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### BIOE 406.00: Behavior and Evolution

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# BIOE 406 - Behavior & Evolution

## Course Information:

Instructor: Douglas Emlen

Teaching Assistant:

Term: Fall 2015

Credits: 3 or 4

Location & Time: HS 207 TR 11:10 – 12:30

## Course Description:

This course will introduce students to the diversity of behavior exhibited by animals. Ecological factors including competition, resource distribution, predation and the physical environment all affect how animals should balance their investment in growth, survival and reproduction. This course uses evolutionary theory as an explicit and rigorous framework for studying behavior in its natural ecological contexts. The behavior expressed by an individual in a particular ecological situation is considered to influence the relative success of that individual in contributing offspring to subsequent generations (the ‘fitness’ of that individual). Natural selection, by favoring those individuals whose behavior causes them to maximize their fitness, can lead to evolutionary changes in behavior. Consequently, this course explores *why* animals behave the way they do by integrating information from evolution, ecology and ethology. Areas of emphasis include the genetics of behavior, predator avoidance, sexual selection, sperm competition, parental care, social & eusocial behavior, and speciation. Course outcomes include providing students with an introduction to the theory and methods of the study of animal behavioral ecology and, for the four-credit option, providing students with meaningful feedback on the art of effective written communication.

## Assessment:

For the 3-credit option, students will be assessed based on two in-class exams and a final exam. For the 4-credit option students will also participate in a weekly discussion section of supplemental readings, and complete a written assignment. The written assignment consists of a topic chosen by the student and approved by the instructor, and involves a research paper of 2 – 3 pages in length. Emphasis for grading will be on the quality of the writing, including organization, grammar, polish and style, and students are expected to show drafts of their paper to others for comments prior to turning the paper in to me. Students will revise and continue to polish their paper for two additional rounds, for a total of three times graded (once by the TA’s and twice by the instructor).

## Grading Rubric:

<b>Exams:</b>	3-credit option	4-credit option
Exam I	30%	20%
Exam II	30%	20%
Final	40%	30%
<b>Written Assignment:</b>		
Outline		5%
First version		5%

Final version	10%
<b>Discussion Participation:</b>	10%

### Tips for writing the essay for Behavior & Evolution:

Cite only primary literature (peer-reviewed journal articles or books), and never use direct quotations. This should be *your* writing, not that of somebody else.

#### Suggested steps:

1. Research your topic and decide what you want to say (duh).
2. Organize the main points you will want to make.
3. Decide what background information will be needed for a naïve reader to fully understand your points.
4. Outline the paper, paragraph by paragraph, to identify the most logical structure for the essay – the sequence of points that you will make.
5. Decide what each paragraph will say (with only rare exceptions, shoot for each paragraph making *one point only*). Your outline should now list, point by point, the sequence of steps your essay will take. **TURN IN THIS DETAILED OUTLINE.**
6. Tackle each paragraph one at a time, and write it, paying close attention to the most logical flow of sentences as you set the reader up and make the point that paragraph is supposed to make. Do this for each paragraph, making sure that *within each paragraph* the logical flow is smooth (i.e. you don't ask readers to jump back and forth between vantages or topics).
7. Analyze the flow of your paper as you read through it, and add in transition sentences as needed to either a) wrap-up/ summarize the main point of each paragraph, or b) set up the reader to lead them right into the next paragraph (e.g. a “hook” sentence that baits them for what comes next), or both.
8. Polish the text – search for grammatical errors (subject verb mismatches, singular/plural mismatches, dangling clauses are the most common mistakes), and search for ways to re-state each sentence more succinctly. Honestly, the best way to do this is to read it out loud, as you will quickly discover which sentences work cleanly and well, and which get awkward or jumbled.
9. Polish again, this time working on style and clarity, and, where possible, elegance of your word choices so that your essay has a cadence and flow to it that is enjoyable and effective. For example, a short, direct sentence can be very effective if it is inserted after one or two long sentences, but all long or all short almost never works well.
10. Share your essay with friends or with folks at the writing center. Find out where they got confused or stuck, or where they stumbled, and work through these sections to make them more explicit or more intuitive. Polish yet again, and it should be ready. **TURN IN THIS VERSION AS DRAFT ONE.**