

***Proposed Lecture Syllabus and Class Information***  
***Biology 245***  
***Fall, 2005***

**Instructor: Dr. Steve Baker**  
**Pierce 117**

**COURSE OBJECTIVES:**

1. Students will acquire a basic knowledge of freshwater ecological principles in stream, lake, and wetland ecosystems.
2. Students will learn the skills and techniques needed to identify most aquatic invertebrates to the taxonomic level of genus.
3. Students will learn techniques for evaluating water quality of streams and lakes based on the evaluation of the pollution tolerances of the organisms they contain.
4. Students will put their new knowledge to work by practical, hands-on field investigations of nearby lakes and streams.
5. Students will learn research skills needed to conduct scientific investigations, develop critical thinking skills used to evaluate their data, and present their results to the class.

**COURSE SYLLABUS:**

**This syllabus is tentative and subject to change due to weather or other needs.**

<b><u>Date</u></b>	<b><u>Topic</u></b>
9/1	Course Introduction Bioassay; Project I Overview
9/6	Taxonomy and M and M's
9/8	Introduction to Water Quality/Environmapper
9/13	Water and Your Health
9/15	Aquatic Ecology Case Study
9/20	Student Presentations

	Intro to Scientific Writing
9/22	Introduction to Biomonitoring and Sampling Design Rapid Bioassessment Protocols
9/27	Introduction to Stream Ecology Geomorphology Temperature and Light Influences Stream channel characteristics Riparian Zones
9/29	Life at the Bottom - role of benthos in stream ecosystems Habitat adaptations
10/4	Energy Flow: River Continuum Concept
10/6	Benthic Movements: Drift Colonization Periphyton
<b><i>10/10-10/11</i></b>	<b><i>Fall Break! Go collect!</i></b>
10/13	Student Presentations: Major Insect Orders
10/18	Student Presentations
10/20	Stream Fishes
10/25	<b>Exam I</b>
10/27	Introduction to Lake Ecology-- Classification Temperature and Stability Water Quality
11/1	Bear Creek, Quantitative Sampling / Fish Collection
11/3	Plankton
11/8	Aquatic Macrophytes, Lentic Insects and Fishes
11/10	Introduction to Aquaculture
11/15	Trip to Buford Fish Hatchery

11/17	Aquaculture II, Intro to Fisheries Management
11/22	Fisheries Management/Farm Ponds
<b>11/24-11/26</b>	<b><i>Thanksgiving Holiday</i></b>
11/29	Student Project Presentations: <b>2002 Freshwater Ecology Symposium</b>
12/1	Human Impacts: Eutrophication
12/6	Human Impacts: Sedimentation and Acidification What does that new subdivision <b>really</b> cost?
12/8	Endangered and Exotic Species
12/13	Course wrap-up

## Evaluation:

These are general guidelines for evaluation and may vary somewhat!

Midterm	15%
Final Exam	15%
Project I and Report	7%
Presentation (insect order)	7%
Research Project and Presentation	20%
Aquatic Invertebrate Collection	15%
Lab Quizzes	15%
Field Book, etc.	<u>6%</u>
<b>Total</b>	<b>100%</b>

Plus (minus) grading will be used.

## Miscellaneous Course Information:

- **Text:** An Introduction to the Aquatic Insects of North America, by Merritt and Cummins. Third Edition. This is an identification guide to many of the organisms you will collect. Other identification guides, handouts, and reserve materials will also be available for your review.
- **Learnlink:** A learnlink conference is available and will be very important in this course. It is a useful forum for course information, study tips, open lab times, and field trips by the class or individual class members. You should place it on your desktop.

- **Absence Policy:** The departmental policy will be distributed. Note that excessive absences or tardies can result in a reduced grade for the course.
- **Office Hours:** My office hours will be 9-11 TTh, 11-12 MWF. You will find that I am around almost all day and eager to visit with you at any time. My office is next door to the lab so I am usually able to help out if you have a problem identifying an organism in the lab.
- **Honor Code:** I enforce this strictly. We will discuss in the class specific ways in which you may share work on projects and cite references in research write-up. When in doubt, ask!
- **Health Related Issues:** Weather permitting, we will be outside almost every week. Also, you will be expected to go out on your own with other class members to do your field work. Please let me know confidentially if you have any health problems that might be influenced by these field activities.
- **Cell Phones:** They must be turned off in class/lab. They are welcome on field trips for safety!

### **Additional Notes:**

The student project will consist of a research project conducted **with a lab partner** and presented to the class. It will involve a field oriented project and will include a written report.

An invertebrate collection will be prepared by **each student** throughout the semester. Organisms will include those collected on lab trips, specimens obtained in project work above, but must also include out of class sampling trips taken with another member of your class.

Field book will include notes taken in the field and documentation of your personal sampling trips.

More detailed information about these class components will be distributed at a later date.

## ***Tentative Lab Syllabus / Biology 245 Fall, 2004***

9/6	Introduction to Use of Taxonomic Keys Solution and Bioassay Prep
9/13	Collect: Croom Creek, Land Application Area
9/20	Collect: Yellow River or Alcovy River; Large Stream Sampling
9/27	Lab Day: ID / Collection Prep
<b>10/4</b>	<b>Keying Quiz I</b>
10/18	Bioassessment Investigation Present Results in Class, 10/28
10/25	Lentic Sampling, City Pond or other area lake
11/1	Quantitative Sampling/Fish Collecting Bear Creek
11/8	Buford Fish Hatchery Collections Due@ 12:30 PM
<b>11/15</b>	<b>Keying Quiz 2</b>
11/22	Plankton Investigation
11/29	Open lab or weather buffer
12/6	Semi-Aquatics Leaf Pack Data Analysis
<b>12/13</b>	<b>Final Keying Quiz</b>