

Professor Drew Kerkhoff
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Phone 427-5734
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Office Hours
Monday 2:00 – 4:00
Thursday 2:00 – 4:00

Also by appointment; please don't hesitate to ask for help.

Required Texts

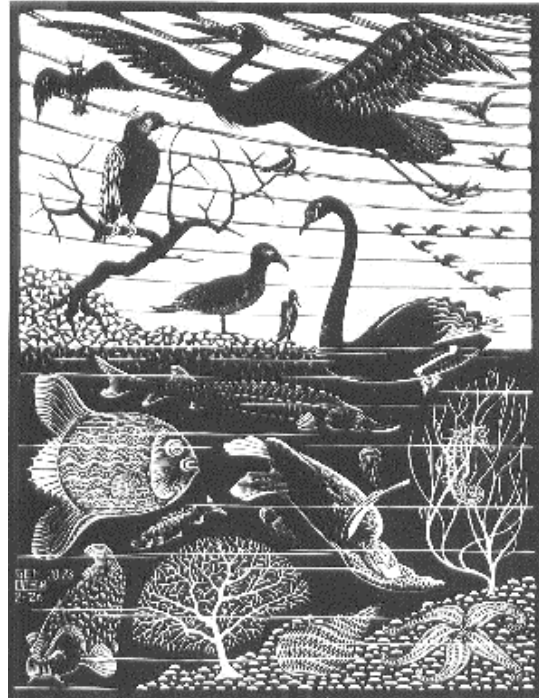
Molles, M.C. 2010, *Ecology: Concepts and Applications*, 5e. McGraw Hill.

General Course Goals and Expectations

Through this course you will learn to:

1. Reach a synthesis of ecological interactions and processes at multiple scales and levels of organization.
2. Explain and predict patterns in the distribution and abundance of organisms and their interactions with their environment based on natural processes.
3. Understand the dynamic and interdependent nature of ecological systems (i.e., things are always changing and everything is connected).
4. Hone your skills in reading primary literature, and express your own understanding and opinions.
5. Use the conceptual framework of ecology to formulate scientific questions and propose ways of answering them (i.e., hypothesis testing, selection of variables to measure, experimental design, mathematical modeling).

These skills will be achieved through lectures, readings, discussions, homework problems and in class exercises, writing, and at least some time outside, looking at nature. As a student, you should have a basic background in ecology and/or evolution (e.g., the prerequisite Biology 115 or 116), a strong interest in developing a *scientific, quantitative* understanding of how nature works, and a desire to *participate* in the learning process. As the instructor, I will give focus to our ecological studies, assist you in attaining your own understanding of the subject, and provide both formal and informal feedback and mentorship. **Our roles require that all of us come to class sessions prepared.**



Course Outline and Calendar (subject to change)

Week	Dates	Readings / Assignments	Topics
1	1/18 – 1/22	Molles Ch. 1, 2, 3 Info card, Orientation quiz	Scale and levels, physical geography, biomes
2	1/25 – 1/29	Molles Ch. 5, 6	Physiological adaptation, tolerance
3	2/1 – 2/5	Molles Ch. 9, 4.1	Distributional limits
4	2/8 – 2/12	<i>Graham paper</i> , Molles Ch. 10 Report due Monday 2/8 Darwin Day 2/12!	Synthesizing distribution, population dynamics
5	2/15 – 2/19	Molles Ch. 11	Modelling population growth and dynamics
6	2/22 – 2/26	<i>Tobin Paper</i> , Molles Ch. 12 Report due Monday 2/22 Exam Friday 2/26 (Ch. 1-4.1, 5-6, 9-12)	Modelling invasive spread, life history
7	3/1 – 3/5	Molles Ch. 13 Candidate Papers Due 2/27	Competitive interactions
8	3/8 – 3/12	SPRING RECESS	
9	3/15 – 3/19		
10	3/22 – 3/26	Molles Ch. 7, 14 Paper Proposal due Friday 3/20	Exploitative interactions
11	3/29 – 4/2	Molles Ch. 15, 17	Mutualism, community structure: interaction networks
12	4/5 – 4/9	<i>Ostfeld paper</i> , Molles Ch. 18 Report due Friday 4/2 Bibliography due Friday 3/27	Ecosystem structure and energy flow
13	4/12 – 4/16	Molles Ch. 19 Exam 2 Friday 4/16 (Ch. 7, 13-15, 17-19)	Material dynamics in ecosystems
14	4/19 – 4/23	<i>Reich paper</i> , Molles Ch. 20, Report due Monday 4/19	Succession and change in communities
15	4/26 – 4/30	Ch. 16, 22 Paper Draft due Friday 4/30	Biodiversity and biogeography
16	5/3 – 5/7	Ch. 23 Papers due Friday 5/7	Global ecology and global change
	5/10	Final exam?: 1:30 – 14:30 PM	

Grades Your course grade will be based on the following categories and their respective weights.

Attendance, Participation, and Enthusiasm (10%)
 Quizzes, Homework, Reports and Exercises (20%)
 News and Views Paper (25%)
 Exam 1 (15%)
 Exam 2 (15%)
 Final Exam (15%)

Attendance Policy Class attendance is **mandatory** and unexcused absences will negatively affect your grade. Please contact me **before** you miss a class (email or voice mail messages included). If you are an athlete or a member of another organization that travels, it is **your responsibility** (not your coach's or advisor's) to make arrangements with me concerning missed classes **well in advance, and by January 29 at the latest**. Failure to do so will result in unexcused absences. In-class work missed due to unexcused absences may not be made up.

Quizzes, Homework, and Exercises Short, unannounced quizzes will be given periodically at the beginning of class. Any class session is a possibility. These quizzes are designed to evaluate whether the necessary reading was completed before the lecture session. Regardless of how many quizzes are given, the lowest of your grades will be dropped.

You will also complete several homework assignments and in-class exercises over the course of the semester. Many of these will include quantitative components of the course, including the analytical and graphical representation of data and problem sets applying mathematical models.

Reading Response Reports Four short written assignments (1-2 pages) will be given during the semester. These assignments are critiques associated with papers from the primary literature that we will discuss in class. Reports will be evaluated both for content and the quality of the writing (i.e., clarity, grammar, spelling). Details of each assignment will be provided in class and posted on the website.

Course Paper A "News and Views" paper reviewing recent ecological research of your choice (but cleared by me) will be due at the end of the semester. Your paper will be a summary and commentary on a paper from the recent primary ecological literature. The goals are: 1) to communicate the particulars of a scientific breakthrough in ecology to a general, scientifically literate audience, and 2) to comment critically on strengths and limitations of the work and to put it into the broader context of the field. Further details of the assignment will be provided during the semester.

Exams The midterm exams cover all material, both in the readings and in the lecture, since the last exam. Questions will emphasize critical thinking, the evaluation of written and graphical information, and the application of ecological principles in novel contexts.

The final exam will be comprehensive and possibly a take-home.

Late Policy Assignments must be turned in at the beginning of the class period on the assigned due date, and they must be properly prepared (e.g., double spaced, stapled, in accordance with assigned specifications) to be accepted. If for any reason you cannot turn in your paper on the assigned date, you must contact me before class. If you are unable to visit me in person, you can leave a

message via voicemail (427-5734) or e-mail (kerkhoffa@kenyon.edu). **Late assignments lose 5% of their value per day.**

Academic Honesty Acquaint yourself with Kenyon's policy on academic honesty, printed in the *Student Handbook*. Adherence to standards of academic honesty is the responsibility of the student. If you have any questions or are unsure of appropriate conduct, please contact me.

Accommodating Disabilities If you feel that you may have need for some type of accommodation(s) in order to participate fully in this class or to take exams, please feel free to discuss your concerns with me in private. Also identify yourself to Erin Salva, Coordinator of Disability Services at 427-5453 or via e-mail at salvae@kenyon.edu. All information is confidential.