

ECOLOGY LABORATORY (BIEB 121) Spring 2020

T/Th 9:30 a.m.-12:50 p.m.

Instructor:

Elsa Cleland, Professor, ecleland@ucsd.edu

Graduate Student Instructional Assistants:

Stefan Samu, ssamu@ucsd.edu

Amanda Leu, aaleu@ucsd.edu

COURSE DESCRIPTION

This is a course in experimental methods in field ecology. The focus will be on natural history, experimental methods, statistical analysis, and scientific communication (spoken and written). Statistics is an essential prerequisite for this course. The emphasis will be on terrestrial plant and animal ecology, but with forays into intertidal ecology and ecosystem ecology. For much of the quarter you will be in the field (outside) once per week making observations.

SCHEDULE

WEEK	Date	Activity/Location (start 9:30 a.m. on zoom except on days with *, due dates by midnight PDT)
1	Tu Mar 31 Th Apr 2	Syllabus, technology, group exercise (ice breakers), first field observations Species of Conservation Concern assignment lecture, how to access scientific journals (VPN)
2	Tu Apr 7 Th Apr 9	Lecture on Nutrient Network experiments, group exercise , <u>reading scientific papers (20 pts)</u> Statistics review lecture, nutrients/herbivory data analysis, <u>R tutorial (20 pts)</u>
3	Tu Apr 14 Th Apr 16	"How to write a lab report" lecture, <u>plagiarism self-assessment group exercise (20 pts)</u> , writing *Natural history observations (good day to go to SIO pier and Dyke rock, low tide 12:41 p.m.)
4	Mo Apr 20 Tu Apr 21 We Apr 22 Th Apr 23	<u>lab report complete draft due (20 pts, no points for late assignments)</u> <u>peer review (20 pts)</u> , group exercise , revision <u>Lab report 1 due (200 pts)</u> *Work on individual presentations, <u>case study for individual presentation due (20 pts)</u>
5	Tu Apr 28 Th Apr 30	Habitat fragmentation and predation lecture, group exercise (data analysis) (<u>lab notes 20 pts</u>) *Natural history observations (good day to go to SIO pier and Dyke rock, low tide 10:30 a.m.)
6	Tu May 5 Th May 7	<u>Individual presentations</u> on SD species of conservation concern (<u>200 pts</u>) all attend <u>Individual presentations</u> on SD species of conservation concern all attend
7	Tu May 12 Wed May 13 Th May 14	<u>Individual presentations</u> on SD species of conservation concern all attend <u>Conflicts and synergies in management due (20 pts)</u> *Natural history observations
8	Tu May 19 Th May 21	Orientation to iNaturalist, Diversity and behavior of urban birds, group exercise Bird diversity & behavior, group exercise (data analysis) (<u>lab notes 20 pts</u>)
9	Tu May 26 Th May 28	Intertidal ecology lecture, group exercise (data analysis) (<u>lab notes 20 pts</u>) *Natural history observations, lab report writing, <u>Natural History Collection due (200 pts)</u>
10	Tu Jun 2 Th Jun 4 Fri Jun 5	Optional research lecture: "Why timing matters for plants in the wild" Optional lecture & discussion: "grad school in ecology" (Final day to work on lab report 2) <u>2nd lab report final deadline (200 pts, can be submitted anytime between May 14 & June 5)</u>

DAILY WORK and ASSIGNMENTS

Lectures will be pre-recorded and available in the Media Gallery on Canvas. Please watch the lecture, read through the assignment for the week, and do any preparation reading BEFORE class meetings. We'll be using the class time for group exercises, and you'll want to make sure you're prepared ahead of time so those exercises can be completed efficiently (those exercises are **bolded** in the schedule above. All assignments will be posted on Canvas, and turned in online, their due dates (and points) are underlined above.

EXAMS

There will be no final exam in this course, and the lab does not meet during final exam week.

GROUP WORK

You will often work in groups. You may analyze data and create graphs and tables as a group, but each individual must do their own writing for their lab notebook and lab reports. Working in a group is great way to practice productive professional relationships. You should treat your fellow students in the same way that you would want to be treated in a future job. Treat everyone with respect, and ask questions rather than make assumptions about shared views or experience. Put your best effort into group work, including listening to everyone's perspectives and ideas. By entering into the class you have agreed to abide by UCSD's Principles of Community: <https://ucsd.edu/about/principles.html>

FIELD EXCURSIONS SAFETY & CLOTHING

We hope you will be able to observe species in the field, especially later in the quarter when local quarantines hopefully will ease; follow local rules and guidance about whether to visit beaches and trails. We take your safety in the field very seriously. It is always advisable to go to the field with a buddy in case of emergency (but maintain social distancing). When you go to natural areas you must bring water and a cell phone. We advise you to wear long pants and closed-toe and closed-heel shoes (no sandals, flip-flops, clogs or ballet flats). Hiking boots or old running shoes are advised. You should also wear sunscreen and a hat. You may get muddy, sweaty, rained on, scratched by plants etc., so pick your clothes and shoes accordingly. There may be spiny cacti, ticks, biting ants or spiders, and rattlesnakes at field sites. Please always stay on main trails (do not take smaller unofficial trails), and never put your hands anywhere you can't see.

TECNOLOGY

We will be using Zoom to this quarter (link for the class is in the calendar on Canvas). **Please plan to use headphones with a microphone** if possible (earbuds you'd use to talk on a cell phone are fine). If you have a smart phone you should download the free "SEEK by iNaturalist" application, as you'll use it for your Natural History Assignment. You'll also download the free R statistical platform, and R Studio. Finally, in order to access scientific journals you'll need to be able to access the UC Library resources from off campus via "VPN." See this link to set up VPN access: <https://library.ucsd.edu/computing-and-technology/connect-from-off-campus/> If you do not have access to a laptop please fill in this link for a loaner computer, <https://eforms.ucsd.edu/view.php?id=490887>, questions about the program can be addressed to vcsa@ucsd.edu. Additional support for students, including technology trainings are available at <https://keeplearning.ucsd.edu>.

PARTICIPATION

Participation during lab hours is preferred, please be on time. However, we understand that some students may be living several time zones away or have responsibilities such as child care that preclude participation during the scheduled time. Please tell Prof. Cleland if you require an alternate time or mode of interacting with the material.

TIME MANAGEMENT

A 4-credit class is equivalent to 12 hours per week of effort. We will spend some time interacting over Zoom, but you'll use the remaining hours to write lab reports, work on your natural history assignment, and prepare your presentations. The faculty and IAs will be present during the group exercises; after we discuss our findings as a group you will work independently on completion of your assignments. You should make sure you fully understand the data and assignments by the end of this group discussion each session.

DROP POLICY / WAIT LIST

The Division of Biology has an automated, first on, first off policy regarding the wait list. If you decide to drop or withdraw after the second week please send Prof. Cleland an email to let her know, otherwise she worries if you disappear!

WRITING

Scientific writing is a genre with specific expectations, and practice is the only way to improve. We will discuss the findings of each activity so you're clear on the required content for your lab reports and write-ups, and we will give suggestions to improve your writing clarity in the grading process. Grading expectations will get stricter as the quarter progresses as we expect you to incorporate this feedback. Labs will be graded both on specifics (did you address all the hypotheses?) and on the general qualities (did you convey the information in the clearest, most concise manner possible?). The Teaching + Learning Commons has both tutoring by virtual help to help you improve your writing, as part of the Writing + Critical Expression Hub (<http://commons.ucsd.edu/students/writing/index.html#For-Undergraduate-Student-Write>). Note that you should always follow formatting guidelines in "How to write a lab report," but you can seek help with clarifying statements and arguments. You can also ask a friend to read your assignments and give you feedback on clarity. They can't write your report for you, nor can you copy theirs, but they can give you friendly comments with the goal of improving your writing.

LAB NOTES

You will keep digital lab notes for exercises in weeks 5, 8 & 9. For each exercise you'll briefly summarize the question, study site & methods, and present the results. Make sure you include the figures and any statistical results, as well as discuss whether the results did or did not support our initial hypotheses. Note that you can choose to write your second lab report based on exercises in any of these three weeks, and your lab notes will form the basis for that lab report. All notes should be finished before the end of lab time each day.

GRADING

Your grade for the course will be based on a total of 1000 points. You have four major assignments each worth 200 points (two lab reports, a natural history collection, and an individual presentation). There are an additional 10 assignments worth 20 points each. Late assignments will lose 5% for each day the assignment is late (ex. 1 day and 1 hour late = 10% reduction in the grade), unless there was an unavoidable delay (email Prof. Cleland). More information on assignments, will be found on Canvas.

ACCOMODATIONS FOR STUDENTS WITH DISABILITIES

Students requesting accommodations for this course due to a disability must provide a current Authorization for Accommodation (AFA) letter issued by the Office for Students with Disabilities (OSD) which is located in University Center 202 behind Center Hall. Students are required to present their AFA letters to Faculty and to the OSD Liaison in the department in advance so that accommodations may be arranged. Contact the OSD for further information: 858.534.4382 (phone) osd@ucsd.edu(email) <http://disabilities.ucsd.edu>(website)

ACADEMIC INTEGRITY

Students are expected to do their own work. Cheating will not be tolerated and all suspected cases will be handed over to the Academic Integrity Coordinator. *Any student caught cheating will fail the course.* Submitting any material written by someone else (copied from a lab member, or from any on-line source) is a violation of academic integrity. For information on academic integrity at UCSD: <https://students.ucsd.edu/academics/academic-integrity/index.html>

RESOURCES FOR STUDENT SUPPORT

A college education teaches you to identify solutions to tough problems. These are skills that future employers will value. University students often encounter non-academic issues as well, and UC San Diego has invested in a variety of resources to help students. It's your job to use these resources to ensure your success, here's a partial list that may be useful to you:

Basic Needs refers to the most essential resources required to thrive as a student, which includes access to nutritious food, stable housing, and financial wellness resources. **The Hub** is a new UC San Diego space that offers students the opportunity to engage in and link to Basic Needs resources. This includes the Triton Food Pantry. <https://basicneeds.ucsd.edu/>

The **Campus Community Centers** at UC San Diego build community among our diverse population of students, faculty and staff members. Each provides a forum to increase awareness of social issues, encourage dialogue, build

community, improve retention, increase outreach and yield, and foster academic success. For a list of the many campus community centers, as well as other resources to support students, go to: <https://diversity.ucsd.edu/centers/index.html>

Counseling and Psychological Services (CAPS) provides free, confidential, psychological counseling and crisis services for registered UCSD students. CAPS also provides a variety of groups, workshops, and drop-in forums. For more information, please visit our Counseling Services page. <https://caps.ucsd.edu/>

CARE at the Sexual Assault Resource Center is the UC San Diego confidential advocacy and education office for sexual violence and gender-based violence (dating violence, domestic violence, stalking). CARE provides free and confidential services for students, staff and faculty impacted by sexual assault, relationship violence and stalking.

The **Undocumented Student Services Center** is committed to serving our undocumented students and their families through holistic services. We also advocate for generating a sense of community for all students that are undocumented or come from mixed immigration-status families. <https://students.ucsd.edu/sponsor/undoc/>

The **Student Veterans Resource Center (SVRC)** is committed to ensuring that military affiliated students successfully make the transition from the military environment to campus life, and are assisted in their progress toward completing their academic degree. In collaboration with other University partners, the SVRC seeks to identify and mitigate the barriers to academic success that are specific to the military affiliated student community. <https://students.ucsd.edu/sponsor/veterans/index.html>