ECOLOGY LABORATORY (BIEB 121) Spring 2019
York Hall Room 4124 T/Th 9 a.m. - 1:50 p.m.

Instructor:
Elsa Cleland, Professor, ecleland@ucsd.edu
Office: Muir Biology Bldg 5256

Graduate Student Instructional Assistants:
Hank Baker, hkbaker@ucsd.edu
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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
<table>
<thead>
<tr>
<th>WEEK</th>
<th>Date</th>
<th>Activity/Location (meet in lab at 9 a.m. unless otherwise noted)</th>
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<tbody>
<tr>
<td>1</td>
<td>Tu Apr 2</td>
<td>Syllabus, mark-recapture lab (write up 50 pts, due end of day), Lecture on how to identify plants, walk to Scripps Natural Reserve (10 participation points)</td>
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<td>Th Apr 4</td>
<td>Lecture on Nutrient Network experiments, exercise on reading scientific papers (write up 50 points, due end of day)</td>
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<td>2</td>
<td>Tu Apr 9</td>
<td>Nutrients/herbivory limitation of plant growth (meet in field at 10 a.m., 10 participation pts)</td>
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<td>Th Apr 11</td>
<td>Sample processing (10 participation pts), Statistics review lecture</td>
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<td>3</td>
<td>Tu Apr 16</td>
<td>R tutorial, nutrients/herbivory data analysis (write up 50 pts, due end of day)</td>
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<td>Th Apr 18</td>
<td>How to write a lab report, Plagiarism self-assessment, Peer review (25 pts due in class), lab report (125 pts, due Wednesday April 23)</td>
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<td>4</td>
<td>Tu Apr 23</td>
<td>Habitat fragmentation and predation (meet in lab, walk to field, 10 participation pts)</td>
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<td>Th Apr 25</td>
<td>Lecture on Species of Conservation Concern assignment, set camera traps</td>
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<td>Predation data analysis (collect nest first, meet in lab 10 a.m., write up 50 pts due end of day)</td>
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<td>5</td>
<td>Tu Apr 30</td>
<td>Fauna of UCSD, analysis of camera trap images (write up 50 pts, due May 9th)</td>
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<td>Th May 2</td>
<td>Work on individual presentations, individual meetings, progress on natural history collection</td>
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<td>6</td>
<td>Tu May 7</td>
<td>Optimal foraging lab (meet in the field at 10 a.m., 10 participation points)</td>
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<td>Th May 9</td>
<td>Optimal foraging data analysis (write up 50 pts, due by end of day)</td>
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<td>7</td>
<td>Tu May 14</td>
<td>Intertidal community lab &amp; data entry (meet at SIO pier at 10 a.m., 10 participation pts)</td>
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<td>Th May 16</td>
<td>Intertidal data analysis (lab report 125 pts, due May 21)</td>
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<td>8</td>
<td>Tu May 21</td>
<td>Pollination (meet in lab, walk to Student Services Center, 10 participation pts)</td>
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<td>Th May 23</td>
<td>Pollination data analysis (write up 50 points, due by end of day)</td>
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<td>9</td>
<td>Tu May 28</td>
<td>Individual presentations on SD species of conservation concern (half of class meet in lab, 125 pts)</td>
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<td>Th May 30</td>
<td>Individual presentations on SD species of conservation concern (other half of class)</td>
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<td>10</td>
<td>Tu Jun 4</td>
<td>Behavioral ecology of birds at UCSD (meet in class, walk to campus sites, 10 participation pts)</td>
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<td>Th Jun 6</td>
<td>Presentations on bird behavior projects (50 pts in class), Natural history collection due (120 pts)</td>
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LAB SAFETY
Enrolled and waitlisted students MUST successfully complete the Biology Lab Safety Training and Assessment before the first lab session: https://biolabclass-safetyquiz.ucsd.edu/. 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 the lab 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 4124 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 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, etc. on our field trips, so pick your clothes and shoes accordingly. Shorts and flip flops may be worn only for the intertidal ecology lab at the SIO pier.

FIELD SAFETY
We take your safety in the field very seriously. There may be spiny cacti, ticks, biting ants or spiders, 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, as instructions are only given at the start of class. 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 990 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 10 hours scheduled in York Hall each week, but the activities sometimes will not require all 10 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 during data collection and 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 1st 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 9 you will make an individual presentation on a species of conservation concern, worth 125 points, and your Natural History Collections assignment is due Week 10 worth 120 points. More information on assignments, including rubrics, will be found on TritonED.

ACCOMMODATIONS 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 (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