

ZOOL 3600: ANIMAL BEHAVIOR, FALL 2017

Professor: Dr. Jennifer Cooper
Office hours: T 10am-12pm
F 11:30am-12:30pm
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Write ZOOL 3600 in the subject line of all emails to me.

This course introduces the study of animal behavior from a biological perspective, providing theoretical background and key terminology to students pursuing careers in areas such as wildlife biology, conservation, zoology, and veterinary medicine. The course includes a general survey of forms of animal behavior and strategies across animal groups and in a variety of natural contexts, and includes a treatment of social behavior, communication, foraging behavior, predation avoidance, and habitat selection and use. Students will learn about current topics of study, and will examine modern research methods for laboratory and natural populations.

PREREQUISITES

BIOL 1050 and 1150 with a grade of D or better (or equivalent courses at another institution).

COURSE REQUIREMENTS

An integral goal of this course is your continued development of observation skills, critical thinking, problem solving, and written and verbal communication. Lectures, assignments and videos will guide you in the development of these skills. **I will assume you have engaged with the associated material listed in the schedule prior to coming to class and I may call on you to answer questions and participate in discussions.**

The rigors of this course demand regular attendance, commitment and hard work on the readings and assignments. **If you are not willing to devote 15 hours a week outside the classroom to this course, you should reconsider your enrollment.**

REQUIRED TEXTS/MATERIALS

Dugatkin, L.A. 2009. Principles of Animal Behavior, 3rd ed.;

Use of a laptop to take lecture notes is forbidden...take notes by hand. I will **not** be making PowerPoint lectures available for student download. You are welcome to voice record my lecture.

CENSUS DATE

Students must attend the first 3 class sessions or they will be dropped from the course.

This course cannot be taken for credit. It can only be taken for a letter grade. Students can only drop this course prior to the census date of September 20.

GRADING

In-class exams

Exam 1	175 points
Exam 2	225 points
Exam 3	250 points

Independent Activity

Animal observation journal	100 points
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Study group activities:

Article summaries (4, points variable)	100 points
Poster (participation 50 pts, presentation 100 pts)	150 points

Total	1000 points
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No +/- grading will be applied to your final grade.

EXAMS

The exams will be given in a mixed format (multiple choice, short answer/essay, graph interpretation). Exams 2 and 3 will assume deep understanding of material from earlier exams. I do not recycle exam questions. **Do not make the mistake of underestimating the difficulty of exams.** As you progress through the course, your study skills and work ethic will likely improve, which is why I have allotted an increasing number of points to be earned through each exam.

Students who arrive after the first exam of the day has been turned in will not be allowed to take the exam, and will receive a zero grade for the exam. If you must leave the room for personal reasons, you will not be allowed to finish the in-class exam. Your partially finished exam will be graded as it stands. If you plan to miss an exam for any reason, you must take an alternate exam before the in-class exam is scheduled to take place. If you miss an exam unexpectedly, you must provide documentation of a legitimate reason for doing so; otherwise, you will not be allowed to take the alternate exam, and you will receive a zero grade for the missed exam.

ANIMAL OBSERVATION JOURNAL

Being a good scientist requires being a good observer. We are fortunate to live in a time and place in which we can observe animals in their natural habitat. Most of us treat wildlife as part of the scenery, but if you **pay attention** and observe animals as they go about their daily lives, you may make amazing discoveries that you will never forget!

Your Animal Observation Journal will be kept on a regular basis, with a minimum of 3 observations per week (a total of 45 observations over the semester). You can observe wild animals as you walk on campus or in your neighborhood, or on field trips for other classes, on a camping trip, or when you take an afternoon hike at a local wildlife refuge. Although the time spent in any particular observation may be brief (the animal may leave after just a few moments), your entry can be as detailed as you wish.

Your journal will be graded using the following rubric:

- Did every observation include date, time, location, weather conditions?
- Did most entries include **original** drawings or printed photos? (photos documented on your phone/camera)
- Did most entries include a careful and complete description of the organism (including taxonomic designation)?
- Did most entries include a careful and complete description of the behavior?
- Did most entries include either a **proximate or ultimate explanation** of the **specific** behavior?

You will start your entries immediately, and submit your notebook for me to regularly assess your progress (see the course schedule for due dates). It is easier to carry a pocket-sized notebook for quick entries, and then later transcribe more extensive notes and drawings into your submission copy. The following limitations apply:

- Pets (dogs, cats, birds or reptiles): maximum of 2 observations
- Pet aquarium fish, or feral domestic animals (cats, chickens, etc): maximum of 3 observations
- Zoo animals: maximum of 6 observations

I kept my own Animal Observation Journal as an undergraduate student, while taking a course at the University of Texas @ Austin. I have posted a copy of this journal on Blackboard, so that you have **an example of what your journal should look like**. In the course at UT Austin, we had permission to collect vertebrate animals under the permit held by the instructor, but that is not the case in ZOO 3600 at Stanislaus State. **The majority of vertebrate animals are protected by law in California. Do not plan to handle or disrupt vertebrate animals.**

STUDY GROUPS

You will be assigned to a study group at the beginning of the semester. Study groups will consist of 4 students. You will work very closely with your study group members throughout the semester... you will sit as a group in lecture, and you will work as a team to write article summaries and create a scientific poster. Part of your grade is dependent on your teamwork, thus every group member must do their share of the work! To ensure that each group member is contributing, I will be using online submission platforms and co-authorship grading (see the relevant sections below). **You will also evaluate your group members at the end of the semester.**

ARTICLE SUMMARIES (SUBMITTED VIA TURN-IT-IN ON BB)

I will make PDF's of the articles available on BB several days before the assignment is due. Each group member will take a turn at being lead author on an article (55 points), with the other group members being co-authors (15 points). **There are 4 article summary assignments, so the total points you can earn sums to 100.** Late submissions will have 20% deducted for each day the assignment is overdue.

Lead authors will write a rough draft summary of each section of the article **in their own words**, for a total of 4-5 single-spaced pages. Do not include the abstract. **Include all article headers and sub-headers in your summary.** This summary will be posted to BB at least 48 hours before the assignment due date, using the Wiki specific to your assigned study group. **Once the rough draft is posted, do not modify it in any way.**

Co-authors will then provide **very explicit instructions** on how to improve the summary, **focusing on conceptual and analytical aspects (not just editorial aspects).** **Co-authors must offer at least 3 substantive conceptual/analytical comments to receive full credit.** Co-author comments are due 24 hours before the assignment due date. The lead author will then submit the final draft via TurnItIn on BB. Be very careful to avoid plagiarism, because the TurnItIn software is very good at detecting even a single plagiarized sentence. You may be tempted to lift phrases directly out of the article...resist this temptation, because such phrases are highlighted by the software, and **if there are more than a few phrases (6-8 words in a row) used verbatim within a single summary, I will award every group member 0 points for the assignment (co-authors will not be penalized if they warned the lead author about specific examples of plagiarism in the rough draft).**

POSTER PRESENTATION

Poster presentations will be created using the Wiki specific to your assigned study group. Each study group will select a topic relevant to evolutionary biology, and perform a small literature review which includes **exactly** 4 recent (no older than 2009) primary literature articles. Each student will focus on reading one of the 4 articles, become intimately familiar with the work, and incorporate the most important aspects of the article within the larger, conceptual poster. The poster will be presented in the Poster Session (during the Final Exam period).

Participation points (50) can only be earned by documenting your contributions on Blackboard.

Each group member's contribution to the poster will be documented using the following structure:

1. Each group member chooses an article to summarize.
2. Each group member creates a new wiki page for their poster contribution, titled like "Poster, Betsy Ross,".
3. Group members will post their article summary on their wiki (see schedule for due date), and other group members will use the "Comments" tab to make suggestions and revisions.
4. More lengthy discussions can be documented on the group's Discussion Board (use the Board only for the poster project, please...don't use it for homework assignments, etc.).
5. To earn full points, a group member must:
 - a. post their own work on their own wiki
 - b. make constructive comments regarding **every other** group member's work on member wikis
 - c. discuss the formatting, organization, and printing of the poster on the Discussion Board

Any contributions which are documented in other ways (texting, Google Docs, etc.) won't be considered for credit.

To find primary literature articles relevant for your topic:

- Go to the CSU Stanislaus library website (link on University homepage).
- Choose "Find Books and Articles", then choose "Databases A-Z", then choose "Biological Abstracts." You will be taken to the Web of Science hub.
- Search on a combination of terms to find articles about the topic your group finds most interesting. Read the abstracts, and choose the article that the entire group feels is interesting and understandable.
- Click the "FIND IT!" link to access the full-text PDF. **Email me the 4 article PDFs for my approval; a single email with your group name in the subject line is desirable.**

It is easy to use Microsoft PowerPoint to prepare a poster presentation, simply by adding components (text boxes, images) to a single slide. You must format the slide as a custom size (36" X 48"). I have posted a couple of **example posters** on Blackboard for you to use as a guideline for formatting and level of scientific rigor.

Currently, the best place to get your poster printed is Staples. **Ask for an "engineering print", in color, size 36 X 48 inches.** The color print job should cost less than \$15. Talk to the Staples print shop ahead of time to find out how long it will take, and build this into your preparation schedule.

- The main goal of a poster is to relate the main points of your topic with as little effort as possible on the part of the audience to read, interpret, and understand.
- Use a suitable font size (can be read from about four feet away).
- Include a Title, a list of student presenters, and a Literature Cited section.
- Graphics are required (figures, special equations, photos). Graphics should be high resolution, and should convey the most important ideas in the poster. Don't add images just for "pizzazz".
- Clearly explain the ideas with short, concise sentences. **Use bullet points with informative but brief sentence fragments, instead of paragraphs!**
- For each figure, use an explanatory caption. You can outline each figures with a colored box, and outline the relevant paragraph/list in the Results or Discussion with the same color...this will help readers associate figures with text.
- Specific facts, data or images taken from the 4 articles must be cited within the poster text, using APA format.

STUDENT LEARNING OBJECTIVES:

1. Gain knowledge of the terms and major topics of study in the biological field of animal behavior.
2. Gain an appreciation for the complexity of behaviors including discerning ultimate and proximal causes.
3. Understand the evolutionary and ecological factors behind behavioral expression.
4. Become familiar with modern methodology and current topics in the study of animal behavior.

TUTORING ON CAMPUS

Free tutoring services are available to assist you in most disciplines, including in biology!

Library 112; Phone (209) 667-3642; Web <http://www.csustan.edu/Tutoring>

The tutor for ZOOL 3600 for Fall 2017 is Kandiss Ulm.

CAMPUS COUNSELING SERVICES

Overwhelmed by the stress of juggling classes and your home life? Our campus offers excellent counseling services to help support you!

Library 185; Phone (209) 667-3381; Web <http://www.csustan.edu/Counseling>

STUDENT HEALTH CENTER

You have already paid for access to health care on campus. Services include: birth control, flu shots, immunizations, pharmacy, check-ups, HIV testing, TB tests, and doctor's notes for when you are sick!

Phone (209) 667-3396; Web <http://healthcenter.csustan.edu>

PERSONAL BEHAVIOR

It is assumed that you have read and understood the university's position on academic integrity and student discipline. Inappropriate behavior (including, but not limited to, cheating and/or plagiarism) will be dealt with as severely as university and state regulations allow. **This includes receiving an F in the course, and being reported to University Judicial Affairs.**

Do not text in my class. It is rude. Believe it or not, I can see you. I may ask you to leave.

BB videos and readings posted on Blackboard under “External Links”.

Articles 1, 2 3 and 4 posted on Blackboard under “Documents & Content.”

Week of	Lecture topic	Text	Assignments
8/24	Introduction		Begin using the Study Recipe
9/5-9/7	Principles of Animal Behavior The Evolution of Behavior	1 2	BB video (1 hr): Triumph of the vertebrates BB video: Hermit crabs exchange shells
9/12-9/14	Hormones and Neurobiology	3	BB video: The origin of the brain BB video: Ant roles can be controlled by injection
9/19-9/21	Exam 1 on Tuesday Molecular Genetics and Development	4	CENSUS DATE 9/20 Join group by 9/22 BB video: Pygmy seahorses are masters of camouflage
9/26-9/28	Learning Cultural Transmission	5 6	BB video (1 hr): How smart are animals? BB video: Learned Behavior and Culture in Macaques
10/3-10/5	Sexual Selection	7	BB video (1 hr): Why sex? BB video: What females want and males will do Article 1 summary due 10/3
10/10-10/12	Mating Systems	8	BB video: Rock paper scissors in Side-blotched lizards BB reading: Cheating cheetahs prosper
10/17-10/19	Kinship	9	BB video: Kin selection Article 2 summary due 10/17
10/24-10/26	Exam 2 on Thursday Cooperation	10	Poster topic sign up 10/24 BB video: Why bats share blood BB reading: “Error. Greed does not compute.” BB video: Ants rescue fallen comrades BB video: Group hunting in sailfish
10/31-11/2	Foraging	11	BB video: Tagging bumblebees to study movements BB video: Corvid Caching Article 3 summary due 10/31 Poster PDF due 11/2
11/7-11/9	Anti-predator Behavior	12	Poster article summary due 11/9 BB: Decorator crabs make high fashion at low tide BB video: Moth mimicry BB video: Defensive Vomiting
11/14-11/16	Communication	13	BB video (1 hr): The evolution of communication BB video: Studying elephant communication BB video: Marmoset baby talk Article 4 summary due 11/14 Poster article comments due 11/16
11/21-11/23	Habitat Selection, Territoriality, Migration 11/23 THANKSGIVING NO CLASS	14	BB video: Analyzing patterns in the savanna landscape BB video: How lizards find their way home BB video: Niche partitioning and species coexistence
11/28-11/30	Aggression Play	15 16	BB reading: Mantis shrimp shoulder their evolutionary baggage and bluff BB video: Gull territoriality BB video: Ants fake fights to survive
12/5-12/7	Animal Personalities Exam 3 on Thursday	17	Poster rough draft review 12/5
12/14	POSTER SESSION 8:30 a.m.-10:30 a.m.		