

**BIOLOGY 350-01****FUNDAMENTALS of ECOLOGY****FALL 2009**

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Office hours M, W 9-10:50, R 10-10:50, and by appointment

Lecture meets M, W 11:00-11:50 in Holt 268.

Field trips depart from the bus-loading zone at the east end of Holt Hall.

NOTE: **All** students enrolled in BIOL 350 (i.e., Section 01) meet in Holt 268 M and W for lecture.Additionally, **Section 02** meets for lab in Holt 251 M from 2-4:50 with Don Miller;**Section 03** meets for lab in Holt 251 T from 2-4:50 with Shelly Kim; **Section 04** meets for lab in Holt 251 W from 2-4:50, also with Don Miller.

**Student learning outcomes in** Fundamentals of Ecology include: 1) describing how organisms interact with one another and their environment, and explaining interactions at the population and community levels; 2) demonstrating an understanding of, and ability to use, the processes and methods of scientific inquiry; 3) formally communicating, through both oral and written means, the results of ecological investigations. This is an approved writing proficiency (WP) course, open only to students who have completed ENGL 130 (or its equivalent) with a grade of C- or higher. Your grade will depend in part on how well you complete the writing assignments, including lab report drafts and revisions, the research report (both written and orally-presented materials), and essay questions on exams. **You must earn a C- or better to fulfill the writing proficiency requirement.** A background in basic biology and chemistry is assumed; familiarity with statistics is helpful.

Required text: Essentials of Ecology, 3<sup>rd</sup> ed., by Townsend, Begon and Harper (2008, Blackwell). The BIOL 350 Lab Manual is available for sale from Omicron Theta Epsilon for about \$10. A lab book (three-ring binder is handy) and a calculator are needed for indoor lab; also useful is a field notebook for field trips. A \$60 Miscellaneous Course Fee to cover lab expenses is due at Registration; otherwise, pay by Week 4 at the Cashier's Office in Kendall 212 (to avoid having student services withheld). The last drop day without any signature is the end of Week 2.

Your grade for Class discussion will be based on your attendance and general participation in class, as well as your input during discussion on the topical "ECONcerns" included in the text. I expect a short synopsis of the topic, with one or two questions for discussion, as well as a summary. We will hold these discussions usually on the second day of a given lecture topic as indicated in the course schedule—**please bring your texts on these days.**

Grading scheme

Quiz	20 pts.
Class discussion	15 pts.
Exam I (covers lecture, lab, field trip material—non-cumulative)	100 pts.
Exam II (covers lecture, lab, field trip material—non-cumulative)	100 pts.
Final exam (semi-cumulative)	150 pts.
Lab reports and revisions (4 @ 25 pts each)	100 pts.
Lab books (not counting reports)	50 pts.
Research project proposal and progress report (20 pts each)	40 pts.
Research project (oral presentation 25 pts; written report 75 pts)	100 pts.
<b>TOTAL</b>	<b>675 pts.</b>

I assign grades only after all points have been tallied at the end of the semester. Rather than setting cut-offs for letter grades in advance, I award students letter grades based on how well they perform with respect to the rest of the class. Therefore you should do your utmost!

## LECTURE SCHEDULE FALL 2009

**Special note:** Because of the state budget crisis, certain furlough dates will apply during the semester. We will not have class during those days. I am sorry, but this is unavoidable!

	<b>Readings</b>	<b>EOncerns</b>
Aug 24 Introduction		
Aug 26 Ecological methods I	Ch. 1: 3-16	
Aug 31 Ecological methods II	Ch. 1: 17-35	Box 1.5: "McDonaldization"
Sep 2 Importance of evolution I	Ch. 2: 36-51	
Sep 7 NO CLASS—Labor Day		
Sep 9 Importance of evolution II	Ch. 2: 51-66	Box 2.2: Deep sea communities
Sep 14 <b>QUIZ (essay)</b> ; Ecology of individuals I	Ch. 3: 69-95	
Sep 16 Ecology of individuals II	Ch. 3: 95-109	Box 3.2: Global warming
Sep 21 Conditions, resources, biomes I	Ch. 4: 110-130	Box 4.1: Global climate change
Sep 23 Conditions, resources, biomes II	Ch. 4: 130-141	Box 4.2: Fish halts bulldozers
Sep 28 Birth, death and movement I	Ch. 5: 145-164	Box 5.3: Sea otter populations
Sep 30 Birth, death and movement II	Ch. 5: 164-181	
Oct 5 <b>EXAM I</b>		
Oct 7 Interspecific competition I	Ch. 6: 182-200	
Oct 12 Interspecific competition II	Ch. 6: 200-216	
Oct 14 Predation, grazing, disease I	Ch. 7: 217-239	Box 6.2: Cheating grasses
Oct 19 Predation, grazing, disease II	Ch. 7: 240-250	Box 7.3: Caterpillars eat forests
Oct 21 Population processes I	Ch. 9: 281-299	Box 9.2: More acorns, more Lyme Disease
Oct 26, 28, Nov 2 NO CLASS		
Nov 4 Population processes II	Ch. 9: 299-322	Box 9.4: Succession manipulation
Nov 9 Population processes III		
Nov 11 NO CLASS—Veterans' Day		
Nov 16 <b>EXAM II</b>		
Nov 18 Patterns in species richness I	Ch. 10: 323-340	
Nov 23-27 <i>Thanksgiving Break</i>		
Nov 30 Patterns in species richness II	Ch. 10: 340-356	Box 10.4: Flood of exotic species
Dec 2 Energy transfer and nutrient flow I	Ch. 11: 357-374	Box 11.2: Biodiversity and ecosystem health
Dec 7 Energy transfer and nutrient flow II	Ch. 11: 374-385	Box 11.3: Aquatic dead zones
Dec 9 Applied Ecology	Ch. 12-14	Box 12.1: Human population problem

**FINAL EXAMINATION—Monday, Dec 14, 12:00-1:50 in Holt 268**