

Biology 4324: Genetic, Environmental and Evolutionary Bases of Animal Behavior
Spring 2020, Tue/Thu, 3:00–4:20 pm, Location: Business Administration Bldg., Rm. 313

Instructor

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Definitions and Objectives

Animal behavior, in the most general sense, refers to what animals do. Under such a broad definition, an animal's behaviors coordinate its internal systems (neural, hormonal, metabolic) with the external world in a manner that ensures survival.

In this course, we will explore how animal behavior is organized within a variety of contexts: feeding, habitat selection, migration, territoriality, predation, communication, mating and reproduction, parental care, and social behavior. Examples will be drawn from representatives throughout the animal kingdom, from insects to humans. We will also emphasize throughout the course how animal behavior is studied at many different levels of analysis, from small molecules, to large scale models of animal interactions, and how much of the ways in which scientists study behavior is fueled by our understanding of how natural selection pressures help shape behavior in individuals across many generations.

The course is intended for advanced undergraduate students pursuing careers in natural history, evolution, ecology or ethology. It is also a useful adjunct for students interested in pursuing studies in organismal biology, neuroscience and physiology; where internal mechanisms controlling animal behaviors are emphasized.

Course organization and grading

Attendance to lectures is strongly recommended. Although slides from lecture presentations will be posted ahead of time, they alone will not suffice in preparing you for the exams. Four exams will each contribute 25% toward your total grade (100% total). Note that there is no "final exam", just four equally weighted exams, each of which is non-overlapping and non-cumulative. Grading is on a straight scale: A (90–100), B (80–89), C (70–79), D (60–69), F (below 60).

Text

1. *Animal Behavior, Eleventh Edition* by Drs. Dustin R. Rubenstein and John Alcock. (2018); Published by Oxford University Press.

Prerequisites

Students must be undergraduates in good standing who have completed introductory biology.

Policy on Academic Dishonesty

Students caught cheating or plagiarizing will receive disciplinary action and will be reported to the Dean of Students.

Accessibility

If you have or suspect you have a disability and need accommodations, contact the Center for Accommodations and Support Services (CASS) at (915) 747-5148 or e-mail their office at cass@utep.edu. They are located Mon – Fri, 8 am – 5 pm; in Union Building East, Rm. 106; and on the web at <http://sa.utep.edu/cass/>.

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| <u>Week</u> | <u>Date</u> | <u>Lecture</u> | <u>Topic Covered</u> | <u>Reading(s)</u> |
|-------------|------------------|----------------|--|--------------------------|
| 1 | 21 Jan 23 Jan | 1 2 | Introduction to Animal Behavior I Introduction to Animal Behavior II | Syllabus, Ch. 1 Ch. 1 |
| 2 | 28 Jan 30 Jan | 3 4 | The Integrative Study of Behavior I The Integrative Study of Behavior II | Ch. 2 Ch. 2 |
| 3 | 4 Feb 6 Feb | 5 | Genetic/Developmental Bases of Behavior I No class on this day / Dr. Khan at NIH panel | Ch. 3 |
| 4 | 11 Feb 13 Feb | 6 7 | Genetic/Developmental Bases of Behavior II Neural Basis of Behavior I | Ch. 3 Ch. 4 |
| 5 | 18 Feb 20 Feb | | Exam #1 (covering Lectures 1–6) 8 Neural Basis of Behavior II | Ch. 4 |
| 6 | 25 Feb 27 Feb | 9 10 | Neural Basis of Behavior III Neural Basis of Behavior IV | Ch. 4 Ch. 4 |
| 7 | 3 Mar 5 Mar | 11 12 | Physiological Basis of Behavior I Physiological Basis of Behavior II | Ch. 5 Ch. 5 |
| 8 | 10 Mar 12 Mar | 13 14 | Physiological Basis of Behavior III Avoiding Predators & Finding Food I | Ch. 5 Ch. 6 |
| 9 | 17 Mar 19 Mar | | SPRING BREAK | |
| 10 | 24 Mar 26 Mar | | Exam #2 (covering Lectures 7–13) 15 Avoiding Predators & Finding Food II | Ch. 6 |
| 11 | 31 Mar 2 Apr | 16 17 | Territoriality & Migration I Territoriality & Migration II | Ch. 7 Ch. 7 |
| 12 | 7 Apr 9 Apr | 18 19 | Animal Communication I Animal Communication II | Ch. 8 Ch. 8 |
| 13 | 14 Apr 16 Apr | 20 21 | Animal Communication III Reproductive Behavior I | Ch. 8 Ch. 9 |
| 14 | 21 Apr 23 Apr | | Exam #3 (covering Lectures 14–20) 22 Reproductive Behavior II | Ch. 9 |
| 15 | 28 Apr 30 Apr | 23 24 | Mating Systems Parental Care | Ch. 10 Ch. 11 |
| 16 | 5 May 7 May | 25 26 | Social Evolution & Social Behavior Human Behavior | Ch. 12, 13 Ch. 14 |
| | 14 May | | Exam #4 (4:00 – 6:45 pm, covering Lec. 21–26) | |