

**General Information:**

**Class Time:** MWF: 9:00 to 9:50 a.m. in KC101  
**Lab Time:** F: 2:00 to 5:00 p.m. in KC200 or as scheduled

**Instructor Info:**

**Dr. Cris G. Hochwender**

**Phone:** 488-2005

**Office:** KC 216

**Office Hours:** 8:15 -8:55 am daily; 1:00 - 1:45 pm on TTh.

**Email & website:** [ch81@evansville.edu](mailto:ch81@evansville.edu); <http://faculty.evansville.edu/ch81>

**Textbooks:** Molles, Jr., M.C. 2005. *Ecology: Concepts and Applications*. Second Edition. McGraw Hill, Boston, MA.  
Handouts and readings from instructor.

**Lab Fee:** Lab handouts, exercises, and readings will be distributed by the instructor. A fee of \$20 must be paid to Mrs. Pat Akrabawi in KC219. This fee should be paid prior to the 1<sup>st</sup> lab.

**Course Description:** Ecology focuses on the interactions among organism and between organisms and their environment. These interactions can be examined at the level of individual, population, community, and ecosystem. During class discussions, we will examine ecological concepts, especially focusing at the ecosystem- and community-level. Attention will be given to environmental issues related to the impact humans have on populations, communities, and ecosystem functioning. To develop your research skills and understanding of ecological issues, students will perform a semester-long research project that examines a specific ecological question in detail (see handout).

**Course objectives:** (1) to increase your curiosity about natural systems and to enhance your ability to observe and interpret patterns in nature, (2) to expose you to the scientific method in answering ecological questions and to introduce you to research skills that will aid you in answering those questions, and (3) to enhance your understanding of interactions between communities and their physical environment.

**Attendance Policy:** Your participation in classroom and laboratory exercises is integral to this course. You are expected to attend all classes; if you miss class during a regular lecture session, you are responsible for all work missed. The dates for the exams, quizzes and assignments are indicated in the syllabus; if you are unable to attend class, contact your instructor immediately. In addition, you will need to submit a note from the Office of the Dean of Students confirming the reason for your absence. Your absence will be excused provided that it complies with the University's policy governing excused absences and provided that you complete the assignment within the requested time frame. Unexcused absences and incomplete work will regrettably receive zeros for grades.

†The schedule may be modified to enhance learning opportunities

**Discussions:** A substantial component of class period will be a discussion of assigned material to encourage everyone to read the assigned subjects for comprehension. To ensure that you can provide a meaningful contribution to each subject, you are expected to read the assigned chapters prior to the class discussion of that subject.

**Grading:** Your final grade will be determined based on the following:

Exam I - III:	15% each
Comprehensive Final Exam:	10%
Research report/presentation:	35%
Class presentations and participation:	10%

Course grades will be determined using the following scale:

	B+ = 88-89%	C+ = 78-79	D+ = 68-69%
A = 93% or above	B = 83-87%	C = 73-77%	D = 63-67%
A- = 90-92%	B- = 80-82%	C- = 70-72%	D- = 60-62%
			F = below 60%

**Academic Honor Code:** All students are expected to abide by the University's Honor Code. Accordingly, students are expected to neither give nor receive unauthorized aid on quizzes. Plagiarism, the use of unauthorized sources of information on submitted work, is considered a transgression of the honor code. If you violate the University honor code, you will receive a zero for the work in question and your violation will be reported to the Office of the Dean of Students. To ensure that students turn in original work, all writing assignments must be submitted to Turnitin.com. Your assignment will not be graded (and may be counted as late) until your assignment has been successfully submitted to turnitin.com.

Labs for Biology 423:

The laboratory is based on guided independent research. Each group of two students will identify a problem of interest, propose a research plan, and carry out the proposed experiments. The laboratory is open-ended, and will require students to spend time in lab outside of formal class meeting times. Recognize that since you get to choose your own laboratory project, you will want to develop a project that you find exciting and engaging.

**Choosing a Project:** I do not expect you to come to the first lab knowing what your project will be. You will need to spend time deciding what you would like to do; the more time you invest in the beginning, the better the semester will go. The project you propose should be a complete, self-contained unit, and must either result in new, potentially publishable data or verify the published results of others using a number of techniques which are new to all members of the lab group. The scope of your project should be such that it is attainable in about forty hours of laboratory time (not counting library research or missteps in research). In reality, your project will probably take longer to repeat and troubleshoot if all aspects of your research do not succeed the first time.

Perhaps you have done ecological research and have a sense of what you would like to do. Students are encouraged to use previous experience to develop their research project. Or you may

have only a vague idea concerning the types of questions that can be asked. If so, consider the list of possible issues provided in this handout. When your group thinks you know what you want to do, schedule a meeting with Dr. Hochwender, on or before **2 September, 2005**. You should consult with your instructor and others about the outline of your plan. Once you get approval, your lab group should write a proposal describing your plan in detail. The proposal should have five sections: **Background, Proposed Research, Timeline, Methods & Budget, and Grade Agreement**.

**I.** The Background section, like the introduction section of a lab report explains your research question, why it is important, and what is already known. This section should be three double-spaced pages (not including the literature cited section).

**II.** The proposed research describes how you will answer your question, and should not exceed four pages.

**III.** The time-line section explains when you expect to complete each part of your project.

**IV.** The methods section should provide protocols for every technique you will use. (You will need to use a minimum of three different ecological techniques). This section will require extensive research and hours of planning, but it is necessary to complete the Budget section, which describes what materials you will need, and where you will get them. We have a very limited budget, so do not plan to spend thousands of dollars!

**V.** Finally, the grade agreement outlines what grade you will expect for completing each stage of your project. Successful completion is worth 50% of the lab grade (50 lab points).

The proposal is due **9 September, 2005**, at which time you will give an in-class presentation of your proposal. As always, material you present to the class may appear on exams, so do a good job. After your presentation, you can revise your proposal, with the final version due on **16 September, 2005**. From September 16<sup>th</sup>, the rest of the semester will be available to complete your project.

Completing your Project: Stick to your timeline! It is important to have results to present at each progress report. Lab groups are encouraged to finish their project as early in the semester as possible, to avoid last-minute panic and insanity. All research should end before field conditions become challenging, and research must end prior to Thanksgiving. When your research is complete, the following weeks are to be spent writing a manuscript in the form of a journal article. Your research will culminate in a final oral presentation of your work.

Grading: Laboratory grades will be based on the quality of the proposal, the successful completion of the experiments, and clarity of communication. The proposal and proposal presentation are together worth 10% of the lab grade. Progress reports, including the final report are worth 15% of the lab grade, and the final lab manuscript is worth 25%. This totals 50% of the lab grade for the written and oral communication of your work. The other 50% is awarded based upon the completion of your proposed research as designated by your grade agreement.

## Lecture Schedule:

<u>Week of</u>	<u>Topic</u>	<u>Reading</u>
8/22	Introduction; What is Ecology?	Molles 1
8/29	Climate; Biomes—Student presentations	Molles 2 (+ Ch 4,5,6)
9/5	Biomes (cont.); Populations, Abundance, Diversity	Molles 9, 10, 11, 16
9/12	PAD (cont.); Nutrient Cycles	Molles 19
9/19	<b>Exam I (Monday);</b> Global Ecology	Molles 23; Readings
9/26	Succession	Molles 20; Readings
10/3	Landscape Ecology	Molles 21; Readings
10/10	Geography and Ecology	Molles 22; Readings
10/17	Geography and Ecology;	Readings
10/24	Foodwebs and Trophic Pyramids; <b>Exam II (Friday)</b>	Molles 17, 18; Readings
10/31	Human population; Conservation Issues	Molles 11; Readings
11/7	Conservation Issues —Student presentations	Readings
11/14	Conservation Issues;	Readings
11/21	Conservation Issues; <b>Thanksgiving break</b>	Readings
11/28	TBA	
12/5	<b>Exam III</b>	

**Tues 12/13      Final (10:15 am)**