

BIOL 340 – EXPERIMENTAL ANIMAL BEHAVIOR

Fall 2015

Where: Olmsted Hall A71
When: MW 10:30am–12:30pm

Professor: Dr. Justin Touchon
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Office hours: M 1–3pm (or by appointment)

Email is the best way to contact me and I will try to respond promptly.

Do not expect a response before 9am, after 5pm or on weekends (although it may happen).

COURSE RESOURCES

Alcock, J. *Animal Behavior*, 10th Edition. Sinauer Associates Inc.

We will read 3 journal articles per week. Articles will be posted to the course Moodle site.

COURSE DESCRIPTION

The behaviors of animals have long fascinated biologists. The field of Animal Behavior thus has a long and storied history. Animal Behavior is also a constantly growing and evolving field, particularly as technology allows us to study animals in ways not previously possible. This semester we cover a great breadth of topics that fall under the umbrella of Animal Behavior, and we will attempt to understand where the field has come from and where it is going. In particular we will focus on the ways that experiments are used to isolate and understand animal behavior (hence the ‘Experimental’ in the course title).

This course will be divided amongst traditional instructor-led lectures, student presentations, and student-led class discussions. Each paper we read will have a designated person in charge of leading discussion. However, *it is very important that each person participate in each discussion* (even if you are not leading the discussion). You should read articles critically and try to discuss any shortcomings of the experiments described in the papers as well as how this experiment adds to our understanding of animal behavior. We will read both classic (i.e., old) and new papers in order to understand how the way that scientists study animals has changed (or perhaps has not changed). Class participation is a large part of your final grade, and this class participation grade will depend heavily on your attendance and level of involvement in the discussions. See more about participation below.

ASSIGNMENTS

Minor assignments

Daily questions about articles we read: For every article that we read, **you should come to class prepared with a two questions** to prompt discussion. These questions should stem directly from reading the article. For example, they might be based on pursuing further research on the topic, questioning particular aspects of the methods, questioning the results, relating the article to other research we have read, querying something you did not understand, something you found particularly interesting and would like to discuss with the class, or something else that you are curious about after reading the article. These are just examples. At the start of class you will give the questions to me and I will use them to help stimulate conversation when needed. Questions will be maintained anonymously to the class. **You are allowed to skip submitting questions for six articles.** Questions are due at the start of class.

Article synthesis: Each week we will read 3 journal articles based on that weeks topic (in week 12 we will read 4 articles). The general format will be to read one “classic” paper on Monday and two recent papers on Wednesday. Starting the week of Sept. 14, there are 11 topics in total (see schedule at the end of this document) and **you will be responsible for writing a synthesis of the articles for five of these topics**. Syntheses can be no longer than 1 page long (single spaced, 12 point font, 1 inch margins). The synthesis should *not* just summarize the articles but instead relate them to one another (e.g., did one article do a better job of answering its question? did they use similar or different techniques? were they asking similar or different questions? did they approach the same topic in different ways?) and discuss the modern articles in light of the classic work (e.g., how was the modern research influenced by the earlier work? did the newer work improve upon the classic one in some way?). Lastly, I will post a different question each week that should be specifically addressed in your synthesis. **Syntheses are due emailed to me by 5pm each Thursday.**

Major assignments

Leading discussion: We will read a total of 34 articles during the semester. Thus, each student (and me too!) will be responsible for leading discussion of a single article two times during the semester. The articles you are responsible for discussing have been assigned randomly, and I will ensure that no one is in charge of leading a discussion two weeks in a row. If you are leading discussion with someone else, you are encouraged to coordinate before class. Each time you lead discussion you should prepare a short (~10 minutes) presentation describing the article, providing any useful and necessary background information about the study system or terminology used and the results achieved. In general, your presentation should provide the class with any and all information that we need to be able to fully appreciate the research.

Grant proposal: There will be no final exam in this course. Instead, your final project will be a grant proposal (max. 12 pages double spaced, not including references or figures if needed, 12 point font, 1 inch margins) due on the last day before the final exam period (December 13). The grant proposal will be comprised of several parts: 1) Summary, 2) Introduction, 3) Research Goals, 4) Plan of Study, 5) Expected Results, 6) Impact and Importance, and 7) References. Although it is not required, you are strongly encouraged to consult with me about your ideas early in the semester. You are also welcome to consult with me throughout the writing process.

Writing a grant proposal is very difficult. To build towards this final goal, there will be several required preliminary assignments.

Grant proposal proposal: Due October 7 (last class before October break). The “grant proposal proposal” should not be seen as a rough draft, but instead as a summation of your ideas for the final project and evidence that you have been reviewing primary literature. More details will be given later, but your GPP should have 1) a brief description of the research question you want to explore, 2) a one paragraph description of relevant background information with proper citations, and 3) a references section with a *minimum* of five primary articles relevant to your topic.

Grant proposal rough draft: Due October 28. A full rough draft of your grant proposal will be turned in during week 8 and will be reviewed by your peers. The rough draft should include all

seven sections mentioned above and have a *minimum* of 10 references. More details will be discussed closer to the due date.

Grant proposal reviews: An essential part of formulating successful research ideas, and getting them funded (i.e., writing a successful grant proposal) is receiving constructive criticism of your ideas. Each student in the class will read and critique two grant proposal rough drafts. The proposal you are given will be anonymous but your review will be signed by you. This is to encourage fair and constructive criticism. I will review all proposals as well, meaning that all students will receive three constructive reviews of their proposal. The thoroughness and constructiveness of your review will be graded.

Response to reviewers: Due with your final grant proposal (December 13) will be a separate document that details how you have (or have not) incorporated the criticisms into your final proposal. When you write a manuscript for publication or submit a grant proposal for a second time, you are generally required to describe how you have addressed the reviews of the previous iteration. Sometimes this is as simple as describing how you followed the instructions of the reviewer. Other times, you may disagree with the reviewer and not follow their requests, but you must be able to justify your decision.

GRADING

Grade breakdown

Participation	30%
Attendance/discussion participation	(20%)
Leading discussion	(10%)
Minor assignments	25%
Article syntheses	(15%)
Daily questions about articles	(10%)
Major assignments	45%
Grant proposal proposal	(5%)
Grant proposal rough draft	(10%)
Grant proposal reviews	(10%)
Response to reviewers	(5%)
Grant proposal final draft	(15%)

Late assignments

It always benefits you to turn in assignments, even if they are very late. **There is a 5% penalty per day for late assignments**, with a maximum penalty of 50%. In addition, **it is mandatory to turn in all major assignments** in order to pass the course. In other words, if you fail to turn in one of the major assignments, you will not pass the class no matter your grade on remaining assignments.

ATTENDANCE

Attendance in every class is important. We will have discussions every class period, which cannot be made up at a later date. **Missing class will only be permissible if you have an official excuse** from the Dean of Studies office or Health Services. I always appreciate an email if you are going to miss class and anticipate having an official excuse after the fact (if you are sick, for example). Given that class participation is such an integral part of the course, **unexcused**

absences will result in 0 points for that days participation, whereas excused absences will result in that day simply not being counted towards your grade.

If there are religious holidays that fall during our class times, I will help you make up any work in class you might miss (if you anticipate missing class due to a religious holiday, please let me know ahead of time). If attendance becomes poor, you will be contacted by the Dean of Studies office.

ACADEMIC ACCOMMODATIONS

Academic accommodations are available for students with disabilities who are registered with the Office of Accessibility and Educational Opportunity. Students in need of disability accommodations should schedule an appointment with me early in the semester to discuss any accommodations for this course that have been approved by Office of Accessibility and Educational Opportunity, as indicated in your AEO accommodation letter.

GENDER PRONOUNS

If you prefer to use gender neutral or other alternative pronouns, please feel free to let me know. Similarly, if you prefer to be called by a name other than what is given to me by the college, just let me know.

GRADING SYSTEM (FROM THE VASSAR CATALOG):

<u>Percentage Points</u>	<u>Final Grade</u>
100–94	A
93.9–90	A-
89.9–87	B+
86.9–83	B
82.9–80	B-
79.9–77	C+
76.9–72	C
71.9–70	C-
69.9–67	D+
66.9–60	D
59.9 and below	F

A indicates achievement of distinction. It involves conspicuous excellence in several aspects of the work.

B indicates general achievement of a high order. It also involves excellence in some aspects of the work, such as the following:

- Completeness and accuracy of knowledge
- Sustained and effective use of knowledge
- Independence of work
- Originality

C indicates the acceptable standard for graduation from Vassar College. It involves in each course such work as may fairly be expected of any Vassar student of normal ability who gives to the course a reasonable amount of time, effort, and attention. Such acceptable attainment should include the following factors:

- Familiarity with the content of the course
- Familiarity with the methods of study of the course
- Evidence of growth in actual use both of content and method
- Full participation in the work of the class
- Evidence of an open, active, and discriminating mind
- Ability to express oneself in intelligible English

C–, D+, and D indicate degrees of unsatisfactory work, below standard grade. They signify work which in one or more important respects falls below the minimum acceptable standard for graduation, but which is of sufficient quality and quantity to be counted in the units required for graduation. Work evaluated as **F** may not be counted towards the degree.

COURSE SCHEDULE

Date	Topic	Suggested readings	Required reading	Assignments due
Aug. 31	<i>Animal behavior and evolution</i>	Darwin 1872, Origin of Species Ch. VIII	Alcock p. 293–298	
Sept. 2			Alcock p. 299–321 Lorenz 1958	
Sept. 7	No class – Labor day			
Sept. 9	<i>Experimental design and analysis</i>		Lehner 1987, Hurlbert 1984	In class experimental design project
Sept. 14	<i>Communication</i>	Alcock Ch. 4	von Frisch & Lindauer 1958	Article syntheses begin
Sept. 16			Halfwerk et al 2011 Taylor & Ryan 2013	
Sept. 21	<i>Predators and prey</i>	Alcock Ch. 5	Ryan <i>et al</i> 1982	
Sept. 23			Quinn & Cresswell 2004 Randall & Boltas King 2001	
Sept. 28	<i>Genetics of behavior</i>		Bastock 1956	
Sept. 30			Crews <i>et al</i> 2007 Robinson <i>et al</i> 2008	
Oct. 5	<i>Neural basis of behavior</i>	Alcock Ch. 12	Ewert 1974	
Oct. 7			Lim <i>et al</i> 2004 Hoke <i>et al</i> 2008	Grant proposal proposal
<i>Fall Break (week of October 12–16)</i>				
Oct. 19	<i>Development of behavior and learning</i>	Alcock Ch. 11	Marler & Tamura 1964	
Oct. 21			Spencer <i>et al</i> 2005 Heijtz <i>et al</i> 2011	
Oct. 26	<i>Kin Selection and altruism</i>	Alcock Ch. 2 & 9	Hamilton 1963	
Oct. 28			Pfennig 1999 West <i>et al</i> 2001	
Nov. 2	<i>Parental care</i>	Alcock Ch. 2	Dawkins & Carlisle 1976	Grant prop. rough draft
Nov. 4			Ghalambor & Martin 2001 Brown <i>et al</i> 2010	
Nov. 9	<i>Social behavior</i>	Alcock Ch. 3	Milinski 1987	
Nov. 11			Riehl 2011 Strandburg-Peshkin <i>et al</i> 2015	
Nov. 16	<i>Migration</i>	Alcock Ch. 6	Keeton 1971	Grant prop. reviews
Nov. 18			Rattenborg <i>et al</i> 2004 Holland <i>et al</i> 2006	
Nov. 23	<i>Sexual selection and mating systems</i>	Alcock Ch. 7 & 8	Davies & Halliday 1978 Ryan 1980	
Nov. 25			Brooks & Endler 2001 West & Packer 2002	
Nov. 30	<i>Hormones</i>	Alcock Ch. 13	Wingfield <i>et al</i> 1987	
Dec. 2			Godwin <i>et al</i> 1996 Hayes <i>et al</i> 2003	
Dec. 7	<i>End of semester wrap-up</i>			
Dec. 9	No Class – Friday Schedule			
Dec. 13		Final Grant Proposal and Response to Reviewers due		

A word about academic integrity:

Discussion of homework assignments with your classmates is encouraged, however, your assignments should be in your own words and should elaborate on your own ideas. Plagiarism is a serious offense at Vassar College.

The following information is from the Vassar Student Handbook:

Integrity of Academic Work

The Vassar degree should represent not only a high quality of intellectual achievement but also the performance of all work in the pursuit of that achievement in accordance with the highest standards of academic honesty and integrity. The basic principles inherent in such honesty and integrity are as follows:

1. Each student's work shall be the product of the student's own effort.
2. Each student shall give due and appropriate acknowledgment of the work of others when that work is incorporated into the writing of papers.
3. No student shall infringe upon the rights of others to have fair and equal access to library or other academic resources.
4. No student shall submit the same work to more than one instructor without prior approval of the instructor involved.
5. In accordance with these principles the following regulations have been set up concerning:

..... B. Plagiarism

Any form of plagiarism violates the integrity of the student's work. In cases of doubt, students should ask instructors, and instructors are requested to be definite and explicit in explaining the proper procedure for the work involved. The following are, however, general rules which apply in all cases:

1. Quotations must be clearly marked and sources of information or of an idea or opinion not the student's own must be indicated clearly on all written work, including examinations. This applies to paraphrased ideas as well as direct quotations.
2. Unless otherwise directed, every student working in a laboratory is expected to make all necessary measurements, drawings, etc., independently, from his or her own observations of the material provided. All records, including numerical data for working out results, are to be used by the student independently and as initially recorded. Unless otherwise indicated, all laboratory materials are to be kept in the laboratory.
3. Collaboration in preparation of written work may take place only to the extent approved by the instructor. This applies to prepared examination