Biology 632  
Ecology Lab, Spring 2003

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Class Time and Location: Tuesday 2:30 - 5:20, Ackert Hall Room 112

Course Description: Laboratory and field experience with ecological problems.

Prerequisites:  
Biology 529 – Fundamentals of Ecology  
Statistics 340 – Biometry (or equivalent)

Course Website: http://courses.ksu.edu/spring2003/BIOL/BIOL632.  This address is case-sensitive, so type it exactly as shown. Check the site for class materials such as the lab manual, data that you must analyze for particular labs, and questions to answer for seven of the labs.  **You will need to download and print out each lab prior to coming to class.**  Additional information will be added throughout the semester, so check back for newly available material a few days before each lab.

Supplementary Text: General Ecology Laboratory Manual, G. W. Cox, 2002. McGraw-Hill.  This text will be available at the bookstore. While you are not required to purchase this book, you likely will find it to be a valuable reference throughout the semester and rest of your scholarly life.

**Tentative Course Schedule**

**January**

21 – Introduction to the ecology laboratory; Lab 1—Managing and manipulating data with Microsoft Excel  
28 – Lab 2—Population Growth in Lemna

**February**

04 – Lab 3—Sampling and community analysis  
11 – Lab 4—Mark-recapture sampling methods  
18 – Lab 5—Life tables and survivorship curves* (tentatively wrap-up Lemna study); plus a short discussion on the independent projects.  
(On your own, please read the supplemental information on Planning an ecological investigation, Communicating science, and Ecological indices and sampling techniques in preparation for Lab 9's scientific report and the independent project later in the semester.)  
25 – Lab 6—Web-based ecological research [Turn in paper copy of your team’s data from Lab 5; Lab 3 questions due]
March
04 – Wrap-up analysis for Lab 5 in computer lab, creating plots (Lab 4 questions due)
11 – Lab 7—Foraging behavior*
  If weather is uncooperative during one of our scheduled outdoor labs, we’ll do this indoor lab, The extinction game.
  (Independent project proposals due; Lab 2 questions due)
18 – SPRING BREAK
25 – Lab 8—Aquatic macroinvertebrates* (Lab 5 questions due)

April
01 – Lab 9—Grasslands and grazers* - Day 1 (Lab 6 questions due)
08 – Lab 9—Grasslands and grazers* - Day 2 (Lab 7 questions due)
16 – Open day for working on your independent projects (Lab 8 questions due)
22 – Wrap-up or continuation of independent projects (Lab 9 report due)
29 – Presentations of independent projects – Day 1

May
06 – Presentations of independent projects – Day 2

Labs with an asterisk (*) indicate that fieldwork will be involved, so dress accordingly!

Grading and Policies

• Exams: There are no exams. Hoo-ray!

• Questions/Data are to be turned in for the following labs:
  Lab 2—Population growth in Lemna
  Lab 3—Sampling and community analysis
  Lab 4—Mark-recapture sampling
  Lab 5—Life tables and survivorship curves
  Lab 6—Web-based ecology
  Lab 7—Foraging behavior

Good answers to these questions are complete but concise. Put some thought into tackling the questions and then type the answers up in your favorite word-processing software. If you need to create figures (scatter plots, histograms, regressions) to display your results (and you should!), be sure to use a program like Microsoft Excel or SigmaPlot so that your results look professional.

• Scientific report: A scientific report must be turned in for Lab 9—Grasslands and grazers. This report will take the form of a short scientific paper. Check out recent issues of the peer-reviewed journal, Ecology (look up QH540. E3 downstairs in the
current periodicals section of Hale Library), to see the format you should follow to prepare this report. The lab supplement, *Communicating science*, also highlights points to consider when writing a scientific paper.

- **Late assignments**: Assignments will be considered late if they are not received during class on the due date. Answers handed in the next day will be accepted at a penalty of 20% of assignment’s value. An assignment handed in two or more days after the original due date will be accepted with a penalty of 50% of its value.

- **Independent project**: A presentation of results from an independent project must be made by all students at the end of the semester. See “Presenting a Short Talk” in the supplement, *Communicating science*, for hints relative to this presentation. We will go over this assignment later in the semester (see the *Planning an ecological study*, supplement), but you should begin thinking now about the type of ecological questions you would like to tackle in your project. If you want to answer a question dealing with nutrients, fungi, algae, plants, or invertebrates, great! If you want to work with vertebrates, more stringent rules apply and we will discuss these with you. Observing vertebrates to test your hypotheses is fine, but manipulative studies (anything that drastically affects a vertebrate’s behavior) are not likely to be allowed, due to university-wide regulations. Also, note that we expect you to do a project specifically for this class, while you are taking this class. We do not want a rewrite of a paper you did for another class, nor do we want you to use only data you may have collected previously.

- **Grading errors**: If you feel that an error has been made in the grading of your questions or scientific report, the assignment may be submitted for regrading within one week of the date it was returned to the class. A note detailing the grading errors you believe were made must accompany the assignment. Then we will regrade the entire assignment; the new grade may be higher, lower, or the same as the original grade, depending on the errors we find the second time through the paper.

- **K-State’s Honor Code**: We encourage collaboration among students when all parties contribute to the partnership. In fact, some of the greatest discoveries in science have come from productive collaboration. Since we are in a classroom environment, though, we expect integrity and honesty from our students. Copying is not learning—copying is cheating. Here are some guidelines from the website of the Kansas State Undergraduate Honor System:

  "Kansas State University has an Undergraduate Honor System based on personal integrity which is presumed to be sufficient assurance in academic matters one’s work is performed honestly and without unauthorized assistance. Undergraduate students, by registration, acknowledge the jurisdiction of the Undergraduate Honor System. The policies and procedures of the Undergraduate Honor System apply to all
full and part-time students enrolled in undergraduate courses on-campus, off-campus, and via distance learning.

A component vital to the Honor System is the inclusion of the Honor Pledge which applies to all assignments, examinations, or other course work undertaken by undergraduate students. The Honor Pledge is implied, whether or not it is stated: "On my honor, as a student, I have neither given nor received unauthorized aid on this academic work.

A grade of XF can result from a breach of academic honesty. The F indicates failure in the course; the X indicates the reason is an Honor Pledge violation.

For more information, visit the Honor System home page at: [http://www.ksu.edu/honor](http://www.ksu.edu/honor)

When you are not sure if or how to cite someone else’s work, always ask your TA or professor. In this case, ignorance is no excuse.

- Grades: Here’s the distribution of points in Ecology Lab.
  - Questions/data (6 labs @ 20 pts. each) = 120 pts.
  - Scientific report (Lab 9—Grasslands and grazers) = 40 pts.
  - Independent project (5 pts. for proposal and 35 pts. for completion of project and presentation) = 40 pts.

A = 100 – 90
B = 89 – 80
C = 79 – 70
D = 69 – 60
F = 59 or lower