

Biology 107 – Summer 2016
Ecology Online

INSTRUCTORS OFFICE OFFICE HOURS EMAIL

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Tentative course schedule:

Week	Due Date	Topics	Assigned Reading	Assignments Due
1	Jun 20	Introduction		
	Jun 20	The Physical Environment/ The Biosphere	Cain ch. 2–3; Paper 1	
	Jun 21	Physiological Ecology	Cain ch. 4–5	Virtual field trip 1
	Jun 22	Behavioral Ecology	Cain ch. 8; Paper 2	
	Jun 23	Population Ecology I: Exponential growth	Cain ch. 9, 10.1, 10.3; Gotelli pp. 1– 12; Paper 3	
2	Jun 27	Population Ecology II: Age structured growth	Cain ch. 10.2–10.3; Gotelli 49–80	Virtual field trip 2
	Jun 28	Population Ecology III: Density dependent growth	Cain ch. 10.5, 11.2– 11.4; Gotelli 25–48	Report
	Jun 29	Population Ecology IV: Competition	Cain ch. 12; Gotelli 99–124	
	Jun 30	Population Ecology V: Consumer/prey interactions	Cain ch. 13; Gotelli 125–152	
3	Jul 5	MIDTERM EXAM		
	Jul 6	Life History	Cain ch. 7	
	Jul 7	Food Webs—Indirect Effects and Trophic Cascades	Cain ch.14, 21; Paper 4	Report revision
4	Jul 11	Mutualism & Coevolution	Cain ch. 15	Proposal

	Jul 12	Communities	Cain ch. 16–17	
	Jul 13	Ecosystems	Cain ch. 20, 22	Field notebook
	Jul 14	Diversity	Cain ch. 18–19; Gotelli Ch. 7, 9	Peer review
5	Jul 18	Resilience & Stability	Cain ch. 17; Paper 5	
	Jul 19	Evolutionary Ecology	Cain ch. 6; Paper 6	
	Jul 20	Paleoecology	Papers 7 & 8	
	Jul 21	Management & Conservation	Cain ch. 23–24	Proposal revision
	Jul 22	FINAL EXAM		

COURSE DESCRIPTION: This course focuses on physiological, behavioral, and population ecology, and on linking ecological processes to evolution. It includes basic principles, experimental approaches, concepts of modeling, and applications to ecological problems.

***In addition to covering the content described above, this course will help you to develop as a scientist. Goals for science practices include: keeping a field notebook, observing patterns, developing testable hypotheses, designing experiments to test hypotheses, using mathematical models to answer questions in population ecology, using figures to convey an idea, and reviewing and critiquing peer work.

CLASS FORMAT AND PARTICIPATION: This class is delivered in an online format. Lectures, papers, and assignments are available on the course website. Lectures for each topic generally include 25–45 minutes of viewing time (but allow extra time to pause and take notes and rewatch videos). Students will “attend” fieldtrips by viewing pre-recorded trips and make field observations independently (~4 hr total). Regular quizzes will be administered following assigned readings (~3 hr per week) and/or lecture viewings. These activities are enhanced by virtual group work (~2 hr per week), discussion forums (~1 hr per week), and virtual office hours with instructors (~1 hr per week). Participation points are dependent on your timely participation in video lectures, discussion forums, and assigned group work. Assignments and lecture viewing are due by 8pm PST on the date listed, although you are welcome to work ahead to best fit your schedule.

OFFICE HOURS: Students are **enthusiastically** encouraged to attend the virtual office hours. Office hours at other times are available by appointment. Please refer to the Canvas page for all class instructions and assignments.

REQUIRED TEXT AND WEB MATERIAL:

A Primer of Ecology (4th Edition) 2008, N.J. Gotelli, Sinauer Press.

Ecology (3rd Edition) 2014. Cain et al. Sinauer Press.

Paper assignments can be found on the course website.

The course website is on Canvas under BIO 107.

GRADING RUBRIC:

Final	30%
Midterm	20%
Quizzes	10%
Participation	10%
Report	10%
Proposal	15%
Field notebook	5%

EXAMS:

The midterm and final exams will be completed using the proctoring service ProctorU. Details on how to schedule your exam are on the course website. Exams are “closed book” and the use of materials, including texts and notes, are not permitted during the exam.

QUIZZES:

The quizzes are study aids. They are intended to help keep you from falling behind in the material and to help you see where you need to study more. The quizzes will focus primarily on the reading and lecture material covered in the most recent topic, but any material that has been covered up to that point is fair game. Quizzes should take less than 5 minutes to complete. The lowest score will NOT be dropped.

REPORT:

As part of the DC requirement for this course, you will write a four-page report about the virtual field trip to Younger Lagoon with Beth Howard (video available in topic 2 of the course). The goal of the report is to practice written communication by reporting on relevant ecological concepts, information about the site, the field methods used on the field trip, and ongoing research at Younger Lagoon. Specific prompts for this assignment are available on the class website. The report is due June 28th and a significant 4-page revision is due July 7th.

Assignments should be uploaded as a Microsoft Word document to the course website. They will be reviewed and comments will be uploaded as track changes to your dropbox. *Late assignments will have 10% of the total points deducted per day (including weekends).*

PROPOSAL:

As part of the DC requirement for this course, you will identify an ecological pattern based on personal observations around any nearby outdoor areas during your own time and come up with (i) an ecological hypothesis that could explain the pattern and (ii) a proposed experiment to test

the idea. The write up will be a four-page research proposal. The proposal is due July 11th. Proposals will be peer reviewed by two student reviewers. You will be assigned two papers to review and part of your grade is the quality of your peer reviews. Peer review guidelines are available on the course website. Peer reviews are due July 14th. After you receive your peer reviews, you will submit a significant 4-page revision by July 21st. The revision will be evaluated on improvement and the extent to which you respond to the feedback in your peer reviews. Assignments should be uploaded as a Microsoft Word document to the course website. Additional instructions are provided on the class website. *Late assignments will have 10% of the total points deducted per day (including weekends).*

FIELD NOTEBOOK:

As part of the DC requirement for this course, you will keep a descriptive field notebook to communicate your observations during the virtual fieldtrips and in the field. You will begin your field notebook during the first virtual field trip (~1-2 pages). This initial entry will be typed and posted in an online discussion forum for a virtual activity with your classmates (described in the intro to week 2 video). You are then expected to go into the field (local areas where you can observe ecology—urban settings are fine) at least three times during the summer session to make additional observations (~2 pages each). This is an independent assignment, although you are welcome to meet up with classmates to go into the field. The content of these entries will be discussed in the introduction video to week 2. Additional information is provided in a handout available on the course website (available after the initial fieldtrip). Following observations in the field, the field notebook should be typed (drawings should be photographed or scanned and included) and submitted as a single Microsoft Word or pdf document online by July 13th. Your notebook will be assessed on the extent to which you have addressed the prompts in the field notebook guidelines handout (pages 1 and 2). This activity is intended to help you develop the essential skill of keeping a detailed field notebook and to provide you with sufficient background for the hypothesis testing proposal.