BIOL 4471A/8803F *Behavioral Biology* Spring 2011

TuTh 435 - 555pm, Cherry Emerson 320

Professor Jeannette Yen
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Office hours: We 10a-noon or by appointment.
All communication *only* via email, in class, or during office hours.
No discussion of grades or class material over the telephone.

SYLLABUS:
TEXT: Alcock, John. 2009.
Animal Behavior. An Evolutionary Approach. 9th edition.
Sinauer Associates, Inc. Sunderland, MA.
http://www.coursesmart.com/9780878932252?__professorview=false&__instructor=2035578
READING: 15 chapters to present basic theories of behavior
MOVIES: to observe and understand behavior of animals
PRESENTATIONS: to articulate ideas
Homework assignments and term paper: to develop writing abilities
TWO exams and ONE *cumulative* FINAL: see dates below
Weekly pop quizzes/class participation: quizzes given at any time

Homework: due every **Tuesday**
Using the Scientific Method
[Please refer to Platt 1964, posted on webCT]
Assignment:

- Write up 3 hypotheses discussed in the assigned reading. Be prepared to present at least one of them. Selection of speaker will be a random draw out of a hat.

FORMAT:

- Observation: Provide background for hypothesis.
- Hypothesis: State an expected outcome based on these observations. Formulate either as a null or alternative hypothesis.
- Critical test: Describe or design the key experiment to disprove hypothesis.
- Outcome: Describe results of critical test.
- Conclusion: Make a conclusion, based on the proximate mechanisms and ultimate evolutionary consequences of the result.
- Implication: What is the adaptive significance of this conclusion?
- Next question: Formulate the next question that arises from these results.

Video review: Nearly every **Thursday**, we will view a video. After the video, selected students will lead the discussion on the video.
Format of presentation:

Give a review of video.
State hypotheses tested.
Describe prediction, outcome, and consequences.
Prepare 3 questions for discussion with class, to be handed out prior to viewing of video.
You will be graded on how well you review the movie, how knowledgeable you are on the topic, and how well you are able to engage the class in discussion. You will need to give a grade to each answer given by the responding student.

First homework assignment: During our first class, we will each select a video to review. Over the week, you will review the video. On Thursday, you will turn in a one-page summary of the video. Be prepared to give a brief 2.5-minute description of your favorite topic in the video, defending your choice by providing a clear statement of the hypothesis tested, critical experiment, and consequences of observed behavior. For Feb. 3: Provide the outline and first paragraphs of your final paper with 5 additional related references, where 2 of the citations must have been written within the past 2 years. Web-based citations are not counted [but can be used for additional material on topic].

Term paper: Prepare a final paper on your favorite topic presented in your video.
Format: 12-pages, double-spaced, 1" margins, 12-point Times Roman font, no more than 2 pages of references.

Presentations (2+):
Power point presentation: 1st practice talk includes video clip, intro, hypotheses.
Final power point presentation of term paper.

GRADES

TWO exams =	20% of grade
Final =	15% of grade
1st presentation =	5% of grade
final presentation =	15% of grade
1st draft =	10% of grade
final term paper =	15% of grade
pop quizzes/class participation =	5% of grade
homework =	15%

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BIOL 8803F: Behavioral Biology
GRADUATE STUDENT credit:

In addition to the material on the Biol 4471 syllabus/schedule, please prepare your term paper as a **grant proposal** to study a certain aspect of the selected behavior.

Introduction: Describe behavioral phenomenon [one page]
Objective: define hypothesis that you wish to test [one paragraph]
Significance: What will we learn about animal behavior from your proposed study.
Background: provide information about the behavior of interest, selecting a certain animal to study and why its behavior is different and/or similar to that of other animals.
Experimental approach: describe how you will design the critical test of your hypothesis. Be sure to consider your expected results and the implications of each possible result.
Quantitative analyses and statistical tests: provide a means to test your results quantitatively. Ideally, I would like this to be developed as a possible undergraduate independent research project that can be done at Tech, thus giving our undergraduates experience in empirical research

IN CLASS: conduct a **demonstration** of your proposed research.

BIOL 4471/**8803F** *SCHEDULE [revised 1.11.11]*

Wk	Date	Read	Topic	In-class activity	Homework
1	Jan 11, 13	Ch. 1,2	Proximate and ultimate cues	Introduction to evolutionary approach [Tu]. Discussion of chapter hypotheses [Th]	Hypotheses for Ch. 1, 2 (due Th)
2	Jan 18, 20	Ch. 3	Development and Heredity	Student video presentation [Th]	Hypotheses for Ch. 3 (due Tu) Summary of video [due Th],
3	Jan 25, 27	Ch. 4	Neural Mechanisms	Discussion of chapter hypotheses [Tu] Movie FINDING THE WAY + review [Th]	Hypotheses for Ch. 4 (due Tu)
4	Feb 1, 3	Ch. 5	Organization	Discussion of chapter hypotheses [Tu] FRIENDS AND RIVALS + review [Th]	Hypotheses for Ch. 5 (due Tu) Outline, 1st paragraphs, and ref.s for term paper [due Th]
5	Feb 8, 10	Ch. 6	Survival Adaptations	Discussion of chapter hypotheses [Tu] **Exam I: Ch 1-6 [Th].**	Hypotheses for Ch. 6 (due Tu)
6	Feb 15, 17	Ch. 7	Feeding behavior	Discussion of ch. Hypotheses [Tu] Movie FINDING FOOD + review [Th].	Hypotheses for Ch. 7 (due Tu)
7	Feb 22, 24	Ch. 8	Habitat choice	Discussion of chapter hypotheses [Tu] Movie: HOMEMAKING + review [Th]	Hypotheses for Ch. 8 (due Tu)
8	Mar 1, 3	Ch. 9	Communication	Discussion of chapter hypotheses [Tu]. Movie TALKING TO STRANGERS + review [Th].	Hypotheses for Ch. 9 (due Tu)
9	Mar 8, 10	Ch. 10	Reproduction	**Discussion of ch.10 hypotheses [Tu].** **1st presentation of term paper [Th]**	Hypotheses for Ch. 10 (due Tu)
10	Mar 15, 17			Movie ARRIVING + review [Tu]. **Exam II: Ch 7-10 [Th].**	1st draft [due Tu: March 29]
--	Mar 22	--	--	SPRING break March 19-23	--
11	Mar 29, 31	Ch. 11	Mating	Discussion of chapter hypotheses [Tu]. Movie COURTING + review [Th].	1st draft [due Tu] Hypotheses for Ch. 11 (due Tu)
12	Apr 5, 7	Ch. 12	Parental care	Discussion of chapter hypotheses [Tu]. Movie LIVING TOGETHER+ review [Th]	Hypotheses for Ch. 12 (due Tu)
13	Apr 12, 14	Ch. 13, 14	Social and Human behavior	Discussion of chapter hypotheses [Tu]	Hypotheses for Ch. 13/14 (Tu)
14	Ap 19, 21			final presentations	**Final papers due 3 days after presentation**
15	Ap 26, 28			final presentations	**Final papers due 3 days after presentation**
Final	**5May, 250p**	ALL	**All** chapters	**Final exam**	