

Syllabus Fall 2018
Behavioral Ecology (IB 431, CRN 49658)
Tues, Thurs 11-12:20, 2083 NHB

Instructor

Alison Bell (439 Morrill Hall, 265-5469, alisonmb@illinois.edu), office hours by appt't

Prerequisites

IB 302 (Evolution) and IB 329 (formerly IB 429, Animal Behavior)

Course description and goals

Behavioral ecology is the study of animal behavior from an evolutionary perspective. This is an *advanced* course for upper-division undergraduates and graduate students, and emphasizes student-led discussions, presentations and participation rather than lecture, homeworks and exams. The instructor assumes that students already have a strong background in animal behavior and/or evolution, and expects students to play a key role in running and directing this course. Behavioral Ecology is grounded in solid theory; you will do math in this course. You will also spend a fair amount of time reading the primary literature. Your grade will be based on your participation in discussions and classroom activities, a research proposal and two homework assignments. You will be evaluated based on your abilities to learn independently, to synthesize material, and to communicate effectively both verbally and in writing.

In addition to surveying some major topics in behavioral ecology, the objectives of this course are for students to:

1. Learn how to read and discuss a scientific paper;
2. Learn how to write an effective research proposal

The course website is on Moodle.

Course readings

There is not a textbook for this course. However, students might find Alcock's Animal Behavior textbook (the textbook used in IB 329) to be a useful reference. The required readings are all scientific articles, which are available as PDF files in the course website. You are required to read the assigned reading *before* class starts.

COURSE STRUCTURE

Discussions

A substantial portion of the course focuses on reading and critically evaluating scientific papers. We will read empirical scientific articles and discuss them in small groups. The instructor will provide questions to help guide your reading of each paper; you should answer those questions as you read the paper before class. See separate document 'Reading and Discussing Scientific Papers' for tips.

In class, we will discuss the paper in two rounds. During the first round, students will break into groups of four-five students per group, with one pre-appointed discussion leader per

group. Each student will act as a discussion leader several times throughout the semester (estimate ~ 3 times, but the exact number will depend on the total number of students in the course). When you are a discussion leader, you will prepare and turn in a lesson plan for guiding the discussion at the beginning of class. The lesson plan will consist of a series of Questions for Comprehension, and a series of Questions for Discussion (see example from Trut 1999 available in the 'Questions for discussion' folder on Compass). The discussion leader will guide their peers through a discussion of the paper, focusing first on the questions provided by the instructor, then following their lesson plan. After ~15 minutes of discussion, the leader will appoint one student per group to be the anchor for that group, who will summarize the group's discussion for the second round. During the second round, new groups of four-five students per group will be formed, with unique members from the previous round of discussion, and with one anchor per group. The anchor will summarize the previous round of discussion in their group, and ask other students about what their groups discussed. After the second round of discussion, the class will come together to participate in a class-wide discussion focused on the strengths and weaknesses of the paper.

You can earn up to 150 points for leading discussions (generating a lesson plan, facilitating a discussion). Discussion leaders will be evaluated based on their lesson plan and their success at leading a stimulating and productive discussion. You can earn up to 100 points for participating in discussions (as a non-leader).

All students are required to carefully read the assigned paper prior to class.

One exciting feature of this class is that there will be Skype interviews with some of the authors of the papers we are discussing in class. You are expected to prepare questions for the authors prior to the interview.

Research proposal

Your main assignment for this class is to write a concise, well-devised 3-page (single spaced) research proposal to follow up on one of the readings in class.

Throughout the semester there will be several assignments associated with preparing your proposal. For example, before submitting the final draft, you will turn in a list and summary of relevant papers, you will brainstorm in small groups, you will turn in a summary of your hypotheses and predictions, you will work in small groups to review your peers' first drafts (peer review) and you will turn in a second draft to the instructors. Finally, you will turn in a final draft and give a presentation in class about your proposed project.

Note that it is highly likely that more than one of you will choose to follow up on the same study. This is not necessarily a problem because good studies prompt more questions than answers. However, *it is your responsibility* to ensure that you are not proposing the exact same project as one of your peers. Consult AB if/when questions arise. Also, you will need to start working on your proposal before we have discussed all the papers. You are welcome to skip ahead and choose a topic from later in the course, but be aware that it will be harder for you to get help/feedback from your peers if you are working on a topic that has not yet been discussed in class. Note that this might put you at a disadvantage, and you will need to be able to carefully explain the study to your peers if they have not yet read it.

Detailed information about how to prepare your proposal is available on Compass.

Homework assignments

There will be two homework assignments. Content will be drawn from lectures, discussions and required readings.

GRADING

- **Discussions** **250 points**
 - Acting as discussion leader, lesson plan (150 points)
 - Participation in discussion (100 points)
- **Participation** **100 points**
 - Participation in lecture: pop quizzes, in-class activities, etc
- **Proposal** **400 points**
 - List of papers (20 points)
 - Brainstorming (20 points)
 - Hypotheses and predictions (30 points)
 - Rough draft of experimental procedure (30 points)
 - First draft + Evaluation of another student's first draft (50 points)
 - Second draft of proposal (90 points)
 - In-class presentation (90 points)
 - Final draft of proposal (70 points)
- **Homework** **250 points**
- **Total:** **1000 points**

Grades will be evaluated on an absolute scale: 930-1000 A; 900-929 A-; 880-899 B+; 830-879 B; 800-829 B-; 780-799 C+; 730-779 C; 700-729 C-; 680-699 D+; 630-679 D; 600-629 D-; <600 F

If no student in the course earns the entire 1000 total points possible, the grading scale will be shifted down. For example, if the highest point total in the course is 990 points, then students earning 920-990 points will earn an 'A', students earning 890-919 points will earn an 'A-', etc. The grading scale for undergraduates will be calculated separately from the grading scale for graduate students.

COURSE POLICIES (the fine print)

Assignments

Assignments are due at the beginning of class on the date marked on the syllabus. Failure to do so will result in a one letter grade reduction in the assigned grade for every day it is overdue. When it has been overdue for one week, a zero will be given.

Re-grading policy

If you believe that an exam or assignment has been graded incorrectly, submit a written request for a re-grade to the instructor within one week of when the graded exam or homework was returned. The written request should include an explanation of your position and be attached to the graded exam. If you suspect that a simple addition error has been made, speak to the instructor to have the error corrected.

Credit/No-credit policy

To receive credit for this course if you enrolled on the pass/fail basis, you must 1) show up and turn in all assignments or 2) receive the equivalent of a D or higher in this class.

Academic integrity

If you cheat or plagiarize, the university guidelines for disciplinary action will be followed. Any cheating or plagiarism will be reported to the Dean of Students and will result in failure of this course. For more information on UIUC policies, see http://www.admin.illinois.edu/policy/code/article_1/a1_1-401.html

Attendance policy

Students are expected to attend each class session. Almost all of the material on the final exam will come from topics discussed in class. I will post the slides used in class on the course website but I strongly discourage you from relying too heavily on these because the best way to learn this material is to hear the explanation of a concept that is given in class, and to participate in the classroom discussions and group activities.

Accommodations

I encourage students with disabilities to meet with me at the beginning of the semester to discuss any needs. Any student with a documented disability (e.g. physical, learning, psychiatric, vision, hearing, etc.) may arrange accommodations with the Division of Disability Resources and Educational Services. See www.disability.illinois.edu

This schedule is meant to be a general guide and is subject to change - listen for announcements in class.

	Week	Date	Topic	Deadlines	Reading
1	1	Tues Aug 28	Natural selection, genes and behavior		Trut 1999
2	1	Thurs Aug 30			Pope 2000
3	2	Tues Sept 4	Optimality theory		
4	2	Thurs Sept 6			TBD
5	3	Tues Sept 11	Game theory		TBD
6	3	Thurs Sept 13			
7	4	Tues Sept 18	Ideal free distribution & antipredator behav.	Paper for follow-up, 5-10 references	
8	4	Thurs Sept 20			Abrahams & Dill 1989
9	5	Tues Sept 25	Brainstorming in class,	-	TBA
10	5	Thurs Sept 27	Brainstorming in class	Summary of brainstorming	Dall et al 2015
11	6	Tues Oct 2	Guest: TBD		Storm and Lima 2010
12	6	Thurs Oct 4			-
13	7	Tues Oct 9	Mating systems and sexual selection	HW #1 due	Brennan et al 2010
14	7	Thurs Oct 11	Midway evaluations		
15	8	Tues Oct 16		Hypotheses	
16	8	Thurs Oct 18	Hormones and behavior		
17	9	Tues Oct 23			White et al 2002
18	9	Thurs Oct 25	Behavior and HIREC	Rough draft of experimental procedure	Caro & Sherman 2011, Sih 2013, Smith et al 2015
19	10	Tues Oct 30			
20	10	Thurs Nov 1	Individual differences and alternative strategies		Wilson et al 1993
21	11	Tues Nov 6			
22	11	Thurs Nov 8		1st draft to group, HW#2	

				due	
23	12	Tues Nov 13	Cognition		Aplin et al 2015
24	12	Thurs Nov 15		Evaluation of other student's 1st draft	Roth et al 2012
25	13	Tues Nov 20	Thanksgiving break		
26	13	Thurs Nov 22	Thanksgiving break	2nd draft	
		Tues Nov 27			
		Thurs Nov 29			
27	14	Tues Dec 4	In-class presentations of proposals	Presentations	
28	14	Thurs Dec 6	In-class presentations of proposals		
29	15	Tues Dec 11	In-class presentations of proposals	Final draft	