BIOL5390 Behavioral Ecology

Spring 2026

Instructor Information: Dr. Katrin Kellner
Department of Biology
The University of Texas at Tyler
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Office hours: M, Tu, W, 4-5pm or by appointment

Course hours: Mondays, 5:00 pm – 7:45 pm

Location: RBN 04032

Course Description: This course is an introduction to the study of animal behavior from an evolutionary and ecological perspective. Animals change their behavior as they interact with other organisms, with their environment and these interactions change over time. Topics discussed will include genetic, hormonal, neurological, developmental, learning, and cultural mechanisms underlying the production of behaviors. The course will also investigate how survival value and evolutionary history shape behaviors within the contexts of foraging (food acquisition), avoiding predators, mating behavior and systems, habitat selection, social behavior, communication, and parental care.

Course Goals: Upon successful completion of this course, students should:

1) Be familiar with major concepts in the modern discipline of Animal Behavior.
2) Understand and be able to apply standard methods used to design, analyze and critique behavioral experiments.
3) Understand how to apply the scientific process to behavioral questions and be able to evaluate the use of the scientific process in papers from this field.

Learning Objectives: Students should be able to:

1) Explain how behavior links genetics, organisms and the environment.
2) Critically read journal articles.
3) Confidently interpret data and graphs.
4) Develop specific predictions from hypotheses about behavior, and design experiments to test those predictions.

Textbook:

Textbook: Dugatkin, LA. 2019. Principles of Animal Behavior. 4th Edition. Or an older version.

Other assigned readings will be distributed through Canvas.

Evaluation and Grading:

Grades will be assessed by in-class participation via paper discussions (student lead), a mid-term and one final exam. Grade distribution is as follows.

1) Attendance and Participation – 100 points
2) Paper presentation/discussion leader – 100 points
3) Midterm exam – 100 points
4) Final Exam – 100 points

Student grades will be assigned on a basis of a standard percentage scale of the total amount of points possible (400 points). Grades will be rounded using standard rounding (79.1 would be rounded down to 79, a C, 79.6 would be rounded to 80, a B).

90-100% A
80-89% B
70-79% C
60-69% D
<60% F

Tentative Schedule*

Week	Topic	Textbook chapter	Assigned Reading/Discussion
01/13	Course overview What is behavior, and why and how do we study it?	Chapter 1	
01/20	Evolution of behavior, phylogenies	Chapter 2	Presentation 1
01/27	Proximate factors: hormones, neurobiology	Chapter 3	Presentation 2
02/03	Molecular genetics, development	Chapter 4	Presentation 3
02/10	Learning & Cultural Transmission	Chapter 5/6	Presentation 4
02/17	Sexual Selection	Chapter 7	Presentation 5
02/24	Mating Systems	Chapter 8	Presentation 6

03/04	**Midterm Exam**		
03/10	**SPRINGBREAK!**		
03/17	Kinship	Chapter 9	Presentation 7
03/24	Cooperation	Chapter 10	Presentation 8
03/31	Foraging	Chapter11	Presentation 9
04/07	Antipredator behavior	Chapter 12	Presentation 10
04/14	Communication	Chapter 13	Presentation 11
04/21	Flex Topic		
04/26	**Final Exam week**		

*** Tentative Schedule – subject to change**

No classes: Martin Luther King, Jr. Holiday - Jan. 19, 2026

Spring Break - March 8-14, 2026

Last Day to Drop with a "W": March 30, 2026

Final Exam: TBD

Attendance & Participation:

Attendance and participation are required in this course and will be part of your grade. You are expected to come prepared to class and engage in discussions, ask questions etc. Textbook readings: You are expected to read the assigned textbook chapters, before the week we discuss a topic. These readings reinforce lectures and provide additional examples and thus help you better understand course material. You should also read the assigned paper for the week (distributed through Canvas). You can miss class with the usual, documented excuses (illness, family emergency, religious event, sporting event, etc.) but you are expected to catch up with any missed material and need to plan for your lab work.

Paper presentation/discussion leader:

Part of your grade will come from you presenting a paper and leading the discussion on that paper.

Exam policy:

This course has two exams, one mid-term and one final exam. If you miss an exam for an excused reason, you need to make arrangements for a make-up exam. Unexcused and unexplained missed work results in 0 points for that work.

CANVAS: Students should log onto Canvas ASAP and carefully read all announcements. Canvas and student email should be checked DAILY for new announcements or messages. On Canvas you will find lecture outlines, reviews for exams, videos, and much more that will be very helpful for you as you take this course. Another helpful tool is that all course grades will be on Canvas, so students will be able to view and calculate their current course grade at any time.

Academic Integrity: Students should be aware that absolute academic integrity is expected of every student in all undertakings at The University of Texas at Tyler. Failure to comply can result in strong university-imposed penalties. Be forewarned that possession of anything containing course content will be considered cheating, whether or not you actually refer to it during the exam. Also be aware that TALKING during an EXAM to anyone other than the instructor or proctor will automatically be considered cheating. It does not matter what you were talking about. This includes the use of cell phones (even if they call YOU) or any other electronic device that could be used to record test material. Violation of this policy will be considered cheating and treated accordingly. Penalties for cheating include anything from a zero on the exam or quiz during which the cheating occurred, up to an F for the course in question, at the discretion of the instructor

Usage of AI

UT Tyler is committed to exploring and using artificial intelligence (AI) tools as appropriate for the discipline and task undertaken. We encourage discussing AI tools' ethical, societal, philosophical, and disciplinary implications. All uses of AI should be acknowledged as this aligns with our commitment to honor and integrity, as noted in UT Tyler's Honor Code. Faculty and students must not use protected information, data, or copyrighted materials when using any AI tool. Additionally, users should be aware that AI tools rely on predictive models to generate content that may appear correct but is sometimes shown to be incomplete, inaccurate, taken without attribution from other sources, and/or biased. Consequently, an AI tool should not be considered a substitute for traditional approaches to research. You are ultimately responsible for the quality and content of the information you submit. Misusing AI tools that violate the guidelines specified for this course (see below) is considered a breach of academic integrity. The student will be subject to disciplinary actions as outlined in UT Tyler's Academic Integrity Policy.

For this course, AI is not permitted in this course at all.

To best support your learning, you must complete all graded assignments by yourself to assist in your learning. This exclusion of other resources to help complete assignments includes

artificial intelligence (AI). Refrain from using AI tools to generate any course context (e.g., text, video, audio, images, code, etc.) for an assignment or classroom assignment.

Student Resources

University Policies and Information