472</u> <u>Hoyer et al. 2004 <i>Hydrobiologia</i> 528:31-43</u> <u>Benke 1984</u> <u>Natural flow</u>		Thur Lab: NO LAB
4	Jan 27 and 29	Tue: Begin natural flow paradigm Thur: Guest Lecture:, 10:00, <u>Cynthia Barnett</u> , <i>Mirage</i> author (tentative)	<i>Mirage</i> Ch 10, Ch 11, Ch 12 Natural Streams <u>1</u> , <u>2</u> <u>Portz and Tyus 2004</u> Revisit Cadillac Desert		Thur Lab: Ichetucknee River
5	Feb 3 and 5	Tue: Primary producers and Detrital Energy Thur: Autochthonous and allochthonous production (alt who cares if the river runs dry)	Jackson et al. 2001 <i>Ecol App</i> 11:1027-1045; Postel et al. <i>Ecol App</i> 10:941-948 <u>Dodds and Biggs 2002</u>		Thursday Lab: No Lab <u>WRITING ASSIGNMENT ONE</u>
6	Feb 10 and 12	Tues: Trophic relationships and species interactions Thur: Leave for Okefenokee NWR	McIntosh and Townsend. 1996 <i>Oecologia</i> 108:174-181 Huryn 1998 <i>Oecologia</i> 115:173-183 Fossil Creek		Thur Lab: Suwannee River headwaters Okefenokee National Wildlife Refuge

7	Feb 17 and 19	Tue: Food webs Thur: Food webs continued (lessons learned from experimental floods)	Kennedy and Hobbie. 2004. FW Biology 49:65-76 Cole et al. 2006. Ecological Letters 9:558-568 Lewis et al. JNABS 20:241-254 Pace et al. 1999. TREE 14:483-488 <u>Kwak and Waters 1997</u>		Thur: NO LAB
8	Feb 24 and 26	Tue: Predation Thur: Exam One	<u>HSS - World is Green</u> <u>Power et al.</u> <u>Gilliam and Fraser</u>		Thur Lab: Policy and planning
9	Mar 3 and 5	Tue: No class SPRING BREAK Thur: No class SPRING BREAK			Thur Lab: No Lab SPRING BREAK
10	Mar 10 and 12	Tue: RCC NO CLASS	SPRING BREAK NO CLASS		SPRING BREAK NO CLASS
11	Mar 17 and 19	Tue: Dr. Jim Williams, (tentative) Freshwater mussel biology and zoogeography in the southeastern Thur: Field trip to Jim Woodruff Dam??	<u>Background info on mussels</u>		Thur Lab: Jim Woodruff Dam field trip
12	Mar 24 and 26	Tue: RCC, FPC Thur: SDC, NFP	Vannote et al. 1980. CJFAS 37:130-137 Minshall et al. 1985. CJFAS 42: 1045-1055. <u>Junk 1989</u> <u>Junk and Wantzen 2002</u> <u>Poff et al. 2003 Front Ecol Environ 1:298-306</u>		Thur Lab: Rainbow River (alt middle Suwannee)
13	Mar 31 and Apr 2	Tue: NFP Thur: Leave for Lower Suwannee NWR	<u>Ward and Stanford</u> <u>Anderson et al. 2004</u> <u>Poff et al. 1997. BioScience 47:769-787</u>		Thur Lab: Lower Suwannee River NWR with Dr. John Kasbohm (all day)
14	Apr 7 and 9	Tue: Fish Habitat	Rosenfield TAFS 132:953-968		Thur Lab: No Lab

		Thur: Fish habitat	Benke 1985		
15	Apr 14 and 16	Tue: ACF case history Thur: ACF vs. water in the west			Thur Lab: ACF case history exercise with Steve Leitman (tentative)
16	Apr 21 and 23	Tue: AMP Thur: AMP	AMP papers zip file		Thur Lab: Final Exam

READING ASSIGNMENTS: Readings recommended on each topic should be read prior to class so that the topic can be discussed.

Lab information

Updates on lab activities will be provided during the Tue lecture. Lab activities are often weather or river stage dependent so we must be flexible in our plans.

What to bring with you in lab:

Field notebook and pencils

Towel

Water

Hat

Lunch and snacks (coolers provided)

Mask, snorkel, fins (if you have them)

Sunscreen

Long socks (for waders)

Raingear

Camera (optional)

Change of clothes

Waterproof bag (optional)

Swimsuit (depending on activity)

Field clothes should be worn on field trips. Each week there is a good chance of getting wet and dirty so plan accordingly with the weather. Safety is paramount in all field activities.

Labs are designed to both introduce students to a wide range of riverine ecosystems and to explore the use of various sampling methodologies for riverine fish communities. During each field trip you should take notes on what we are doing, you should also ask yourself the following:

Where are we and why are we here?

Where is the water coming from and where is it going?

What are the dominant physical characteristics (color, vegetation, floodplain, etc.?)

What flora and fauna are visible and what does this tell us?

Policy issues, who uses the water, who regulates the water, who makes decisions about the water?