

**Freshwater Ecology (BIOL 481)**  
**Fall 2008**  
**SCX5, MWF 10:30 AM - 11:20 AM**

**Instructor:** Dr. John Hutchens

**Office:** SCI 126B

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**Office hours:** MWF 9:30 – 10:30 AM; MF 11:30 AM – 2:00 PM

**Course web page:** <http://ww2.coastal.edu/jjhutche/bio481.htm>

**Co-requisite:** Freshwater Ecology Laboratory (BIOL 481L)

**Prerequisite:** Principles of Ecology (BIOL 370) or its equivalent

**Required text:** Dodds, W.K. 2002. Freshwater Ecology: Concepts and Environmental Applications. Academic Press.

**Objectives:** My objective is to provide you with an understanding of the applied and theoretical aspects of freshwater systems. Freshwater ecology is a diverse field that studies how organisms in streams, lakes, wetlands, and groundwater interact with their wet environment. Consequently, we will cover a wide range of topics that will allow you to understand and appreciate how freshwater ecologists see the world, what kinds of questions they ask, and the diversity of freshwater organisms and environments.

**Student Learning Outcomes:** Students who successfully complete this course will be able to:

1. Describe the hydrologic factors operating in lakes, streams, and wetlands.
2. Describe the biodiversity within lakes, streams, and wetlands.
3. Describe how nutrients cycle in lakes, streams, and wetlands.
4. Describe dynamics of temperature and oxygen in lakes, streams, and wetlands.
5. Describe how community structure in lakes, streams, and wetlands is affected by predation, competition, and mutualism.
6. Describe patterns in ecosystem structure and function in lakes, streams, and wetlands.
7. Describe how landscapes influence the ecology of lakes, streams, and wetlands.

**Grading:** Your grade for Freshwater Ecology is determined by your performance in both lecture and lab. The lecture portion comprises 73% of your grade while the lab portion comprises 27%. You must pass both the lecture and lab portions of this class to receive a passing grade. You receive the same grade for lecture and lab.

Your grade for the lecture portion of this class is based on three lecture exams, a comprehensive final exam, four homework assignments, and class participation. Exams will consist mostly of short answer questions. Exams will cover material from both lecture notes and the book, and include both factual and analytical types of questions. Analytical questions will require you to apply your knowledge as well as interpret data and graphs. Homework assignments will require answering a few questions based on short readings or data analysis. Late homework assignments will be penalized by 10% for each week day they are late.

Cheating and plagiarism will not be tolerated, and a grade of F will be given for the assignment.

## Point Distribution:

Assignment	Points	% of total
Exam 1	100	14%
Exam 2	100	14%
Exam 3	100	14%
Final Exam	100	14%
Homework	100	14%
Participation	30	4%
Lab	200	27%
Total	730	

## Grading scale:

Grade	%	Points
A	90-100	653 - 730
B+	87-89	631 - 652
B	80-86	580 - 630
C+	77-79	558 - 579
C	70-76	507 - 557
D+	67-69	485 - 506
D	60-66	434 - 484
F	0-59	< 434

**Attendance:** Attending lecture is not mandatory, but it is expected and the key to doing well in this class. Attendance is mandatory for exams—make-up exams are only given for university-excused absences (see the CCU 2008/2009 Catalog, pp. 47 for details).

**Learning disabilities:** Students with documented learning disabilities should see me at the beginning of the semester so special arrangements can be made, if necessary, for your success in this course.

**Reminder:** Turn OFF your cell phones before class!

**Schedule:** This schedule is tentative and subject to change.

Week	Dates	Topic	Readings
1	Aug 20 & 22	Introduction; Properties of Water	1, 2
2	Aug 25 – 29	Movement of light, heat, and chemicals in water	2, 3
3	Sep 3& 5; <b>Sep 5: Homework 1 due</b>	<i>Sep 1—Labor Day Holiday</i> Hydrology & Physiography of Groundwater & Wetlands	4, 5
4	Sep 8 - 12	Physiography of Streams	5
5	Sep 15 - 19 <b>Exam 1-Sep 15</b>	Physiography of Lakes	6
6	Sep 22 – 26	Microbes and Plants, Animals	8, 9
7	Sep 29 - Oct 3; <b>Oct 3: Homework 2 due</b>	Biodiversity, General Chemistry and Redox	10, 11
8	Oct 6 & 8	Oxygen and Photosynthesis <i>Oct 10—Student Holiday</i>	11
9	Oct 13 - 17 <b>Exam 2-Oct 13</b>	Carbon	12
10	Oct 20 – 24 <b>Last drop day-Oct 24</b>	Nitrogen, Phosphorus, and Iron	13
11	Oct 27 – 31; <b>Oct 31: Homework 3 due</b>	Nutrient Use and Limitation; Eutrophication	16, 17
12	Nov 3 - 7	Eutrophication; Microbial Ecology	17, 18
13	Nov 10 – 14 <b>Exam 3-Nov 10</b>	Microbial Ecology; Predation and Food Webs	18, 19
14	Nov 17 - 21	Interactions/Communities	20
	Nov 24 - 28	<i>Thanksgiving Break</i>	
15	Dec 1 -5; <b>Dec 3: Homework 4 due</b>	Ecosystems and Landscapes	22, 23
	<b>Wed, Dec 10, 11 AM</b>	<b>Final Exam</b>	