Proposed Lecture Syllabus and Class Information
Biology 245
Fall, 2002

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.

Date	**Topic**
8/29	Course Introduction
9/3	Introduction to Taxonomy-- The role of M and M's in Biology
9/5	Aquatic Ecology Case Study
9/10	Presentations: Student Groups Instructor wrap-up / Stream Intro
9/12	Don't drink the water! Basics of stream water quality

9/17	Introduction to Biomonitoring and Sampling Design Rapid Bioassessment Protocols
9/19	Introduction to Stream Ecology Geomorphology Temperature and Light Influences Stream channel characteristics Riparian Zones
9/24	Life at the Bottom - role of benthos in stream ecosystems Habitat adaptations
9/26	Energy Flow: River Continuum Concept
10/1	Benthic Movements: Drift Colonization Periphyton
10/3	Student Presentations : Major Insect Orders
10/8	Student Presentations
10/10	Stream Fishes
10/17	**Exam I – through stream fishes**
10/22	Introduction to Lake Ecology-- Classification Temperature and Stability Water Quality
10/24	Plankton
10/29	Bear Creek, Quantitative Sampling / Fish Collection
10/31	Aquatic Macrophytes, Lentic Insects and Fishes
11/5	Wetland Ecology
11/7	Introduction to Aquaculture
11/12	Trip to Buford Fish Hatchery

11/14	Introduction to Fisheries Management/Farm Ponds
11/19	**Exam 2**
11/21	Student Project Presentations: **2002 Freshwater Ecology Symposium**
11/26	Human Impacts: Eutrophication
11/27-11/29	Thanksgiving Holiday
12/3	Human Impacts: Sedimentation and Acidification What does that new subdivision **really** cost?
12/5	Endangered and Exotic Species
12/10	Course wrap-up

Evaluation:

These are general guidelines for evaluation and may vary somewhat!

Exams 2 @ 10%	**20%**
Final Exam	**15%**
Presentation (insect order)	**5%**
Project and Presentation	**20%**
Aquatic Invertebrate Collection	**15%**
Lab Quizzes	**20%**
Field Book, etc.	**5%**
Total	**100%**

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 8-9 MWF, 9-11 TTh or by appointment at your convenience. 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.

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
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9/3	Introduction to Use of Taxonomic Keys Investigation Basics / Prepare leaf packs
9/10	Collect: Croom Creek, Land Application Area Install leaf packs
9/17	Collect: Yellow River or Alcovy River at Santa Claus House
9/24	Lab Day: ID / Collection Prep
10/1	**Keying Quiz I**
10/8	Bioassessment Investigation Present Results in Class, 10/24
10/22	Lentic Sampling, City Pond or other area lake
10/29	Quantitative Sampling/Fish Collecting Bear Creek
11/5	**Keying Quiz 2**
11/12	Buford Fish Hatchery Collections Due@12:30 PM
11/19	Plankton Investigation
11/26	Open lab or weather buffer
12/3	Semi-Aquatics Leaf Pack Data Analysis
12/10	**Final Keying Quiz**

You should always have, available in the lab, some collection or project material to work on. In the event of high water or severely inclement weather, you must be prepared to use the time in the lab to work on identification.

I will occasionally provide practice organisms for you to key. You may be asked to turn in your results to me to review.