Lectures: 202 Wilson, Tuesdays and Thursdays 12:30-1:45

Instructor: Professor Karin Pfennig
319 Wilson Hall
phone: (919) 843-5590
e-mail: kpfennig@unc.edu

Office Hour: I am available immediately after class and by appointment.

Course Goals:
The goals of this course are to examine how natural selection drives the evolution of behavior. A cost-benefit approach to behavioral analysis will be applied to topics ranging from feeding behavior to social behavior.

Course Structure:
This class will consist of lectures by the instructor and student-led lectures followed by class discussions. Even on weeks when you are not leading a discussion, you must read the assigned material carefully and be prepared to participate in the discussion. For more details on these discussions, see below.

Computer Usage:
Recent studies show that students who take notes by hand (as opposed to using a laptop) are better prepared for exams and have a better understanding of the material. Whether you use e-devices for note taking in lecture is up to you.

However, because electronics stifle discussion and personal engagement with classmates, no e-devices of any sort (computers, tablets, phones, etc) will be allowed during discussions (described below). Please bring hard copy print outs (and/or detailed paper notes) of the required readings to class. Only discussion leaders can bring a laptop for their ppt presentation, which will then be closed during the discussion forum.
Course Policies (Please read carefully and refer to them throughout the semester):

A. Course Prerequisite
You MUST have received a passing grade in Biology 201 to enroll in this class. If you have not fulfilled this prerequisite, you must drop the class. Taking a class without the pre-requisite is considered a violation of the Honor Code.

B. Readings

1. Textbook


2. Required Readings
In addition to assignments from the textbook, each week we will read two to three articles from the primary literature. These readings will reinforce lecture material and will serve as the basis for the student-led discussions (see below). Please note that you will be responsible for any material covered in these readings and discussed in class on exams. The readings are posted on the “Resources” page of our sakai site.

D. Office Hours
My office hour is indicated above. If you cannot make my office hour, I can schedule appointments with you on a limited basis. Please do not send questions regarding class material over e-mail. Instead, schedule time to meet with me or get together with class mates. Better yet, ask your questions in class—chances are that others have the same questions or confusion!

E. Exams
There will be two exams. The dates for the exams and exactly what lectures each will cover are given on the lecture schedule. The second exam will be administered during our scheduled final exam time period. Although the final exam will cover only the second half of the course, you will have the full three hours to complete it.

Exams will be based on the lecture material, the assigned readings and our discussions of those readings. Exams will stress concepts, and they may contain multiple-choice, short answer, problem-solving, and essay questions.

Make-up exams will be given only at my discretion, and only for emergencies. To be eligible for a make-up exam, you must have an "official" excuse (e.g, a note from the Dean’s office or a physician). A note stating that
you simply visited the health center will NOT qualify you for a make-up exam. Make-up exams may be given as oral exams.

If you cannot take an exam (including the final) at the regularly scheduled time, you may take the exam early (not late). This option is at my discretion and can only be done for excused University functions, or, in the case of the final exam, if you have too many exams in a 48 hour period and have an excuse from the Dean’s office.

F. Grade Protests

If you think that I have erred in grading your exam, please write a brief explanation of the problem on a sheet of paper, attach the exam in question to it, and leave both with me. Grade protests or grading questions of any sort will not be accepted via e-mail; I will not even answer such e-mails.

If you request a re-grade of more than two questions, I reserve the right to re-grade the ENTIRE exam; I also reserve the right to LOWER your score if I erred by assigning too many points.

All re-grade requests MUST be made within 10 days after exams are returned to the class. No re-grades will be made after that time has elapsed.

A final note: after grading exams, I may photocopy all of them or a randomly selected subset before returning them to you.

G. Discussions

As part of your course grade, you will participate in weekly discussions of readings from the primary literature. Discussions will be led by a group of at least two students. Individual grades will be based on group performance.

You are required to lead TWO discussions. Sign ups for discussion will take place in the first week of class. You may not change the discussion you have signed up for without permission of the instructor AND any such requests require at least 2 weeks notice.

Your responsibilities for these discussions will depend on whether or not you are the discussion leader.

If you are NOT LEADING a discussion, you are required to do the following:

1) **Post at least two questions based on each week’s assigned discussion reading on the sakai discussion board no later than 9 am on the MONDAY before the discussion** (please post your questions on the appropriate discussion forum, which are listed by the topic/date of the discussion). **10% of your final course grade will be based on your turning in satisfactory**
questions each week.

2) Come to class prepared to participate actively in the discussion; **5% of your final course grade will be determined by your class participation.** Attendance is taken and substantive contributions are noted.

**If you are LEADING a discussion**, you must do the following:

1) **Provide the class with a 15-20 minute overview of the reading material, which relates the issues from the primary literature to both the text and lecture material.** During this time, you should tell the class why the material is important and what the central messages of the reading were. Use of Powerpoint and the chalkboard is required—you are essentially giving a mini-lecture on the reading assignment. You MUST relate the material back to the lecture and the textbook reading; do not simply summarize—synthesize!

2) **Post your ppt** in a designated thread labelled “discussion summary” on the discussion board forum for your topic. **This must be done no later than 5 pm of Thursday following your discussion.**

**25% of your course grade will be determined by your class presentations.**

Sign up to lead discussions on the class sakai page. You must sign up on an empty page before you can sign on as a third member of a team on another topic.

Guidance on how to prepare an overview, lead a successful discussion, and write quality discussion questions is given on the last page of this handout. **The grading rubric I use to grade your discussions is posted on sakai.**

Finally, all postings to sakai are time stamped, which provides a record of whether due dates are met.

**J. Final grades**

The grading scheme for the class is as follows:

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Exam 1</td>
<td>30%</td>
</tr>
<tr>
<td>Exam 2</td>
<td>30%</td>
</tr>
<tr>
<td>Performance as discussion leader</td>
<td>25% (12.5% for each discussion led)</td>
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<tr>
<td>Questions for discussion</td>
<td>10%</td>
</tr>
<tr>
<td>Discussion participation</td>
<td>5%</td>
</tr>
</tbody>
</table>

I will calculate a final weighted total based on the above scheme. Your final class grade will be assigned based on that weighted total as follows:
A weighted score of: will earn you a grade no lower than:

- 93% or above A
- 90% to 92.9% A-
- 88% to 89.9% B+
- 83% to 87.9% B
- 80% to 82.9% B-
- 78% to 79.9% C+
- 73% to 77.9% C
- 70% to 72.9% C-
- 68% to 69.9% D+
- 60% to 67.9% D

The final cut-offs for each (or all) grade level(s) may be a few points lower than indicated above, based on the performance of the class as a whole and the final distribution of scores.

Final Grade Protests: Once final grades are assigned, they can only be changed in the event that your score was calculated incorrectly. All other grade protests must go to the Dean’s office per University policy.

Although I am sympathetic to the issues that students face throughout the semester, I will NOT assign higher grades to students who have lower scores than their peers for ANY reason. There are no opportunities for extra credit, no opportunities to “redo” any of the material, and no way in which I can take “special considerations” into account. Please do not even ask; I will not answer such e-mails, and I will not meet to “discuss your grade.”

K. Supplemental Information

How to prepare a successful overview

1) Start with the big picture. Identify the central, key concepts being addressed with the papers. Relate the material in the papers to material covered in lecture and in the assigned textbook reading—synthesize the material.

2) Provide an overview of what the authors did to test the concepts or questions. Do not get bogged down in detail; everyone should have read the paper(s), so there is no need to recapitulate the entire methods section. If, however, the methods were confusing and/or there were many question about the methods, use your introduction to clear up misunderstandings (e.g., with figures, diagrams or schematics).

3) Ask yourself: will the ppt presentation you have prepared help you (and your classmates) better understand the concepts? Will it help you understand the link between the primary literature and the material that is summarized in the text or
lecture? Can your ppt serve as an adequate study aid for exams? Have you successfully identified controversies, gaps in knowledge, contradictions or paradoxes, that will stimulate an interesting and thoughtful discussion?

_How to lead a successful discussion_

1) Come in with a plan. Know what issues you want to address ahead of time. However, be flexible if the discussion takes on a life of its own or takes an interesting turn. Let it proceed in the new direction; return to your “master plan” if the discussion stalls or gets bogged down (see below).

2) Use your own questions and those of your classmates to get the discussion rolling and to keep it rolling. Come prepared with your own questions to ensure that the discussion does not stall.

3) Do NOT simply make a list of all submitted questions and work through them one-by-one. Do NOT feel like you as leaders need to answer your classmates questions. You are leading a discussion, so let your classmates answer each others’ questions. Finally, address similar questions together to organize the discussion along broad lines. If some questions are nearly identical, present the one question that is best articulated or describes the confusion particularly well.

4) Once the discussion gets started, ease up and let your classmates talk. You do not need to respond to everything that others say; in the best discussions, everyone is speaking to each other rather than solely to the discussion leaders. Be prepared to redirect the conversation if we become bogged down on meaningless argumentation, but don't be too eager to shift topics if the class is confused and points need to be clarified.

5) Be fair to the author’s arguments. Present the author's position first—and fairly—before providing counter-arguments.

6) Avoid jargon. If it’s necessary to use special terms, make sure you define them.

7) Be prepared to support your arguments. The best way to do so is to read the material carefully. **You will also need to consult additional, outside readings for opposing views or to clarify points made in the assigned reading.** If you find particularly useful outside readings, provide these additional references in your ppt at the end.

_How to write a thoughtful discussion question_  
_(after thoughtfully reading a paper)_

1) First, read the material carefully. Make notes in the margins indicating material that is surprising, noteworthy, confusing or seemingly contradictory.

2) Ask yourself: how does this paper relate to concepts in the textbook or lecture? If
there are findings that seems inconsistent or paradoxical, formulate questions that try to get at why these inconsistencies or paradoxes may have arisen.

3) Next focus on the study itself. Are the conclusions that are drawn justified by the results or methods? If the authors had taken a different approach or used a different system, how might things have been different? Formulate questions and comments that get at these issues. However, it is trivial to ask something like “What would have happened if they did a similar study with fish instead of birds” unless you can provide justification for why those groups might differ. If posing such a question, provide a statement of your predictions/expected outcome based upon the textbook, other readings, and lecture. For example, you might state: “I wonder what would have happened if they did a similar study with fish instead of birds. Birds invest more in individual offspring than do many fish, so I would expect that sexual selection would be stronger in the bird system...” Such a statement provides a better opportunity for discussion and debate.

4) At the most basic level, you can ask questions that clarify your reading of the paper. If there was a section that was really confusing, ask questions to help clarify your (and your classmates’) understanding of the material. However do not simply say something like “Can you explain figure 2?” or “I didn’t get their measure of dimorphism.” Instead make an attempt to express your understanding and express why you find something confusing: e.g., “Figure 2 appears to show a positive relationship between parental investment and offspring growth. However, in the results the authors say they found no relationship between investment and offspring performance, which contradicts Fig. 2. Perhaps I did not understand Fig. 2, but I do not see how the authors made the conclusion they did.”
BIO 469 Lecture Schedule  
FALL 2017

Reading assignments from the textbook (abbreviated DKW) are in parentheses.  
All student-led discussions are based on articles from the primary literature.  
These additional, required reading assignments are posted on the sakai site in the  
"Resources" section.

Note: Except for those leading the discussion, no e-devices of any sort can be used during Student-led Discussions; bring hard copies of the papers and any notes with you to class for reference.

<table>
<thead>
<tr>
<th>Date</th>
<th>Lecture Topic</th>
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<tbody>
<tr>
<td>Aug. 22</td>
<td>What is Behavioral Ecology? (DKW: Chs. 1 and Ch. 2)</td>
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<tr>
<td>Aug. 24</td>
<td>Field Trip! Tour of Pfennig Lab</td>
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<tr>
<td>Aug. 29</td>
<td>Hypothesis Testing in Behavioral Ecology</td>
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<tr>
<td>Aug. 31</td>
<td><strong>Student-led Discussion (Hypothesis Testing)</strong></td>
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<tr>
<td>Sept. 5</td>
<td>Natural Selection and Adaptation (DKW: Ch. 1)</td>
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<td>Sept. 7</td>
<td><strong>Student-led Discussion (NS and Adaptation)</strong></td>
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<tr>
<td>Sept. 12</td>
<td>Adaptive Feeding Behavior (DKW: Ch. 3; pp 119-131)</td>
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<td>Sept. 14</td>
<td><strong>Student-led Discussion (Adaptive Feeding)</strong></td>
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<tr>
<td>Sept. 19</td>
<td>Communication (DKW: Ch. 14)</td>
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<td>Sept. 21</td>
<td><strong>Student-led Discussion (Communication)</strong></td>
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<td>Sept. 26</td>
<td>Fighting &amp; Assessment (DKW: pp. 116-119; pp. 397-411)</td>
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<td>Sept. 28</td>
<td><strong>Student-led Discussion (Fighting and Assessment)</strong></td>
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<tr>
<td>Oct. 3</td>
<td>Evolution of Cooperation (DKW: Chs. 11 &amp; 12)</td>
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<tr>
<td>Oct. 5</td>
<td><strong>Student-led Discussion (Cooperation)</strong></td>
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<tr>
<td>Oct. 10</td>
<td><strong>Exam Review</strong></td>
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<td>Oct. 12</td>
<td>NO CLASS—University Day Ceremony</td>
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<td>Oct. 17</td>
<td><strong>Exam 1 (covering lecture material, reading assignments, and discussion from Aug. 22 up to and including Oct. 10)</strong></td>
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<td>Oct. 19</td>
<td>NO CLASS—Fall Break</td>
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<tr>
<td>Oct. 24</td>
<td>Evolution of Sex and Sex Allocation (DKW: Ch. 10)</td>
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<td>Oct. 26</td>
<td><strong>Student-led Discussion (Sex and Sex Allocation)</strong></td>
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<tr>
<td>Oct. 31</td>
<td>Sexual Selection &amp; Mate Choice (DKW: Ch. 7)</td>
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<td>Nov. 2</td>
<td><strong>Student-led Discussion (Sexual Selection)</strong></td>
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<td>Nov. 7</td>
<td>Sexual Conflict (DKW: Ch. 7)</td>
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<td>Nov. 9</td>
<td><strong>Student-led Discussion (Sexual Conflict)</strong></td>
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Nov. 14  Evolution of Mating Systems (DKW: Ch. 9)
Nov. 16  Student-led Discussion (Mating Systems)
Nov. 21  FILM
Nov. 23  NO CLASS—Thanksgiving Break
Nov. 28  Cultural Evolution
Nov. 30  Student-led Discussion (Cultural Evolution)
Dec. 5   Final Exam Review
Dec. 8 12:00-3:00pm  Exam 2 (Final Exam) (covering lecture material, reading assignments, and discussion from Oct. 24 up to and including Dec. 5)

Please note that unforeseen events may occur during the semester that require a revision to the schedule. In the event of such circumstances, students will be notified of any changes to the schedule as soon as possible.