

BIOSC 1140: BEHAVIORAL ECOLOGY
PYMATUNING LABORATORY OF ECOLOGY
May 11-29, 2020

Instructor: Dr. Kurt J. Regester, Clarion University

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Meeting Times and Location: MTWRF 9:00-5:00, PLE

Course Description:

A study of the biological concepts of animal behavior in an ecological context. Lectures investigate internal mechanisms, genetics, learning and habituation, foraging, habitat selection, reproduction, social organization, predation, and communication. Field and laboratory activities explore study design, techniques of observation and data collection, and field-based experiments on animal behavior.



Learning Outcomes:

1. Students completing the course will read assigned materials and improve skills in synthesizing information and effectively communicating independent ideas, both orally and in writing: these communication skills will be assessed by reports and participation in small group discussions.
2. Students completing the course will demonstrate evidence of sound scientific reasoning by synthesizing varied course topics into independent conclusions about historical and current evolutionary processes associated with animal behavior: critical thinking, quantitative analysis, and application of the scientific method will be assessed by exam essays and by successful completion of a short-term behavior observation project.
3. Students completing the course will apply knowledge of the natural sciences and mathematics: improvements in this area will be assessed by demonstrating proficiency at applying simple mathematical models to observed behavioral patterns and then generating an accurate interpretation of the analysis.

Suggested prerequisite: Completion of an introductory ecology course.

Required Textbooks:

1. Davies, N.B., J.R. Krebs, and S.A. West. 2012. *An Introduction to Behavioural Ecology*, 4th ed., Wiley-Blackwell.
2. Martin, P. and P. Bateson. 2014. *Measuring Behaviour: An Introductory Guide*, 3rd ed., Cambridge.

Attendance: Attendance is essential. If you miss a class you are responsible for obtaining lectures notes or assignments you may have missed. If you miss a class for a legitimate reason and wish to secure an opportunity for accommodation, you must notify the instructor within 24 hours of the absence and provide valid documentation of the absence. In doing so, reasonable and fair accommodations can be discussed on an individual basis. No make-ups will be given after materials have been graded and returned. It is your responsibility to read the University of Pittsburgh and PLE attendance policies. This document describes the standards by which issues will be resolved.

Grades: A maximum of 500 points can be earned and are distributed among the following categories.

Exams (3 @ 100 pts):	= 300 pts	A 90–100%
Independent project:	= 100 pts	B 80–89%
Quizzes/assignments:	= 75 pts	C 70–79%
Discussion/participation	= 25 pts	D 60–69%
		E <59%

I. Examinations:

Exams will be given at announced times. Exams will not be given after the first exam is completed, so arrive on time. Format will include a variety of multiple choice, short answer, and essay questions. Graphs, flowcharts, and other figures are strongly encouraged for maximum credit.

II. Field-based Labs:

Please come prepared for current weather and field conditions; this may include bringing boots, parkas, additional clothing, a backpack, drinking water, and snacks. Field trips are required and may be rescheduled due to unfavorable weather conditions. Departure times for field trips are firm; if you are late, you may be left behind. Missed labs cannot be made up.

III. Academic Honesty Policy:

All academic work in the course must meet PLE and university standards with regards to academic honesty and integrity. Students are responsible for educating themselves about these standards and policies. Academic honesty issues will be resolved based on the University of Pittsburgh and PLE Academic Honesty Policies.

IV. Disabled Student Services:

If you have specific needs that affect your ability to perform in this class, please inform me at the conclusion of the first class. If you require assistance or accommodations for testing, please notify me at the conclusion of the first class.

V. Important Information:

The University of Pittsburgh and its faculty are committed to assuring a safe and productive educational environment for all students. In order to meet this commitment and to comply with Title IX of the Education Amendments of 1972 and guidance from the Office for Civil Rights, the University requires faculty members to report incidents of sexual violence shared by students to the University's Title IX Coordinator. The only exceptions to the faculty member's reporting obligation are when incidents of sexual violence are communicated by a student during a classroom discussion, in a writing assignment for a class, or as part of a University-approved research project. Faculty members are obligated to report sexual violence or any other abuse of a student who was, or is, a child (a person under 18 years of age) when the abuse allegedly occurred to the person designated in the University protection of minors policy.

The syllabus should be considered a general outline of the course.

The exam dates and content of the course are tentative and may be modified based on student interests and the amount of class time required to adequately cover important topics. Any deviations from the syllabus will be announced during class meetings.

Audio or video recording of course meetings is not permitted without the consent of the instructor.

If you feel that audio or video records will assist you in learning, speak with the instructor before you do so.

Required Readings*

Day	Ch.	Davies, Krebs, and West (2012)	Ch.	Martin and Bateson (2014)
1	1	Natural selection, ecology, and behavior	1	Introduction
2	2	Testing hypotheses in behavioral ecology	2	Think before you measure
3	3	Economic decisions and the individual	3	Getting started
4	4	Predator versus prey: evolutionary arms races	4	Individuals and groups
5	5	Competing for resources	5	Recording methods
6	6	Living in groups	6	The recording medium
7	7	Sexual selection, sperm competition, and sexual conflict	7	How good are your measures?
8	8	Parental care and family conflicts	8	How good is your research design?
9	9	Mating systems	9	Statistical analysis
10	10	Sex allocation	10	Analyzing specific aspects of behavior
11	11	Social behaviors: altruism and spite	11	Interpreting and presenting findings
12	12	Cooperation		
13	13	Altruism and conflict in the social insects	*	Box indicates exam date
14	14	Communication and signals		
15	15	Conclusions		

*Additional required readings will be distributed during class meetings or via email.