BIO 488/688 FALL 2013
BEHAVIORAL ECOLOGY
Course syllabus

Instructor: Dr. Vladimir Pravosudov

Lecture: FA 301; Tuesday & Thursday 9:30-10:45 pm

Office: FA 256

Office hours: Tuesday 3-4pm, or by appointment

Phone: 775 784 1271; email: vpravosu@unr.edu

Course Website:

http://wolfweb.unr.edu/homepage/vpravosu/Classes/classes2013Fall.html

(Please note that this is NOT a webCampus site!)

All current information about the course will be available on the website. Please check the website regularly for lecture outlines and home reading assignments. A copy of this syllabus and tentative lecture schedule are currently available on the website. Additional materials will be added as the course progresses. Lecture outlines will also be posted on the website but these outlines will not contain the entire content of each lecture and so might not be useful as replacements for missed lectures.

Text and supplementary materials:

Required Textbook: AN INTRODUCTION TO BEHAVIORAL ECOLOGY (Fourth Edition), N. B. Davies, J. R. Krebs and S. A. West (Please note that this is a new edition of this book!).

The textbook is available for purchase at the University bookstore or at Amazon.com (http://www.amazon.com/Introduction-Behavioural-Ecology-Nicholas-Davies/dp/1405114169)

In this course you will be required to read primary research literature. I will be regularly placing required readings on the course website (in pdf format). You should check the website regularly to download and read the assigned papers prior to class (please see me if you have problems downloading papers).
Lectures will contain material that might not be covered in the textbook so make sure you take notes. Lecture outlines will be available on the course website usually one day prior to each lecture.

**Course description and general objectives**

Behavioral ecology is a discipline that is concerned with the evolution and fitness consequences of behavior and therefore the main objective of this course is to learn about the relationships between animal behavior and its fitness consequences and how studying such relationships helps understanding the evolution of behavior. Behavioral Ecology is a subset of Animal Behavior. The field of Animal Behavior may be well characterized by four Tinbergen’s questions – development of behavior, function of behavior, survival value of behavior and evolution of behavior. Behavioral Ecology is focused on the last two Tinbergen’s questions. Behavioral ecology often relies on theoretical approaches and modeling to produce evolutionary hypotheses and predictions. In this course, students will get a firm grip on main directions of behavioral ecology including topics on economic decisions made by animals, evolutionary arms races in predators and prey, competition for resources, living in groups, fighting, sexual conflict, mating systems, altruism and signaling. Students will read primary current research papers on each topic in addition to reading the textbook. Students will be introduced to applying theoretical modeling to solving questions in behavioral ecology. Students will also be working on a writing project including a review of a chosen topic in behavioral ecology. *This course is NOT about diversity of behaviors in a variety of animal species; it is a course about principles of behavioral ecology and therefore the examples chosen represent the best fit to conceptual topics under discussion.*

**STUDENT LEARNING OUTCOMES**

1. Students will demonstrate their ability to read and understand primary research literature in the field of Behavioral Ecology during weekly quizzes throughout the semester.

2. Students will demonstrate their knowledge of the main concepts in Behavioral Ecology, the ability to interpret data, to relate data to conceptual hypotheses and to critically evaluate the data in relation to existing hypotheses during two in-class exams – the midterm and the final.

3. Students will identify and focus on specific conceptual questions, search and read primary literature related to these conceptual questions and critically evaluate empirical data related to conceptual hypotheses, all of which will be presented as a written paper at the end of the class.

4. Students will demonstrate their grasp of specific chosen topics in Behavioral Ecology by presenting their written project, including topic overview and critical evaluation of published literature in an oral presentation before the entire class at the end of the semester.

**Expectations**

I expect you to attend all lectures and read all assigned chapters and papers. Some exam/quiz questions will be based on lecture material not covered by the textbook, but some will be based on the assigned reading not covered in the lectures. Thus, studying both your lecture notes and the assigned reading is equally important to succeed in this class.
**Ethical and courtesy expectations**

- Please do not be late for lectures. In addition to disrupting the class, you might miss a quiz, which might be given at the beginning of the class. Please note that you **will not** be given extra time to complete your quiz if you are late to class.
- Please do not leave early before the class ends, as this would also disrupt the class. If you do have to leave early, please take a moment to notify me before the class. Quizzes might also be given at the end of the class.
- Please do not carry on irrelevant conversations during the lectures as this also disrupts the class and makes it difficult for me to lecture and for your classmates to concentrate on the lecture. *However, active participation in class discussions is encouraged.* If you have a question during the lecture, please raise your hand and ask.
- Please turn off your cell phones during the lectures! If your cell phone rings during the class or if I see you text messaging during the class, you will be asked to leave the room.
- Please do not copy any material from other students during exams and quizzes and from other published sources for your written projects – this constitutes cheating and will not be tolerated.

**ACADEMIC DISHONESTY STATEMENT** - Absolutely no cheating will be tolerated in this course. The first instance will lead to a warning and a zero for that particular work, a second instance will lead to failure in the class.

**DISABILITY STATEMENT** - Any student with a disability needing academic adjustments or accommodations is requested to contact both the instructor and the Disability Resource Center (Thompson Building - 107), as soon as possible to arrange for appropriate accommodations.

**Course format**

**Lectures:** Lectures may use a variety of media, including computer projection, overhead projector, chalkboard, and video clips. Note that a substantial amount of what happens in class **will not** be amenable to being placed on the website, so do not expect to be able to use lecture outlines posted on the website as a replacement for missed lectures. Lectures will contain material that is not available in the textbook so make sure you take notes. Note also that the exams will emphasize material covered in lectures (but not available from other sources) as well as assigned readings from the textbook and research papers.

**Lecture assignments**

**Textbook Readings:** I will regularly assign textbook chapters for home reading. These assignments will be posted on the website, usually a week prior to the target lecture. Assigned readings from the textbook will provide background and context for lectures and will cover some of the same examples that will be used in lectures. *Consequently it will help if you do the reading prior to attending the lectures.* Material in the assigned text readings that is not covered in lecture **will** be used for quizzes and exams.
Research papers: I will regularly assign research paper reading and I will provide these papers as PDF files on the course website, usually a few days prior to the target lecture. Some of these papers will be covered in lectures, and some will not, but all of them might be used during tests and weekly quizzes.

Testing

You will be evaluated on the basis of your performance on two exams (a midterm and a final), as well as quizzes and on a written project.

Quizzes. You will be given short quizzes (usually 4 questions – multiple choice, true/false, fill-in-the-blank, and short essay) once a week (on average). This quizzes will be given either at the beginning of the class or at the end and they will last no longer than 5-10 min. Quizzes will contain questions either about the material covered during the previous lectures and previously assigned reading or about reading material assigned for that particular day. There will be absolutely no make up quizzes but two of your lowest quiz scores will be dropped.

Exams. The midterm exam will cover the material during the section of the course immediately preceding the exam. The final exam will be comprehensive; you should expect integrative questions that require you to draw on material from the entire course. Exams will include only essay questions. Study questions will be provided on the website, but please be aware that the study questions will only provide guidance to the specific facts and conceptual topics you need to know. The exam questions will provide you with descriptive information about various observations in behavioral ecology and you will be required to explain these observations within specific conceptual frames. The test questions will rely on your understanding of the material rather than memorization of facts (even though some memorization is certainly required). You will also be asked to explain any of the covered concepts and provide examples illustrating these concepts.

Make-up exams will be allowed ONLY for excused absences with my approval (I will need official verification of illness or family emergency).

Grading

Your grade will be based on total points you earn for quizzes, midterm and final exams, and the group project. Contribution of each part of the course to your final grade will be as follows:

Quizzes - 25%
Midterm – 25%
Final – 25%
Written Project – 25%

Grading of the Written Project:

Presentation – 10%
Scoring Presentations of other students – 5%
Project - 85%
Grades will be assigned as straight percentages, with 100% being determined by the highest score on any given test, not by the highest number of points possible (unless of course somebody gets 100% correct). That is, if the highest exam score is 90%, then all exam scores will be divided into 90 to determine their percentage score (e.g., a score of 80 on that test would be 88.9%). Letter grade cutoffs will be (94%+: A, 90-93%: A-, 87-89%: B+, 83-86%: B, 80-82%: B-, 77-79%: C+, 73-76%: C, 70-72%: C-, 67-69%: D+, 63-66%: D, 60-62%: D-; <60%: F.

**Written project description**

Each student will write a research review paper of any chosen topic in behavioral ecology. This paper should introduce the topic and provide a review of this topic and *associated hypotheses* using peer-reviewed empirical research papers. In your project you are required to use at least 5 primary sources (original research articles). All papers should be clearly related to the main topic of the paper. Each paper should be summarized and linked to the main theme following the introduction. Each paper should also reflect hypothesis driven research rather than purely descriptive research. At the end of the class, each student will make a brief (10-15 min) presentation of their paper. **Project presentation is mandatory! Failure to give a presentation would result in failing the entire class!**

All chosen topics have to be approved. Please feel free to choose any topic in Behavioral Ecology. Use textbook as a source of various topics and feel free to discuss your ideas with me. Your topic should address a broad conceptual question (e.g. optimal foraging, mate choice, parental investment, etc) rather then a small question about a very specific behavior (e.g. how desert tortoise chooses a mate). In your paper you should talk about specific examples, but you need to address these specific questions within a broad conceptual frame. Here is a link to Behavioral Ecology journal ([http://beheco.oxfordjournals.org/](http://beheco.oxfordjournals.org/)), which is a great source to search for potential topics.

**Research paper topic must be chosen and approved by September 19.**

Please use “Web of Science” or “Web of Knowledge” websites to search for research papers on your chosen topic.

- You are **not allowed** to use encyclopedias, popular books/magazines or websites (with the exception of electronically downloaded papers from peer-reviewed scientific journals). **You also cannot use any of the papers that we use in class.**

- All literature must be properly cited (see examples below).

- You should use metric system and scientific names of all species mentioned in your paper.
  Scientific name should be used only the first time a species is mentioned in your paper; common species name then can be used throughout the rest of the paper.

- Your paper should be typed using 12 points true-type font (e.g. Times New Roman), double-spaced.

- Please do not use footnotes, endnotes and direct quotes.
→ If you decided to use tables, graphs or diagrams they should be included on separate pages at the end of the paper. Each table, graph or diagram should be on a separate page and they would be in addition to the minimum of 5 required pages.

→ Do not forget to cite the sources for the information used in the paper.

→ Please do not copy material from any published sources and from previous projects – this constitutes plagiarism and anybody who plagiarized their paper will get an F for the course. Please write your own paper and when you describe results found in literature (in your own words), make sure you cite the proper source. Do not quote; instead re-write in your own words.

All written papers are due on NOVEMBER 26, 2013.
I will not accept any late submissions.

Submission of the written project should be made through Turnitin.com
To log in the Turnitin.com website you need a class ID – 6760436 and a password - Pravosudov

Written project format and checklist (please make sure that your paper follows this format closely as you will be graded for formatting your paper!)

Your paper should contain the following items in exact order as listed below (everything should be double-spaced):

**Title (on a separate page)**
- Name, date, and course in upper right-hand corner on 1st page
- Clear and informative title that adequately reflects the topic
- Your name

**Abstract (on a separate page, immediately following the title page)**
- Succinctly present the major points of the paper including all the major hypotheses discussed. Abstract should stand on its own and be clear to anybody without reading the rest of the paper. Please do not use citations in the abstract!
- Abstract should be 250 words or fewer.
The following items should take a **minimum of 5 typed pages (double-spaced, 12 font)**. Again, this 5-page minimum **DOES NOT** include title page, abstract (should be on a separate page) and Literature cited.

- Clearly introduce the topic
- How is this topic relevant to the field of Behavioral Ecology? (Please do not just say because it is interesting, but explain in detail how does that topic fit into the broader scheme of Behavioral Ecology.
- What do we already know about the topic and what are the major hypotheses? After presenting the major hypotheses, please start describing at least 5 empirical studies.
- **For each study described in the project present the following:** (1) **what are the specific hypotheses this study was designed to test; (2) explain these hypotheses in detail; (3) what are the predictions tested? (4) what are the methods the study used to test these hypotheses and predictions; (4) what are the results and whether these results support or do not support the hypotheses tested.**
- After you describe all 5 studies following the instructions above, please discuss whether all of these studies agree on the hypotheses presented?
- If studies give conflicting results, what could be the problem?
- What would you do next to advance our understanding of the topic?
- Conclusions. In the conclusions, briefly re-state the major hypotheses discussed and whether the studies presented in your paper support or refute them. The concluding sentence should indicate future directions for investigating the chosen topic. Make sure the conclusion is a brief section rather then a repetition of what you wrote before.

Please be aware that these are just guidelines for your project, not required subheadings.

**Literature cited**

- List all literature used for this project (at least 5 sources).
- Present cited literature in alphabetical order by the last name of the first author.
- Follow CSE style used in the papers cited and see below for more details.

**Presentations (sample presentation is available on the course website):**

- Use PowerPoint for your presentations
- Clear and concise presentation of your project including literature review and your proposal within given time (10 min).
- Your presentation should be clear to everybody and it will be evaluated by the entire class.
- Make sure you don’t exceed your time too much or that your presentation is not too short.
Paper citation style:

_Citing papers in the main text of your paper:_

When writing your paper, make sure to cite proper references within text. Use the following format when citing your sources in the text of your paper:

- **Single author:** (Newman, 2005)
- **Two authors:** (Newman & Sellers, 2005)
- **More than two authors:** (Newman et al., 2005)

When several sources are cited they should be ordered chronologically.

**Example 1:** “Birds have been at the center of many investigations into biological questions about animal cognition (Krebs et al., 1989; Sherry et al., 1989; Krebs, 1994).

**Example 2:** Sherry et al. (1989) pointed out that ....

Make sure that you follow this format throughout your paper!

_Listing papers in Literature cites section:_

Please use the following format in your “Literature cited” section for the primary literature:


- Please note that we only use a volume (47) and not the issue when referencing a paper.
- Please make sure that all you references are listed in this format.

References should be presented in alphabetical order by the last name of the first author.

**MAKE SURE THAT YOUR PAPER IS FORMATTED ACCORDING TO THE INSTRUCTIONS ABOVE AND THAT ALL LITERATURE IS CITED CORRECTLY! No other formatting style should be used in this paper!**

**NOTE TO STUDENTS ENROLLED IN BIO688:**

Because you are enrolled in 688 portion of the course, your requirements for the written project are different from all other students. You are required to have a minimum of 8 references (as opposed to 5 references) and your project should be at least 7 pages long, not counting cover page and list of references (as opposed to 5 pages). Please see me for all details.

**IMPORTANT DEADLINES:**

September 19: Topics for research papers must be chosen and approved.
November 26: Research papers must be submitted via Turnitin.com
LECTURE SCHEDULE

Please note that this is only a tentative schedule and it is most likely to change. For the most current schedule please check regularly the course website.

All reading assignments including book chapters and papers in pdf format will be regularly posted on the website prior to each lecture!

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<tr>
<th>Lecture</th>
<th>DATE</th>
<th>LECTURE TOPIC</th>
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<tbody>
<tr>
<td>1</td>
<td>Aug 27</td>
<td>Course organization; Introduction to Behavioral Ecology</td>
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<tr>
<td>2</td>
<td>Aug 29</td>
<td>Natural selection, ecology and behavior</td>
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<tr>
<td>3</td>
<td>Sep 3</td>
<td>Natural selection, ecology and behavior; testing hypothesis</td>
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<td>4</td>
<td>Sep 5</td>
<td>Testing hypotheses; Economic decisions</td>
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<td>5</td>
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<td>6</td>
<td>Sep 12</td>
<td>Economic decisions</td>
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<td>7</td>
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<td>Predators vs prey</td>
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<td>8</td>
<td>Sep 19</td>
<td>Predators versus prey; topics for written projects have to be finalized and approved</td>
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<td>Sep 24</td>
<td>Predators vs prey; Competing for resources</td>
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<td>Oct 8</td>
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DEC 17       FINAL EXAM, 12:30-2:30