

Biology 4324: Mechanistic and Functional Bases of Animal Behavior

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Dr. Seymoure's Office Hours Biology Building 402: Monday 1:30pm-2:30pm & Tuesday 1:00pm-2:00pm
Spring 2025 Lectures: Monday and Wednesday 4:30pm – 5:50pm; Location: PSCI 208

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Course: 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 and reproduction. In this course, we will explore how animal behavior is organized (*i.e.* "The ABC's of Animal Behavior") within a variety of contexts: feeding, habitat selection, migration, territoriality, predation, communication, mating and reproduction, parental care, and social behavior. We will study ubiquitous and unique (crazy!) behaviors across the animal kingdom, as well as from plants and fungi for comparison. A main emphasis of this course is how animal behavior is studied at different levels of analyses - from small molecules to large scale models of animal interactions – and how natural selection has selected for adaptive behaviors. This course is intended for advanced undergraduate students pursuing careers in animal behavior, psychology, evolution, physiology, neuroscience, biomedical research, conservation, and natural history. As most of biomedical research depends on testing medical treatments on non-human animal models, having biomedical researchers understand the basis of animal behavior is crucial!

Class sessions will focus on active learning techniques and thus attendance is required. Although there will be short lectures throughout each class period, you will be frequently working in pairs or larger groups, and will be actively engaged in real-time assessment. At the end of each class session, each student will be highly encouraged to submit a "muddy-point clarification" anonymously via iClicker, upon which the student will be able to express any concerns anonymously regarding to the material and/or the course. Please use this iClicker opportunity to bring any confusion or issues you may be having with the course to my attention. Also, please let me know if there is something you really like! The "muddy-point clarification" will greatly help me in personalizing your educational experience throughout this course.

Prerequisites: Undergraduates in good standing who have completed introductory biology.

Required Text: Animal Behavior: Concepts, Methods, and Applications 4th Edition, Nordell & Valone. Oxford University Press. I realize that textbooks add burdening costs to the already expensive nature of college. Fortunately, this book has more affordable options as you can rent the e-book for 180 days for \$65 at Oxford University press.

<https://global.oup.com/ushe/product/animal-behavior-9780197666913?cc=us&lang=en>

Note: Material in this text could be assessed during exams and other assignments without being directly covered in class. I suggest you read the assigned reading before the class and then review the reading after lectures.

Accessibility: If you have or suspect you have a disability and need accommodations, please contact the Center for Accommodations and Support Services (CASS) at (915) 747-5148 or email their office at [cass\[at\]utep.edu](mailto:cass[at]utep.edu). They are located on the web at www.sa.utep.edu/cass/.

You belong in this course! The department of biological sciences at UTEP and I embrace an intellectual community enriched and enhanced by its myriad students. I am committed to supporting students from our borderland region as well from other regions. I welcome students from around the country and the world, and their unique perspectives, which enrich our learning community. We support students whose primary language is not English. I am available for you during my office hours and by appointment to aid in understanding the material in a more catered approach to your learning needs. Please use my office hours as a resource.

In an ideal world, science would be objective. However, much of science depends on human perception and thus is subjective. Furthermore, much of the human perception has historically been built upon a small subset of privileged voices. I acknowledge that the material presented in this course, has mostly been developed by white westerners and men. Most importantly, I also acknowledge that research covered in this class resulted from colonial and racist governmental policies, and in fact, some of the research presented here led to further systemic racism and oppression. My goal is to recognize these atrocities so that our current generation of scientists and future scientists can integrate sets of lived experiences for a more comprehensive understanding of science and thus a more productive and welcoming society. Lastly, I realize that my own privilege and experiences have led to my own inherent biases. Please contact me (in person, electronically, anonymously) if you feel that the course is not inclusive to you and/or have any suggestions to improve the quality and inclusivity of the course materials.

To create a more inclusive learning environment for you that supports your diverse experiences and perspectives, and honors your identity (including race, gender, class, sexuality, religion, ability, etc.):

Please inform me of your pronouns.

If you feel that your performance in the class is being impacted by experiences outside of class, please don't hesitate to talk to me (in person, electronically). I am a resource for you. Also, remember that you can submit anonymous feedback through "muddy point clarification" or slide a note under my office door.

I foresee that I will always be learning new techniques and approaches to create a more inclusive and effective learning environment. If something was said in class (by anyone) that made you feel uncomfortable, please talk to me about it (again anonymous feedback is always appreciated).

Policy on Academic Integrity and Academic Dishonesty: Please familiarize yourself with UTEP’s policy on Academic Integrity: <https://www.utep.edu/student-affairs/osccr/student-conduct/academic-integrity.html>. Students caught cheating or plagiarizing will receive disciplinary action and will be reported to the Dean of Students.

Attendance Requirements:

- 1) Attend all lectures. You are permitted 4 absences – I understand that life happens, and classes may not always be able to be your highest priority. The fifth absence will reduce your participation to 0 points and then each additional absence will drop your overall class grade by 10%. You do not need to notify me of your 4 absences; these are “freebies” and the high number of absences allowed is to enable self-isolation in the case of colds/viruses. If you foresee missing more than 4 classes due to extracurricular activities (e.g. Varsity Athletics, or Independent Research) or foreseen family/medical obligations – please inform me of these before the second week of the semester. We may be able to work around your other priorities. If these foreseen absences are not brought to my attention before the second week, it is unlikely that we will be able to plan other exercises and participation that will result in fulfillment of your required attendance in this course.

iClickers – This course will rely upon iClickers immensely, not only for quizzes and to check attendance, but more importantly to check for understanding of the material. Each class will start off with two clicker quiz questions that cover the reading assignment and previous material. You are responsible for having iClicker technology in the classroom – mobile devices are welcome as iClickers. Furthermore, as the iClickers are for checking material understanding, you will receive points each day for answering all of the questions and points for having the correct answer. Lastly, I do not intend to always use the focus mode of iCicker, but I do reserve the right to include information from the focus mode into my overall calculation of iClickers.

Grading:

Class and Group Participation (iClickers)	50
Class Quizzes	50
Ethogram and 4 Hypotheses and Predictions	100
Workbook 1	200
Workbook 2	300
Final Workbook	300

Class Quizzes: At the beginning of each class, there will be a 5-minute-long clicker quiz that will cover material from the previous classes as well as the reading assignment for that class. The total points are 50 and each quiz is worth 2.5 points. However, there will be around 26 quizzes and I will count up all quiz points at the end, so you could earn up to 65 points if you get perfect scores on all quizzes and do not miss any class.

Workbooks: As the course itself is comprehensive and builds upon itself each week, the workbook are cumulative in nature and understanding of the material from the first week will be needed for every workbook including the final workbook.

Grading is on a straight scale: A (100-90.0); B (89.9-80.0); C (79.9-70.0); D (69.9-60.0); F (below 60.0). Note – there will be no rounding up.

Make-ups: Overall – there will be no opportunities to make-up an assignment or exam that was missed.

Extra-credit opportunities: The only extra-credit opportunity is through the extra quiz points. You could earn up to 15 points extra-credit if you get perfect 2.5 points on all quizzes and don't miss any ☺

Contesting: If you would like to contest the wording of an assessment question or the answer to a question, email me. I will not listen nor remember the contesting if you bring it to my attention during class. If you can appropriately present your case, can rationally explain your point of view, you likely deserve credit (not guaranteed). Thus, if you want to contest the scoring of an assignment, email me and I will review your argument for the assignment, however, this will entail an entire review of the assignment and could result in regrading, with the potential for a lower grade. Contested grades are to be filed within one week of the grade being returned.

Tentative Lecture Schedule:

<i>Week</i>	<i>Dates</i>	<i>Topic</i>	<i>Readings</i>
1	1/22	Introduction to Animal Behavior & Science and Methods of Animal Behavior	Syllabus, Ch. 1
2	1/27 & 1/29	Evolution and Studying Animal Behavior, Ethograms	Ch. 2
3	2/3 & 2/5	Behavioral Genetics	Ch. 3
4	2/10 & 2/12	Sensory Systems and Behavior	Ch. 4
5	2/17 & 2/19	Communication	Ch. 5
5	2/20	Workbook 1 Released	Ch. 1-5
6	2/24 @ 11:59pm	Workbook 1 Due; No Class on 2/24	
6	2/26	Ethogram Assignment and Practice	“Handout”
7	3/3 – 3/5	Learning	Ch. 6
7	3/6 @ 11:59pm	Ethogram H & P Due	
8	3/17 & 3/19	Cognition	Ch. 7
9	3/24 & 3/26	Foraging	Ch. 8
10	3/31 & 4/2	Antipredator Behavior	Ch. 9
11	4/7 & 4/9	Dispersal and Migration	Ch. 10
12	4/14 & 4/16	Habitat Selection, Territoriality, Aggression	Ch. 11
12	4/17	Workbook 2 Released	Ch. 6-11
13	4/22 @ 11:59pm	Workbook 2 Due; No Class on 4/21	Ch. 6-11
13	4/23	Mating Behavior	Ch. 12
14	4/28 & 4/30	Mating Systems and Parental Care	Ch. 13 & 14
15	5/5 & 5/7	Sociality and Cooperative Behavior	Ch. 15 & 16
15	5/8	Final Workbook Released	
16	5/13 @ 11:59pm	Final Workbook Due	Ch. 1-16