

Biology 215**General Ecology**

Date	Tentative Lecture Topic	Text Assignment (Molles)
8/26	Introduction: conditions & resources; tolerance ranges	Ch. 1 pp. 1-8; Ch. 4 pp. 89-91
8/28	Climate & the biome concept	Ch. 2 pp. 14-20; 43-46
9/2	No class... Labor Day Holiday	
9/4	Tropical biomes	Ch. 1 p. 4-6; Ch. 2 pp. 20-27
9/9	Arid & semi-arid biomes: deserts to grasslands	Ch. 2 pp. 27-34; Ch. 5 pp. 111; 123-127
9/11	Temperate & boreal forests	Ch. 2 pp. 34-38
9/16	Tundra & mountain ecosystems Quiz I (25 pts.)	Ch. 2 pp. 38-43
9/18	Marine ecosystems	Ch. 3 pp. 49-63
9/23	Limnology: freshwater lakes	Ch. 3 pp. 73-79; Ch. 18 pp. 417-418
9/25	Streams: freshwater with a current!	Ch. 3 pp. 67-72; Ch. 10 pp. 253-254
9/30	Ecology of Individuals: adjusting to environmental change	Ch 4 pp 90-101; Ch 5 pp 124-127
10/2	Exam I (100 pts.; covers lectures & reading assignments 8/26-9/25)	
10/7	Long-term adjustments & adaptation	Ch. 8 pp. 189-190; 204-206
10/9	Life histories and population structure; intro. to life tables	Ch. 12 pp. 279-293
10/14	Survivorship & mortality; fecundity schedules	Ch. 10 pp. 239-249; 257-258
10/16	Population dynamics & exponential growth	Ch. 11 pp. 261-264; 270-276
10/17	Last day to drop class with a grade of "W"	
10/21	Intrasp. competition & logistic growth Quiz II (25 pts.)	Ch. 11 pp. 264-270; Ch. 13 pp. 303-306
10/23	Interspecific competition & the niche concept	Ch. 1 pp. 1-2; Ch. 13 pp. 307-320
10/28	Modeling interspecific competition: Lotka-Volterra model	Ch. 13 pp. 310-313
10/30	Exploitative interactions predation, parasitism, herbivory	Ch. 14 pp. 325-336; 340-344
11/4	Exam II (100 pts.; covers lectures & reading assignments 9/30-10/30). Election Day	
11/6	Predation: Lotka-Volterra model	Ch. 6 pp. 150-151; Ch. 10 pg. 253; Ch. 14 pp. 336-340
11/11	Beneficial interactions: mutualism	Ch. 15 pp. 351-362; 365-367
11/13	Trophic structure: food webs & keystone species	Ch. 17 pp. 393-404; Ch. 18 pp. 413-414
11/18	Energy flow & nutrient cycling	Ch. 18 pp. 420-426; Ch. 19 pp. 433-436
11/20	Community structure & species diversity Quiz III (25 pts.)	Ch. 16 pp. 373-383
11/25	Disturbance & species diversity	Ch. 16 pp. 383-389
11/27	No Class... Thanksgiving Break	

12/2	Community development & succession	Ch. 20 pp. 453-458; 462-468
12/4	Conservation ecology: what is "rare?"	Ch. 9 pp. 229-237
12/11	Final Exam 4-5:50 (100 pts.; covers lectures & reading assignments 10/30-12/4)	

Required Textbook: Manuel Molles. 2002. Ecology: Concepts and Applications. 2nd ed. WCB/McGraw-Hill.

Prerequisites: Biology 112 or 120 (Biology 111 or 121 strongly recommended); sophomore standing.

Course Objectives:

1. To master basic ecological principles about individual organisms, populations, communities, and ecosystems.
2. To explore and understand how individuals affect and are affected by the biotic and abiotic environment.
3. To master concepts, models and theories about intra- and interspecific relationships among organisms (e.g., population growth, competition, predation); to interpret graphs, and relate them to mathematical models.
4. To learn fundamental principles of energy flow, nutrient cycling, and succession in ecological communities.

Relationship between lecture and laboratory:

Laboratory exercises are field-oriented for the first 70% of the semester and are organized with environmental constraints in mind (e.g., weather, activity of plants and animals). Laboratory exercises and assignments emphasize field, laboratory, analytical, and scientific writing skills. Lectures are organized conceptually, beginning with whole ecosystems, then exploring individual organisms, populations, and communities. Exams and quizzes emphasize conceptual and theoretical information, but will include examples from lecture, readings, and ecosystems explored in laboratory. Material in laboratory and lecture may be presented asynchronously, but they link together conceptually. I will point out these linkages during lecture, but you should look for ways in which your observations and experiences in lab relate to the concepts discussed in lecture, and vice versa.

Exam Policy: Exams cover material from lectures and reading assignments preceding each exam. Exams are not comprehensive, but ecological concepts are interrelated and I have structured the course so that topics covered later in the semester build on the topics presented earlier. Exams will consist of both objective (multiple choice, matching) and written (short answer, essay) sections, and will cover material from lectures, assigned readings, and handouts. **Expect to take exams on the scheduled date.** Make-up exams will be given only under **exceptional circumstances, when you have contacted me by telephone or e-mail before noon the day of the exam.** Make-up exams may have a substantially different format than regular exams.

Lecture Policy: I expect your attendance in class. I include information & examples in lectures from sources other than your textbook; exams emphasize lecture material, so your attendance benefits your final grade as well as your understanding of ecology. This course addresses topics that are inherently complex. I hope that you gain a deeper and individualized understanding of ecology through your attendance and participation.

Grading Policy: Your grade will be determined from your performance on lecture quizzes & exams and on laboratory assignments. I calculate grades by dividing total points earned by total points possible, and generally follow a standard scale (A/A- = 90-100%, B+/B/B- = 80-89%, etc.). Course points will be distributed as follows:

Laboratory	175 points
Quizzes	75 points (25 points each)
Exam I	100 points
Exam II	100 points
<u>Final Exam</u>	<u>100 points</u>

Total

550 points

Office Hours: I encourage your questions and comments, and welcome your input. If my office hours are inconvenient, e-mail is a terrific way to connect with me; it's available whenever an idea or question pops into your head, and I usually respond fairly quickly. Please don't disturb me during research days or class prep periods (see schedule on Pad 249). I may seem grumpy or rushed at those times, because I'm addressing the many other responsibilities I have in addition to lecturing. I'm truly happy to help when I'm not handling these other responsibilities. Don't delay contacting me if you desire assistance. Seeking guidance early can make a big difference in your learning and performance; last-minute efforts just don't help much.

If you have special needs because of learning or physical disabilities, please contact the Office of Academic Support (OAS) at 331-2490.