

Professor: Dr. Scott A. Kimball

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Office: Boyd Science Center, Mulvane 229

Office hours: M,W,F 9:30-11:20, 1:30-2:20 or by appointment

Meeting Time | Place:

Lecture M,W,F 8:30-9:20 | Library 312

Laboratory Th 12:30-3:15 | Mulvane 124

Course Description:

This course explores the proximate and ultimate evolutionary explanations for the behavior of animals. The role of scientific process in producing research discoveries is emphasized. There are three lecture and discussion periods and one laboratory session each week.

Prerequisite: BI 252

Required Texts:

- Lecture Text: Davies, N.B., J.R. Krebs, and S.A. West. 2012. *An Introduction to Behavioural Ecology*, 4th ed. Wiley-Blackwell. ISBN 9781405114165.
- Lab Manual: Exercises available online on Moodle
- 2 field notebooks – Rite in the Rain[®] Metric Field Notebook N^o 363 (4⁵/₈ in x 7 in)

Course Objectives:

Students completing this course should be able to:

- describe the role of genetics and the environment in the behavior of an animal.
- explain and interpret the survivorship and reproductive costs and benefits of animal behaviors.
- describe the proximate and ultimate causes of animal behaviors from physiological, ecological, and evolutionary perspectives.
- use methods of analyzing animal behavior to learn in open-ended lab and field exercises.
- generate new hypotheses, predictions, and ways of testing those predictions.
- fully participate in the hypothetico-deductive scientific method by developing a research project, collecting and analyzing behavioral data, and presenting the results in a professional oral presentation.

Grading:

The final grade is calculated on a percentage basis:

Lecture = 75%

Lab = 25%

Lecture Grading:

Weekly Quizzes = 40%

A short quiz will be given weekly at the beginning of lecture and lecture will follow immediately. All questions will come from the lecture, textbook, and class discussion from the preceding week's lectures. Each quiz may consist of multiple-choice questions, fill-in-the-blank, matching, true/false, and/or short answer questions. If you are absent for a quiz you will receive a zero. The lowest 2 quiz grades will be dropped. There are no make-up quizzes.

3 Hourly Exams = 30%

Each non-cumulative exam will cover approximately equal proportions of course material and will be organized around major themes in the course.

Final Exam = 15%

A cumulative exam will cover material from the lecture section of the course.

Group Assignments = 10%

Students will be assigned to work together in small groups to discuss and analyze biological questions related to lecture topics.

Attendance and Participation = 5%

Class participation is expected and only possible by attending every class. Contributions to class discussions, group activities, and asking/answering questions during lecture will ensure full credit, but more importantly, participation will provide you the best opportunity to succeed in this course.

Laboratory Grading:**Lab Reports = 60%**

For specified labs, each student will submit a laboratory report detailing the activities and results of field and laboratory exercises at the start of the first lab period following the completion of the lab exercise. See the lab report criteria section of the lab manual on Moodle for details about the lab report format.

Ethogram = 30%

Each student will complete an ethogram for a focal species of their choice. Ethograms will be presented to the class in the form of PowerPoint presentations.

Project = 10%

Each student will read a primary research article, propose a direction for future research by creating 3 testable hypotheses and predictions, and propose a design of a test of one of the predictions. The student will prepare a written report including a summary of the methods and major findings of the paper, a description of the proposed future research, and a description of limitations of their proposed experiment. Finally, the student will prepare a PowerPoint presentation summarizing their efforts which will be presented to the class during a lab period.

Grade Scale:

A	94-100%	A-	90-93%		
B+	87-89%	B	84-86%	B-	80-83%
C+	77-79%	C	74-76%	C-	70-73%
D+	67-69%	D	60-66%		
F	0-59%				

Attendance/Make-up Policy:

Attendance is mandatory and expected, but certain circumstances may require an isolated absence. It is the student's responsibility to notify the professor as soon as possible of the expected absence (absolutely no later than one day following the absence, in the case of an emergency) and to make necessary arrangements for lecture or laboratory materials. Lecture Power Point slides will not be made available to students. No make-up quizzes will be allowed.

It is a serious offense to miss a lab or lecture exam. If this happens a grade of zero will be assigned for the missed exam. It is the responsibility of the student to contact the professor prior to the exam to schedule a make-up. If a student fails to contact the professor prior to the absence/missed exam to make arrangements, a make-up may not be granted. Special considerations

may be made, on a case by case basis, if an exam is missed due to completely unavoidable circumstances. In this case, a student may be permitted to take a make-up exam if they contact the professor prior to the day of the next scheduled class. Each student must present a valid excuse at the time of the make-up. Make-up exams, if they are granted, must be completed within 1 week of the original exam date. Make-up exams will be administered at the convenience of the professor. Only one make-up exam may be granted per semester.

Note to Athletes: Athletes who expect to miss an exam or a quiz due to sanctioned activities must notify the instructor as soon as possible and in all cases before the week of the expected absence. In these cases, quizzes and exams may be administered in alternative formats or at earlier dates, depending on specific circumstances and at the discretion of the professor.

Students with Disabilities:

Baker University is committed to providing “reasonable accommodations” in keeping with Section 504 of the Rehabilitation Act and the Americans with Disability Act of 1992. Access Services coordinates accommodations and services for all eligible students with disabilities. If you have a disability and wish to request accommodations and have not contacted Access Services, please do so as soon as possible. Access Services is located on the Baldwin City campus in the Office of Student Academic Success (in Collins Library (lower level); 785-594-8352; sas@bakeru.edu). Information about Access Services can also be found at www.bakeru.edu/sas. If accommodations have been approved by Access Services, please communicate with your professor(s) regarding your accommodations to coordinate services.

Academic Honesty:

Students are expected to take responsibility for their own work and provide appropriate credit to the authors of works used by the student to complete course work. Please review the student handbook for a full description of the University’s policy on academic misconduct.

From the Student Handbook: Baker University expects students and professors to have solely completed or prepared the work or research that bears their name, and to acknowledge the materials and sources of others.

Students

1. Have the responsibility to do their own academic work.
2. Must acknowledge sources of their materials and material that is the work of others.
3. Have the responsibility to inquire of the professor when they are uncertain as to what constitutes proper acknowledgment.
4. Have the responsibility to inquire of the professor as to what materials and aids are permitted in testing and research work.
5. Have an obligation to know their rights and responsibilities as delineated in the Baker University Student Handbook.
6. Have the responsibility to know the University’s position with respect to academic misconduct as set forth in [the student handbook].

Honors Contracts:

Any student with a cumulative grade point average of 3.50 that is interested in taking this course for honors designation should talk to me about the details involved and fill in the necessary form, obtain the required signatures and meet with the honors program director to review the contract before

turning in the form to the Records Office. The last day to submit a proposal for an Honors Contract is the last day to add a course for the semester.

Credit Hour Definition and Associated Course Expectations: Consistent with best practices in higher education, Baker University subscribes to the federal definition of the “credit hour” endorsed by the Higher Learning Commission. Driven by intended learning outcomes and verified by evidence of student achievement, the “credit hour” is an institutionally-established equivalency that reasonably approximates not less than one hour of classroom (or direct faculty) instruction and a minimum of two hours of out-of-class student work per week for the duration of the course enrollment period. A 3-credit-hour course, for example, requires approximately 45 classroom contact hours, roughly 90 out-of-class work hours and approximately 135 total instructional hours over the course of a 15-week semester. In that this course carries 4 hours of credit (3 lecture, 1 lab), approximately 60 hours of classroom instruction and 45 hours of laboratory and field instruction have been planned over the scheduled 15-week period. In addition, students are expected to spend roughly 150 hours (10 hours per week) on out-of-class assignments which include: a) assigned text readings, b) reading-related exercises and associated Moodle forum postings, c) unit evaluation and final exam preparation, d) outside lab-related assignments, e) statistical and other homework problems, and f) literature review research and manuscript preparation.

Special Note: Behavioral Ecology is an intense course with a very fast pace. It is the responsibility of the student to keep up in class. Missing lecture or lab will almost certainly result in a lower course grade. It will be critical for students to keep pace by reading ahead in the chapters and by spending significant amounts of time outside of class studying and preparing for quizzes and exams. Utilize all available resources when studying, including lecture notes, text chapter review questions, figures and tables from the text and lab manual, and online resources. The formation of study groups/partners is strongly encouraged.

Tips for Success:

- Spend at least 10 hrs. per week outside of class studying for lecture and lab.
 - This does not need to take place all at one time (and is best if it doesn't). Keep a study journal with a list of the topics covered and the time spent on each to make sure you are allowing yourself enough time each day/week.
 - Break up your study time into manageable "units". Dedicate each study session to one subunit of the lecture/lab material and become comfortable with that unit before moving on to the next.
 - Eliminate distractions during study time. This means turn off all electronics, remove yourself from noisy environments, and let your roommates/family know that you will need time alone while you are studying
 - Do not get behind studying!! There is no extra time in the semester to catch up.
 - Pay special attention to the figures and tables in the textbook. They are very good at summarizing information and are often (though not always) cited in lecture.
 - Visit the text book website regularly and become familiar with the resources found there:
 - www.wiley.com/go/davies/behaviouralecology
 - Look for videos and images online. YouTube is a great resource for videos – though some videos are better than others.
 - Record the lecture. This can be done with a cheap MP3 recorder or smart phone placed at the front of the room prior to lecture. I do not give out my lecture PowerPoints, but I encourage you to record lectures so that you can go back and listen more carefully to what was said while you may have been writing.
 - Make a friend in class. A classmate can help you study, make sure you get missed notes, and add to a support network for you as you work through all of this new information.
 - Please ask for help (sooner than later!). I am always willing to help, but I need to know that you would like some assistance. Then we can see how I can best help you succeed.
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Lecture Schedule (subject to change):

Dates	Subject	Text Chapter
Week 1 Jan 25/27	Introduction to Behavioral Ecology Natural Selection in Behavioral Ecology	1
Week 2 Jan 30/Feb 1/3	The Scientific Method in Behavioral Ecology	2
Week 3 Feb 6/8/10	Costs and Benefits of Behaviors to the Individual	3
Week 4 Feb 13/15/17	Costs and Benefits (cont.'d)	3
Week 5 Feb 20/22/24	Self-defense and Anti-predator Behavior Exam 1 --- Feb 24	4
Week 6 Feb 27/Mar 1/3	Competition and Animal Behavior	5
Week 7 Mar 6/8/10	Living in Groups	6
Week 8 Mar 13/15/17	Spring Break (no class) --- WOOHOO!!!!	
Week 9 Mar 20/22/24	Mating Systems	9
Week 10 Mar 27/29/31	Sexual Selection and Sexual Conflict Exam 2 --- Mar 31	7
Week 11 Apr 3/5/7	Sexual Selection (cont.'d) Good Friday (no class April 7) --- YEEHAW!!!!	7
Week 12 Apr 10/12/14	Communication and Signaling	14
Week 13 Apr 17/19/21	Communication and Signaling, cont.'d Dialogos (no class April 19) --- WOWZER!!!	14
Week 14 Apr 24/26/28	Parental Behavior	8
Week 15 May 1/3/5	Social Behaviors; Cooperation	11,12
Week 16 May 8/10/12	Cooperation, cont.'d Exam 3 --- May 10	12
FINAL WEEK May 15	Final Exam --- Monday, 3:00-6:00 PM	

Laboratory Schedule (subject to change):

Date	Subject
Week 1 Jan 26	No Lab
Week 2 Feb 2	My Life as a Turkey Ethograms: Introduction
Week 3 Feb 9	Vigilance Behavior of Foraging Birds
Week 4 Feb 16	Nesting Behaviors of American Kestrels (part 1)
Week 5 Feb 23	Foraging Decisions by Squirrels and Crows
Week 6 March 2	Ethograms cont'd.
Week 7 Mar 9	Ethograms cont'd.
Week 8 Mar 16	No Lab – Spring Break!!!!
Week 9 Mar 23	Vocal Behavior and Mating Tactics of Western Chorus Frogs *Evening field trip!! Please plan accordingly.
Week 10 Mar 30	Flex date
Week 11 Apr 6	Ethograms Due Ethogram Presentations
Week 12 Apr 13	Project
Week 13 Apr 20	Nesting Behaviors of American Kestrels (part 2)
Week 14 Apr 27	Territorial Behavior in Red-winged Blackbirds
Week 15 May 4	Pollinator Behavior
Week 16 May 11	Presentations