

## **ECOLOGY LABORATORY (BIEB 121) Spring 2017**

**York Hall Room 1310 T/Th 9:30 a.m.- 1:20 p.m.**

### Instructor:

Elsa Cleland, Associate Professor, [ecleland@ucsd.edu](mailto:ecleland@ucsd.edu)

Office: Muir Biology Bldg 5256

### Graduate Student Instructional Assistants:

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## **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 ecology, particularly plant and animal ecology, but with forays into intertidal ecology and ecosystem ecology. For much of the quarter we will be in the field (outside) once per week collecting data.

## **SCHEDULE**

<b>WEEK</b>	<b>Date</b>	<b>Activity/Location</b>
1	Tu Apr 3 Th Apr 5	Syllabus, mark-recapture lab (write up 50 pts, due by end of day) Lectures on Species of Conservation Concern & Nutrient Network experiments, exercise on reading scientific papers (write up 50 points, due by end of day)
2	Tu Apr 10 Th Apr 12	Nutrients/herbivory limitation of plant growth (meet in field at 10 a.m., 25 participation pts) Sample processing (25 participation pts), Statistics review lecture
3	Tu Apr 17 Th Apr 19	R tutorial, nutrients/herbivory data analysis (write up 50 pts, due by end of day), How to write a lab report, Plagiarism review (25 pts self-assessment due in class), Peer review (lab report 125 pts, due Wednesday April 25)
4	Tu Apr 24 Th Apr 26	Optimal foraging (meet in the field at 10 a.m., 25 participation points) Optimal foraging data analysis (meet in lab, write up 50 pts, due by end of day)
5	Tu May 1 Th May 3	Habitat fragmentation and predation (meet in lab, walk to field, 25 participation pts) Habitat Fragmentation 2 (collect nest on campus, return to lab for data analysis, write up 50 pts, due by end of day)
6	Tu May 8 Th May 10	Kendall Frost marsh restoration (meet in the field at 10 a.m., 25 participation pts) data analysis (meet in lab, write up 50 pts, due by end of day)
7	Tu May 15 Th May 17	Individual presentations on SD species of conservation concern (half of class meet in lab, 125 pts) Individual presentations on SD species of conservation concern (other half of class)
8	Tu May 22 Th May 24	Intertidal communities (meet at SIO pier at 10 a.m., 25 participation points) Data analysis (meet in lab, lab report 125 pts, due Wednesday May 30)
9	Tu May 29 Th May 31	Pollination (meet in lab, walk to Scripps Coastal Reserve, 25 participation pts) data analysis in lab (write up 50 points, due by end of day)
10	Tu Jun 5 Th Jun 7	Create a virtual field trip - plants of the Ecological Park (meet in lab, write up 40 pts) Presentations - plants of the Ecological Park (walking, presentation 35 pts)

## **LAB SAFETY (York 1310)**

Enrolled and waitlisted students **MUST** successfully complete the Biology Lab Safety Training and Assessment before the first lab session: <https://dbsportal3.ucsd.edu:3443/safety-training/>. No food or drink is allowed in any of the York labs; you

can keep food and drinks in your backpack, placed in the shelves near the door. Please never prop open the door to York 1310 unless class is in session. This is for security reasons – both your safety and to prevent theft of lab equipment or computers.

### **CLEANING UP AT THE END OF THE DAY**

Other courses are using York 1310 this quarter, and ecology lab activities are sometimes fairly dirty, because we bring in materials from the field. At the end of each class period you should wipe down the lab bench with a wet paper towel.

### **PRINTING**

You will need to have an account to print in the lab. You can set up an account at the ACS web site (<http://sdacs.ucsd.edu/~icc/laser.php>).

### **ASSIGNMENTS**

The labs for the quarter will be posted on TritonED. Please plan to print the instructions for each lab, along with any sheets required to record data in the field. Most of the assignments will be turned in online.

### **TEXTBOOK**

There is no official textbook, but I'll have a copy of "Ecology" (Cain, Bowman, Hacker Eds) that you're welcome to borrow.

### **TESTS**

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

### **GROUP WORK**

You will often work in groups to collect data. You may analyze data and create graphs and tables as a group, but each individual must do their own writing for brief write ups 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 making an effort to listen 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**

We will be spending much of our lab time in the field. You are required to provide your own transportation. Sometimes we will meet in the lab and walk to a field site on campus. You might want to have a bike for those days, or plan to take the bus across campus. We will sometimes meet at off-campus locations, as described in the lab handout for each day. Make sure you have arranged transportation with your lab group in advance of these days. Except for highly unlikely circumstances, we will go on our field excursions rain or shine. Any exceptions will be emailed via your UCSD email account and posted on TritonED – please check if in doubt.

### **FIELD EXCURSION CLOTHING**

For the outdoor field work you must bring water, wear closed-toe and closed-heel shoes (no sandals, clogs or ballet flats). You should also wear sunscreen and a hat. You may get muddy, dusty, sweaty, rained on, etc. on our field trips, so pick your clothes and shoes accordingly. Long pants are required for field trips to the Elliott Chaparral Reserve, Del Mar Canyon Reserve and the Ecological Reserve.

### **FIELD SAFETY**

We take your safety in the field very seriously. There may be spiny cacti, ticks, biting ants, poison oak, and rattlesnakes at our field sites. Please follow all safety instructions in the lab and in the field, failure to do so will result in loss of participation points.

### **SUPPLIES YOU PROVIDE**

Thumb drive to save data and assignments, pens or pencils, all printed materials (including data collection sheets and labs posted on TritonED). It's helpful if one person per group brings a laptop on days when we are in lab (not field days).

### **TRAVEL WAIVERS & PHOTO PERMISSION**

Please fill out a travel waiver and photo permission form and return during the first lab period.

## **ATTENDANCE**

Attendance at every class meeting is required. Please be on time. Some of our field sites are behind locked gates, if you are late you will miss the lab entirely. While we may end early, some of the labs last the entire class period. It is not possible to enroll in another class or activity that overlaps our scheduled lab time. However, you should not come to lab if you are ill with a contagious disease, and we understand that situations sometimes arise that require you to miss class. If you are ill or have an unavoidable situation/emergency, please get in touch with Prof. Cleland by email. In this case your final grade will be calculated without those points (so for instance, out of a possible 975 points instead of 1000 points). Please understand that I will ask you to supply some kind of documentation (e.g. doctor's note, email from a Community Center staff member, etc.). If you miss a lab due to unavoidable and excused reasons, it is still your responsibility to get data from your group, and turn in your lab report or brief write up on time (unless a different due date/time is arranged). Veterans and active duty personnel with special circumstances (e.g. upcoming deployments, drill requirements, disabilities) are welcomed and encouraged to communicate these, in advance if possible, to the instructor.

## **TIME MANAGEMENT**

A 4-credit class is equivalent to 12 hours per week of effort. We have 8 hours scheduled in York Hall each week, but the activities sometimes will not require all 8 hours. The remaining time is scheduled so that you have access to the computer programs you need to analyze your data and prepare your lab write ups or lab reports, and you should be able to complete all activities in this time. You are welcome to work elsewhere, but recognize if you leave early you will need to schedule alternate times in your week to complete your work, or risk falling behind. The faculty and IAs will be present for all scheduled exercises and during initial stages of data analysis. After we discuss our findings as a group the faculty and IAs will leave you to work independently on completion of your lab write ups or lab reports. You should make sure you fully understand the data and assignments by the end of this group discussion each week.

## **DROP POLICY / WAIT LIST**

The Division of Biological Sciences requires that all students attend the 1<sup>st</sup> meeting of any lab course, otherwise you will be dropped from the course. The drop policy for lab courses is different than for lecture courses. Any student that drops after the end of the second lab meeting will have a "W" on their transcript. The Division of Biology has an automated, first on, first off policy regarding the wait list. If you are on the wait list and hope to add, you should participate in ALL course activities, exactly as if you were enrolled. Additional details: <http://biology.ucsd.edu/go/ug-labs>.

## **WRITING**

Writing will be a large portion of your grade. Scientific writing is a genre with specific expectations, and practice is the only way to improve. We will discuss the findings of each activity in class 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 appointment and walk-in help available 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>). You should schedule an appointment with them to go over your full draft, then revise your draft according to their suggestions before handing it in. 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.

## **GRADING**

Your grade for the course will be based on a total of 1000 points. On days when we are in the field or sometimes when we are processing samples you will have points based on participation (including attendance and contributions to the exercises). You will write two lab reports over the quarter, each one worth 125 points. In the weeks when you do not write a lab report you will write one or two "brief write-ups" worth 50 points. For lab reports, content will account for 75% of the grade, the remaining 25% will be based on clarity: writing concisely without unnecessary information, in complete sentences, with proper spelling and grammar. For brief write-ups, there will be a similar breakdown between content and

clarity, but the focus will be on completing all of the elements assigned, which may vary by assignment. Brief write-ups are due by the end of the day, ideally by the end of the lab period. Lab reports are due the following Wednesday to give time for students to meet with a writing tutor and revise their draft. Late assignments will lose 5% for each day the assignment is late (ex. 1 day and 1 hour late = 10% reduction in the grade). In week 7 you will make an individual presentation on a species of conservation concern, worth 125 points. And in week 10 you will contribute a blog post and brief presentation in the field on a plant found in the Ecological Park, together worth 75 points. More information on assignments, including rubrics, will be found on TritonED.

## 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 (please make arrangements to contact me privately) 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](mailto: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>