

## **Animal Behavior**

Biology 3254

Spring 2013

Course Prerequisites: Biology 2227 (Principles of Ecology) with a C or better

Class meeting times: Tuesday & Thursday 3:30-4:50 pm at 332 Biology-Life Sciences

Dr. Brent Sewall

Office: 446A Biology-Life Sciences

Phone: 215-204-6115

Office Hours: Tuesday and Thursday 2-3 pm, and by appointment. I also will add extra office hours before exams at times to be announced later.

### *Course Description:*

Animals exhibit a wide diversity of behaviors that enable successful feeding, habitat selection, navigation, communication, social interactions, reproduction, and rearing of young. Why do animals behave in these ways, and why do animals differ in their behaviors? In this course, we will investigate the proximate (physiological and genetic-developmental) and ultimate (functional and evolutionary) explanations for these behaviors with an emphasis on ultimate explanations. In particular, we will investigate in depth how functional, ecological, and evolutionary processes shape animal behavior. We will study classic theories and major principles of animal behavior, weighing the experimental and observational evidence for each idea. We will illustrate concepts with examples from a wide range of taxonomic groups of animals in diverse ecosystems. We will also discuss some emerging theories in animal behavior and applications for conservation and human behavior.

This course will be taught with lectures, the textbook, supplemental readings, and student-led discussions of classic and contemporary articles from the primary literature. Students will therefore learn a variety of ethological approaches to explaining and predicting animal behaviors, and their evolutionary basis.

### *Course Objectives:*

By the end of this course, students will understand:

- distinctions between proximate and ultimate explanations of animal behavior,
- the ultimate functional, ecological, and evolutionary mechanisms underlying animal behavior,
- both foundational and contemporary theories of animal behavior, and
- the application of animal behavior concepts to other scientific and professional disciplines

By the end of this course, students will be able to:

- distinguish between proximate and ultimate explanations for animal behaviors,
- describe major concepts in animal behavior and evidence supporting these concepts,
- discuss the implications of major concepts in animal behavior,
- discuss the application of major concepts in animal behavior to conservation biology and to understanding human behavior,
- understand how concepts in animal behavior are developed through the process of scientific inquiry, and
- understand and critically evaluate articles from the primary literature.

### *Required textbook*

The required textbook for this class will be:

Alcock, John. 2009. *Animal Behavior: An Evolutionary Approach*, 9<sup>th</sup> edition. Sinauer Associates: Sunderland, Massachusetts. ISBN: 978-0-87893-225-2.

This textbook will be available at the campus bookstore. It is also available for rental as an 'ebook' via <http://www.coursesmart.com/9780878932252> at a discount. It is also available through a variety of online and other sources. Readings should be completed according to the course schedule listed below – please read chapters prior to class in order to fully understand the material in lecture.

### *Required supplemental readings from scientific articles*

In addition to textbook readings, I want you to read articles from the primary literature that animal behavior researchers read. Therefore, I have included some classic articles and some recent articles in animal behavior to illustrate and go into further depth on topics we are covering in lecture and in your textbook. Supplemental readings will be posted on the course website on Blackboard. Readings should be completed according to the course schedule – it is critical that you read these prior to the class period listed, so that you are able to participate fully in discussions and learn from them.

### *Attendance and Participation:*

Please also make every effort to attend and participate during class. If you are absent, you are still responsible for all the material covered in class, and I don't hand out my lecture notes. Slides will be available on the course website, but of course not all information conveyed will be on them. Therefore, make sure that you get the lecture notes from a classmate if you are absent.

Further, in this course, in addition to learning from my lectures and from the readings, students will learn from each other, especially during discussions and student presentations. Since we will engage in a lot of active learning activities in class, it is essential for your sake and for that of your classmates that you are present and participating during these activities. I expect your regular attendance; you may lose points for absences. The points in the 'participation' portion of your grade are also not automatic. For example, while I don't expect everyone to say something to the whole class in every lecture or discussion, you are expected to engage fully in small group activities, and the whole class should hear your thoughts on a number of occasions during the semester. *I will also be looking for informed discussion and questions that together illustrate that you have prepared fully for class.* This is especially important during the discussions.

### *Preparing for Discussions*

We will have several discussions throughout the semester, during which we will discuss scientific articles. The point of these discussions will be to engage in an in-depth discussion of the topic, and it will not be possible to go into sufficient depth if you haven't read the article prior to class. So I am requiring that everyone read the assigned readings prior to class, and in the discussion it will be assumed that you have already read and are familiar with the assigned readings. To be fully prepared, I recommend that you take a careful look at the following elements:

- Identify why, according to the author, the topic is important
- Identify the main objective or objectives of the study
- Understand the main methods or approach used in the study
- Identify the most important results. Pay special attention to figures and tables.

- Determine what the key take-home message of the paper is
- Identify important implications of the study for understanding animal behavior
- Identify the strengths and weaknesses of the study
- Consider carefully how the article relates to topics from lecture or the textbook readings
- Identify any questions that you still have about the article (or the implications of its findings), and come prepared to ask the student leaders or discuss in small groups.

### *Online Quizzes*

To help encourage your preparation for discussions, I will have a series of online quizzes throughout the semester. These will be due at 3pm on the date listed on the course schedule – however, I encourage you to work well in advance of class to ensure that you don't run into any last-minute connection issues or other problems. You can access these online via Blackboard outside of class time. The online quizzes are open book / open notes / open article – in other words, you are free to refer to these sources of information as you complete the quizzes. However, you must do these quizzes on your own. Completing these quizzes with others, discussing questions, sharing answers, or otherwise helping or getting help from others will be considered cheating. Quizzes will focus on the supplemental readings (scientific articles), and will cover the key elements of the article (see list in the previous section of the syllabus).

### *Student-led discussions of scientific articles*

Each student will present one discussion during the semester. You will present together as part of a group of students (~5 students in a group). In your discussion, ensure that all students:

- (1) understand the main ideas of the article;
- (2) can explain the key evidence presented in the article (such as in important figures or tables) in support of those main points;
- (3) can discuss the strengths and limitations of the study;
- (4) can discuss the implications the article has (or at least had at the time it was published); and
- (5) understand how the article fits into our broader understanding of animal behavior (especially how it relates to material we are covering in the textbook and lecture). Refer to specific points or concepts from textbook or lecture to indicate how each article is related.

In terms of format: I would like to see each member of your group lead small-group discussions for part of the discussion period. The point is to generate in-depth discussion among students and to deepen their understanding. For this reason, please do not plan to lead simple quiz games, which only cover factual information or otherwise summarize in a superficial way without deepening understanding of the concepts highlighted in the article. Instead, find ways to engage students in the conceptual aspects of the material. Also, one of the most important contributions you can make to student understanding is to link the material back to the broader themes of the course.

One possible format that I have seen work is as follows: (1) a short introductory summary of the research article to the full class, accompanied by a PowerPoint presentation (remember, though, that all students have already read the article, so this does not have to be extremely detailed – however it should quickly summarize the objective and key elements of the study); (2) break up the class into several small groups, each led by one of your group members, to conduct a more in-depth discussion of the article and its implications; and (3) a large group discussion reporting back from the small groups to make sure everyone understood all the main points. However, I encourage you to be creative with how you handle each of these three elements. Be sure to get students actively participating in some way, such as by discussing main ideas or participating in an in-class activity. *I am happy to*

discuss with you in advance of your presentation the format you are thinking of using, and any questions you might have about the article(s). Please send me a copy of your PowerPoint slides, handouts, or other visual aids at least an hour before your presentation so I can add them to the course website and bring them to class. Be sure to also bring an electronic copy of your slides with you to class on your own thumb drive so you can load them onto the class computer.

You will have 35-40 minutes for your discussion. This may seem like a lot, but if you are truly engaging students in the material, the discussion will take some time. Your work in preparing and leading this discussion will be worth 10% of your overall grade in the course. Except in exceptional circumstances, all students in the same group will receive the same grade for leading the discussion.

### *Midterm Exams and Final Exam*

There will be three midterm exams in this course. The second and third midterms are cumulative, though 2/3 or more of the points on each will be from the material since the previous exam. Exams will be largely multiple choice, but will also include short-answer or other question types. Midterms will be worth varying percentages of the grade; see 'Grading' below.

### *Grading:*

The grades in this course will be apportioned as follows:

Midterm 1	15%
Midterm 2	22%
Midterm 3	28%
Online Quizzes	18%
Student Presentations on Scientific Articles	10%
Attendance & Participation	<u>7%</u>
	100%

### *Absences on presentation or exam days*

If you have a conflict on the day you are scheduled to present, or on an exam day, please notify me as far in advance as possible. I will try my best to be flexible and offer a make-up exam if you have an occasional, legitimate conflict due to something that will otherwise provide you a significant opportunity for learning or professional development or a university-sanctioned activity. In addition, if something unexpected and unavoidable turns up at the last minute, such as an illness or family emergency, then notify me as soon as possible after this occurs. I may require an excuse, such as a doctor's note, before scheduling a make-up exam.

### *Grades:*

Grades will be assigned based on the overall weighted score at the end of the course. This course is graded on an absolute scale: a score of 93% or better will receive an A, a 90% will receive an A-, a 87% will receive a B+, and so on; thus a 60% or better is required to receive a D-. *There is no limit on the number of students that can get a top grade, but getting an A or B in this class is not easy.*

To ensure that I haven't graded you unfairly, I also examine a relative scale (i.e., a 'curve'). On this scale, everyone at or above the 85<sup>th</sup> percentile will receive an A- or better, everyone at or above the 60<sup>th</sup> percentile will receive a B- or better, and everyone at or above the 20<sup>th</sup> percentile will receive a C- or higher. This relative scale will be applied at the end of the course on overall grades. I will not

examine the curve except at the end of the semester. *At the end of the semester, I will give you the better letter grade on either the absolute or the relative scale.* Thus this works to your benefit.

In other words, if you earned a score of 93% you are guaranteed an A regardless of how other students in class did. (And, if everyone earns a 93% or better, everyone gets an A.) But if you earned a score of 88% you would get at least a B+, but you might still get an even better grade depending on how other students in the class did. On the other hand, if you get a 70% but most students did better (and so you are below the 20<sup>th</sup> percentile), then no curve kicks in and you still get a C-.

I encourage you to work to get the grade you want on the absolute scale – that way you are sure. *Don't count on the curve rescuing you:* the overall distribution of grades in my courses usually works out pretty much the same with either method. However, the curve may possibly help some students at the end of the semester, if they did not get a top grade on the absolute scale, but still did well compared to other students in the class.

#### *Accommodations:*

Any student who feels s/he may need an accommodation based on the impact of a disability should contact me privately to discuss your specific needs as soon as possible but preferably within the first two weeks of class. In addition, please contact Disability Resources Services (see below for more information) to coordinate reasonable accommodations.

#### *Conduct:*

You may feel you can multitask or use smartphones and other electronic devices discreetly, but I and many of the students around you tend to find it disruptive and disrespectful to teaching and learning when during class you read or send text messages, consult your email, chat online, or otherwise are distracted by things not related to the course. Further, studies consistently show that users of text/chat, etc. are not aware of the degree to which they are distracted by this activity, or the extent to which their comprehension and performance on other tasks suffers while they use these devices. Therefore, *please turn off all phones, chat, & text before class.* Please do not leave them on a setting that can ring, buzz, or vibrate; this is distracting during class as well. Laptops may be used for taking notes or referring to readings, but not for social media, email, surfing the web, or other things unrelated to class. Also, during small group work, keep conversations focused on the topic we are studying; it is distracting to the rest of your group if two or more members engage in unrelated chatter. Please do this for your own benefit, and to avoid distracting to the rest of your group. Lack of engagement in the class could also negatively affect your attendance and participation grade.

In addition, all students are expected to follow Temple University's Student Code of Conduct, which prohibits "academic dishonesty and impropriety, including, but not limited to, plagiarism and academic cheating." The Code further states that "It is the student's responsibility to:

1. Foster an environment conducive to continued intellectual and educational stimulation within the university free from unlawful harassment by other members of the community; and
2. Foster the maintenance of physical and mental health, the safety and welfare of each member of the community; and
3. Respect the rights of others."

#### *How to do well in this course*

It is certainly true that if you work harder you do better. Hard work is most definitely a necessary prerequisite to obtaining a good grade. As a rough guide, most professors assume, when assigning readings and other work to students, that students will devote about 3 hours on average to

studying outside of class for every hour spent in class (thus, 9 hours of outside-class work in this course per week). Of course this will vary depending on many factors, including the amount of related courses you have taken in the past. Still, *hard work is necessary* to get a good grade.

However, hard work alone is not always sufficient for a good grade. The students who do best in my classes – and in most university classes – are those that not only work hard, but who attend regularly, are well-prepared for class, participate in class, and are proactive. Here what I mean:

First, *attend all class periods*. On discussion days, much of the learning comes from interacting in small and large groups, so if you are absent on those days, you will miss critical information that would be hard to make up. Also, keep in mind that since we meet twice a week, there are only ~7-11 lectures or discussions per midterm, so if you miss one you have missed a significant portion of the material for the exam. If you miss several classes during the semester, you are quite simply digging a hole for yourself, from which it is hard to emerge with a good grade. Try to attend all class sessions, and if you do miss a class, you should work extra hard to learn the material you missed.

Second, *prepare*. Complete all the readings prior to the class in which the material will be taught. We have a lot of material to cover; and simply won't have sufficient time to cover it all in class. I will cover key points and assume that you are reading to understand the rest. If you read in advance, then what I present will reinforce and strengthen what you have already learned from the reading. If you have not read in advance, you may find it difficult to keep up.

Third, *participate*. If you don't understand something, ask a question. If you think of an interesting implication of one of the concepts we are covering, then share it with the class. And join fully in the discussions and other activities. Participation is powerful in helping you to understand the material, and will help you improve learning among your classmates as well.

Finally, *be proactive*. If you find that you don't understand something, are falling behind, or are not satisfied with your performance in the course, then get additional help. I encourage you to contact one of the resources listed below and/or to come see me as soon as possible if you are concerned about your performance and don't know how to improve. Please note that there is little anyone can do to help you out at the very last minute, or after you have already received your final grade! On the other hand, I will most likely be able to help you to understand concepts or with your study skills to help you get back on the right track if you seek help as soon as you perceive a problem.

#### *Additional Resources:*

Here are a few additional resources on campus that may be helpful:

- Temple University Math and Science Resource Center. This is an academic support center to assist students who are having difficulty in math or science courses, or who are doing well but want help improving their study skills and performance. It is free to Temple University students, and is located at 1810 Liacouras Walk, or by phone at 215-204-8466 or online at <http://www.temple.edu/msrc/>.
- Tuttleman Counseling Services. This is a support center for a variety of educational, vocational, or emotional concerns. This center is free to Temple University students, and is located at 1810 Liacouras Walk, or by phone at 215-204-7276, or online at <http://www.temple.edu/studentaffairs/counseling/>.
- Disability Resources Services. If you think you might need an accommodation in this or another class, then contact DRS at 100 Ritter Annex or 215-204-1280 to coordinate reasonable accommodations. More information is available online at <http://www.temple.edu/disability>.