

BIO 27 Animal Behavior

Class meets in 10A: Tu & Th 10:10 AM – 12PM. The x-hour is W 3:30-4:20 PM
Location: LSC 338

Professor

Ryan G. Calsbeek LSC 338

Office Hours: Tues 1-2 & Fri 3-4

Teaching Assistants

Madi Gamble

Overview

Prerequisites

Bio 15 or Bio 16 or permission of instructor

Readings

Readings will include a mix of book chapters from “Principles of Animal Behavior” by Lee Alan Dugatkin, “Evolutionary Behavioral Ecology” edited by Westneat and Fox, and primary literature. These readings represent the majority of the content and concepts that will be presented in class. Dugatkin’s book is semi-optional. I won’t require you to buy it, and material on exams will all be discussed in class, but it’s an excellent book and will provide substantial background reading in many cases. For those who don’t buy the book, I will provide a reserve copy for scanning.

Blackboard

I have set up a CANVAS site for Bio 27. The specific reading assignments for each class, as well as powerpoint slides will be available on CANVAS. I recommend that you check the site often for newly posted material.

Assessment of Your Academic Performance

You will write weekly paper critiques in advance of the lectures. These will be a means for you to prepare yourselves for discussion by synthesizing your thoughts and ideas about the week’s topic. These write ups, will be about 1 page long and will contribute 20% to your final grade. Two midterms (25% each; held during the XHOUR) and a cumulative final exam (25%) during the term. Exams will focus on the topics covered during each few-weeks interval, including lecture material and topics raised during in class discussions (the latter of which will not be covered in course notes so you must be prepared for these discussions in advance). As the course progresses, I will take opportunities to link current topics with earlier ones; these connections will also be reflected in the progression of lectures. The final will cover material from the last two weeks of lectures AND will also include integration and synthesis of major concepts covered during the term. You must arrange your schedule such that you can attend the x-hours—no exceptions. The remaining 5% of your grade will be based on your performance in class presentations and participation.

Academic Honesty

Academic honesty is essential. The following is quoted directly from the Dartmouth College Student Handbook : "Students who submit work that is not their own or who commit other acts of academic dishonesty forfeit the opportunity to continue at Dartmouth." The complete text of the Academic Honor Principle is in the Student Handbook or at (<http://www.dartmouth.edu/~deancoll/documents/handbook/conduct/standards/honor.html>). Please read the Honor Principle carefully; **you** are responsible for knowing and understanding the Honor Principle, and adhering to its letter and spirit. Any violations of the Honor Principle in this course must be referred to the Committee on Standards and can result in your suspension for multiple terms, or, in the most extreme cases, separation from the College.

Special Circumstances

I encourage students with learning, physical, or psychiatric disabilities that may need special classroom accommodations to make an appointment to see me by the end of the second week of the term. All discussions will be confidential, although we may need to consult the Student Accessibility Services office to discuss implementation of special requests.

I recognize that some students may wish to take part in religious observances that fall during the term. Should you have a religious observance that conflicts with your participation in the course, please speak with me by the end of the second week of the term to discuss appropriate accommodations.

Course Layout:

Specific lecture topics are given below. This is a rough approximation and may vary depending on pace and discussion time. The overall structure of the course however will move from a section on **historical and methodological principles** to a section on **social and cultural components of behavior** to a section on **environmental components of behavior (behavioral ecology)**

Animal Behavior

Class Schedule

Tuesdays/Thursdays 10:10-12:00; Wednesday X hour 3:30-4:20pm

Th 9/13	History and the method	Dugatkin Ch 1., critique "typological thinking"
Tu 9/18	Heritability	Dugatkin Ch 2, critique "heritability of IQ"
Th 9/20	Selection	Critique Brodie et al.
Tu 9/25	Levels of Selection	green beard 3 papers
Th 9/27	Social Learning	Dugatkin Ch 4 greenbeard critique
Tu 10/2	The evolution of Sex	Dugatkin Ch 3&6, "phylogeny of asexuality"
MIDTERM I (X HOUR)		
Th 10/4	sexual differentiation	Dugatkin Ch 3&6, critique "homosexuality"
Tu 10/9	Mating systems and parental investment	Dugatkin Ch 7, "sexual conflict"
Th 10/11	Male strategies	Dugatkin Ch 7, critique "silent night; ARTs"
Tu 10/16	Female strategies	Dugatkin Ch 6, "r-K density cycles"
Th 10/18	Games animals play	Dugatkin Ch 14, critique "games lizards play"
Tu 10/23	Optimal Foraging	Dugatkin Ch. 10, critique "spandrels of San Marco"
MIDTERM II (X HOUR)		
Th 10/25	Foraging Ecology	Dugatkin Ch 11,
Tu 10/30	Predator vs. Prey	Dugatkin Ch 12, critique "bat sonar" critique
Th 11/1	Sensory systems and communication	Dugatkin Ch 13, "cichlid sensory systems"
Tu 11/6	Speciation mechanisms	Critique "speciation in real time"
Th 11/8	Dispersal and Migration	handouts critique "speciation in a ring"
Tu 11/13	Evo_Devo of behavior	Handouts