

Biol 596: Animal Behavior Laboratory

Class Policies and Syllabus

Instructor: Rulon W. Clark, rclark@sciences.sdsu.edu

Office hours: NLS-224, by appointment

Required text: None. Several papers from the primary literature will be assigned throughout the semester. The following references (on reserve in the library) might be helpful for working on your independent projects: (1) Pechenik J. 2004. A short guide to writing about biology, fifth edition. Longmans. (2) Martin P, Bateson P. 2007. Measuring Behaviour: an introductory guide, third edition. Cambridge University Press.

Blackboard: All handouts, non-text readings, and other course documents will be posted on the course blackboard site. Please check blackboard before each class period to make sure you have updated information.

Course Objectives: This course is to be taken in conjunction with the Animal Behavior lecture course. This laboratory course seeks to introduce students to (1) observation and description of animal behavior in lab and field; (2) construction of hypotheses in behavioral ecology and derivation of testable predictions; (3) collection of behavioral data; (4) quantitative & statistical analysis of those data; and (5) interpretation and presentation of findings in written and oral forms. An additional goal of the course is to give students a sense of the diversity of animal behavior through use of videos, field exercises, and off-campus trips. Students will also be expected to develop their abilities to discuss their observations and interpretations of behavior.

Participation and Attendance. Anyone who has to miss a laboratory session should see me during office hours or at the end of lecture to explain their absence *in advance* of the relevant lab session. Your active participation during lab sessions is expected. If you're not present, you can't participate – and there's no way to make up for the lost opportunity to contribute. A considerable portion of the course will involve projects done by individually or in small groups. Depending on the nature of each project, students may need to schedule blocks of out-of-class time to prepare experimental setups, make observations, and conduct data analysis. Later on, some lab periods will be freed up to allow time for your course projects.

Course Structure. The primary emphasis of this course will be on semi-independent projects: students will conduct research studies, analyze results, report those results to the rest of the class in both written and oral form, and receive feedback from peers and the instructor. To prepare for these projects, the first 9-10 laboratory sessions will focus on analyzing behavior and collecting data in a variety of different animal systems. The last 4-5 lab sessions will then focus on you conducting independent projects of your own design, reporting to the class on your system, and writing up a paper summarizing your results.

Primary literature. Supplemental readings for this class will come primarily from scientific journals. Additionally, many of your assignments will require you to conduct your own literature searches and cite your references. All literature should be cited and referenced following the format for the journal *Behavioral Ecology*. You should log in to the library and take a look at the journal to familiarize yourself with this format. Note that all of this requires you to be familiar with how to effectively use the electronic resources offered by the library, an essential skill in modern academia. If you need help

figuring out how to negotiate the online library, please ask the librarians for help! They are there to do your bidding.

Grading and Assignments. Your grade will come from three types of assignments:

1) Laboratory Worksheets – written individually (~8 worksheets throughout semester). Although you will often work in partners or teams when conducting labs, each individual is responsible for preparing and completing each laboratory worksheet on their own. The worksheet assigned during each lab period will be due at the beginning of the next week’s lab period. **Note:** All papers in the course must be submitted electronically as an email attachment in Microsoft Word (LastName Assignment.doc). I expect you to have run spell/grammar-check and carefully proofread all submitted written material, as you will be evaluated on your ability to communicate clearly (which includes proper grammar, spelling and punctuation, and adherence to the *Behavioral Ecology* format for citing literature).

2) Project proposal – oral presentation. Each individual or team will investigate a topic in animal behavior and design a simple study that will address a specific question. You will have time to discuss your plan and construct a detailed outline of your proposal, after which I will make suggestions and then give you a “green light” to start getting equipment, organisms, etc. You will then prepare a research proposal, which will be presented orally (using PowerPoint) to the class. During that lab session, each oral presentation will be approximately 5-6 minutes, and should give a complete picture (background, questions, methods, anticipated statistics) of the experiment. Other students will also have an opportunity to critique the proposed project and make suggestions for improvement. **If you are working on a team, all team members will receive the same grade for this phase.** Your project must be designed so that it can be completed in three weeks. You should plan to leave yourself *several* days for analysis and write-up at the end. If two or more teams wish to work on the same study system, they must coordinate their plans so that there is sufficient distinctiveness between the projects.

3) Project report – written individually (20% of grade). Each student will individually write a complete lab report (about 6 pages, not including figures, tables, and references) on their independent project. Each report should contain Introduction, Methods, Results, Discussion and Literature Cited sections. The goal of this assignment is to provide feedback on your scientific writing ability. Although you may consult with team members on data collection, statistical analyses and graphs, each *individual* should write his/her own complete research report without direct help from group members or classmates on the writing process.

Summary of Grading:

Laboratory Worksheets	70 %
Project Proposal	10 %
Project Report	20 %

Final grades will be assigned based on a standard plus/minus scale:

A	(93-100 %)	C+	(77-79.99 %)
A-	(90-92.99 %)	C	(73-76.99 %)
B+	(87-89.99 %)	C-	(70-72.99 %)
B	(83-86.99 %)	D	(60-69.99 %)
B-	(80-82.99 %)	F	(< 60%)

Tentative Lab Topics

Lab Week	Lab Topic	Assignments
Sept 3	Introduction to lab and quantifying turtle behavior	
Sept 10	Using ethograms to measure aggression in crayfish	Turtle worksheet due
Sept 17	Crayfish continued and introduction to rosy boas	
Sept 24	No class (think about independent projects)	None
Oct 1	Rosy boa chemosensory behavior	Crayfish worksheet due
Oct 8	Shorebird vigilance (Torrey Pines State Beach)	Boa worksheet due
Oct 15	Shorebird data analysis and introduction to banded geckos	
Oct 22	Banded gecko antipredator behavior	Shorebird worksheet due
Oct 29	Ground squirrel alarm calls (Lake Murray)	Gecko worksheet due
Nov 5	Alarm call data analysis, introduction to hummingbirds	
Nov 12	Hummingbird data analysis	Squirrel worksheet due, Project outlines due
Nov 19	Project proposals	Hummingbird worksheet due
Dec 3	Work on projects	
Dec 10	Project reports due	Final reports due

Furloughs. Due to extraordinary budget cuts to the CSU, fees to students have increased 32%, many sections have been cut and faculty are required to take nine (9) unpaid furlough days each semester. These furlough days will mean that I will be unable to include all elements of this class that I believe would provide the best educational experience. Unfortunately this is the result of a dramatic cut to the CSU by the state after years of under-funding the system. The days I will be furloughed are: Aug 31, Sept 11, Sept 24, Oct 16, Oct 30, Nov 16, Nov 24, Dec 4, and Dec 11. On these days, class will not meet (as noted in the lecture schedule above), and I will not be available for office hours, phone or email consultation.