# BIOL 4131.01
# Ecology
# Spring 2012

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| **Class meetings**: | **Thursdays 1:00-3:50pm; Bayou Building 2122** |
| **Instructor**: | **Dr. Cindy Howard** |
| **Office**: | Bayou Building, Faculty Suite 3525 |
| **Telephone**: | (281) 283-3745 (please leave a message if you don't get an answer) |
| **E-mail**: | howardc@uhcl.edu (best way to contact me) |
| **Office hours**: | Mon 2-5pm, Wed 4-5pm; other times by appointment |
| **Webpage**: | http://sce.uhcl.edu/howard/ |

**Course text and materials**

Krebs, C.J. 2009. ***Ecology: the experimental analysis of distribution and abundance*, 6th ed**. Pearson Benjamin Cummings, San Francisco, CA. 655 pp. ISBN-10: 0-321-50743-6.

PowerPoint slides for each lecture, as well as practice problems and other course information will be available at least one day before each class session in the course Blackboard shell.

**Prerequisites**

General Biology.

**Course objectives**

To provide students with an introduction to theoretical ecology that includes (1) analysis of physical, chemical and biological factors that affect the distribution and abundance of organisms in their natural environments, (2) population growth, competition and predation, and (3) community concepts and species diversity.

**Learning outcomes**

Upon successful completion of this course, students will be able to interpret the effects of environmental factors on the distribution of species, calculate population data from life tables, analyze competition and predator-prey models and apply this knowledge to community dynamics and ecosystem productivity.

**Course format**

Class lectures by the instructor and class discussion of current topics in ecology. Lectures and handouts cover material that originates from the textbook.

**Evaluation**

Three exams will be given during the term. Each exam will cover the material presented in lectures, handouts and readings from the textbook, and will count one-third toward the final grade in the course. All exams in this course will require that students provide a full-size (8½ x 11", blue, Form #4521) scantron, pencil and calculator. Exams will consist of problem solving, as well as objective and short answer questions. An optional, comprehensive final will be available at the end of the course for students who would like to replace their lowest regular exam score. *There will be no make-up exams or make-up assignments.*

There will two opportunities for extra credit (each worth additional points on the final course average)

1. Attend and view video presentation by Dr. E.O. Wilson in class on February 15, 2012 and complete study questions which will be handed out in class. No other viewing times will be scheduled and answers to the study questions will be due at the end of class on Thursday, February 15, 2012. Up to 3 points extra credit possible.
2. Participate in the Cornell Lab of Ornithology Great Backyard Bird Count February 17-20, 2012 (http://www.birdsource.org/gbbc/whycount.html). Make observations and record on provided course form, upload counts to GBBC website during count period, and prepare a short report for up to 7 points extra credit. Report will include (1) the completed course form for your individual count and (2) a comparison of

the results for your zipcode (or the zipcode you conducted your survey) 2012, 2011 and 2006, downloaded from the GBBC website.

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| Grading scale: | A | 92-100% | B | 80-85% | C | 70-75% | D | 60-65% |
| | A- | 88-91% | B- | 78-79% | C- | 68-69% | D- | 58-59% |
| | B+ | 86-87% | C+ | 76-77% | D+ | 66-67% | F | <58% |

**Class attendance**

Class attendance is strongly recommended. Handout materials will be available online; however, the handouts represent outlines of lecture material and do not contain sufficient information to succeed on exams without additional lecture notes.

Information on university closures due to weather or other events can be obtained from the UHCL hotline (281-283-2221) or http://www.uhclemergency.info/go/site/1522/ .

The course instructor may send messages to students during the semester regarding class schedule updates or changes, using the students' university email accounts.

**Incompletes and withdrawals**

The last date to drop this course without a grade penalty is **April 23, 2012** In accordance with UHCL policy, an incomplete grade (I) can only be assigned if the student is making satisfactory progress, but cannot complete the course for a documentable reason.

**6 drop rule limitation**

Students who entered college for the first time in Fall 2007 or later should be aware of the course drop limitation imposed by the Texas Legislature. Dropping this or any other course between the first day of class and the census date for the semester/session does not affect your 6 drop rule count. Dropping a course between the census date and the last day to drop a class (March 28) for the semester/session will count as one of your six permitted drops. You should take this into consideration before dropping this or any other course. Visit www.uhcl.edu/records for more information on the 6 drop rule and the census date information for the semester/session.

**Academic honesty**

Please carefully review the UHCL Academic Honesty Policy in the current UHCL catalog. Every student enrolled in this class is expected to abide by the UHCL Honesty Code, which states, "I will be honest in all my academic activities and will not tolerate dishonesty." Your participation in this class constitutes your acceptance of the UHCL Academic Honesty Policy. Dishonesty of any kind (e.g., plagiarism, cheating on exams) is absolutely unacceptable in this course. All academic code violations will be reported to the Dean of Students and can result in a grade of "F" on an assignment or test, a grade of "F" in the course or suspension from the university (see catalog). Your written work may be checked for plagiarism at any time. For the full UHCL Academic Honesty Policy, please refer to http://prtl.uhcl.edu/portal/page/portal/PRV/FORMS_POLICY_PROCEDURES/STUDENT_POLICIES/Academic_Honesty_Policy.

**Special academic accommodations**

Students requiring special academic accommodations with regard to exams, etc. should contact the Disabilities Services Office at 281-283-2627 (http://prtl.uhcl.edu/portal/page/portal/UAO).

**Electronics**

Use of cell phones, pagers, PDAs, laptop / notebook computers or similar electronic devices is generally not permitted during class periods. Cell phones must be silenced or turned off and must be stored out of sight for the duration of the class period. Exceptions may be made on a per class period basis and must be cleared with the course instructor prior to the start of class.

**BIOL 4131.01**
**Ecology** **Wednesdays, 1:00-3:50pm**
**Spring 2012** **Bayou Building 2122**

## Course schedule (subject to revision):

| Date | Topic | Preparation (Krebs 2009) |
|---|---|---|
| 01/18 | Course introduction | |
| 01/25 | Introduction to ecology; Evolution and ecology | Chps. 1, 2 |
| 02/01 | Analyzing geographic distributions<br>Factors that limit distributions I: Biotic factors | Chps. 4, 5 |
| 02/08 | Factors that limit distributions II: Abiotic factors | Chp. 6 |
| 02/15 | **Exam 1 (Chapters 1-6; lecture notes)** | |
| 02/15 | **Optional extra credit assignment (≤3 pts)**: video presentation and study questions from E.O. Wilson's *The Future of Life;* due at end of class period. | |
| 02/15 to 02/17 | **Optional extra credit assignment (≤7 pts):** participate in Great Backyard Bird Count at home; make observations and record on provided course form, upload counts to GBBC website during count period, and prepare a short report for up to 7 points extra credit. Report will include (1) the completed course form for your individual count and (2) a comparison of the results for your zipcode (or the zipcode you conducted your survey) 2012, 2011 and 2006, downloaded from the GBBC website. | |
| 02/22 | Population parameters and demographic techniques | Chp. 8 |
| 02/29 | Population growth<br>Species interactions I: Competition | Chps. 9, 10 |
| 03/07 | Species interactions I: Competition<br>Species interactions II: Predation | Chps. 10, 11 |
| 03/14 | No class: Spring Break | |
| 03/21 | Species interactions II: Predation<br>Review for Exam 2; practice problems | Chp. 11 |
| 03/28 | **Exam 2 (Chapters 8-11; lecture notes)** | |
| 04/04 | Community parameters<br>Community structure in time: Succession | Chp. 18 |
| 04/11 | Community structure in space: Biodiversity<br>Community dynamics: Equilibrial and non equilibrial communities | Chps. 19, 20, 21 |
| 04/18 | Ecosystem metabolism I: Primary production<br>Ecosystem metabolism II: Secondary production | Chps. 22, 23 |
| 04/25 | **Exam 3 (Chapters 18-23; lecture notes)** | |
| 05/02 | **Optional Comprehensive Final Exam (replaces lowest exam score)** | |