ECOLOGY LABORATORY (BIEB 121) Summer 2020, Tu/W/Th/F 9:30 a.m.-1:20 p.m.

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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 plant and animal ecology, but with forays into intertidal ecology and ecosystem ecology. You will be in the field (outside) at least once per week making observations.

SCHEDULE

Date	Activity: (note pre-recorded lectures are usually watched on Canvas before our group Zoom session starts at 10 a.m. Due dates by 5 p.m. unless noted). * indicates no Zoom meeting
Tu June 30	9:30 Intro Canvas lecture, 10 a.m. meet on Zoom to discuss syllabus, technology, **group exercise** (ice breakers). Afterwards, independently you'll make field observations and read papers for tomorrow.
We July 1	9:30 Nutrient Network Canvas lecture, 10 a.m. **group exercise**, reading scientific papers (20 pts)
Th July 2	9:30 Statistics review Canvas lecture, 10 a.m. **group exercise**, R tutorial (20 pts)
Fr July 3	*Independence Day Holiday observed, no scheduled class. Weekend homework: watch "How to write a lab report" Canvas lecture, start writing your first lab report
Tu July 7	10 a.m. **group exercise** plagiarism self-assessment (20 pts), time for questions and independent writing
We July 8	*Natural history observations, independent writing
Th July 9	**9:30** lab report complete draft due (20 pts, no points if late), 10 a.m. **group exercise** peer review (20 pts)
Fr July 10	9:30 Species of Conservation Concern Canvas lecture, 10 a.m. Zoom questions, Lab report 1 due (200 pts)
Tu July 14	*Work on individual presentations independently, case study for individual presentation due (20 pts)
We July 15	9:30 Habitat/predation Canvas lecture, **group exercise** (data analysis) (lab notes 20 pts)
Th July 16	*Natural history observations or work on individual presentations
Fr July 17	9:30 am draft presentation due for 10 am optional **group exercise**, peer review (10 pts extra credit)
Mo July 20	Individual presentations on SD species of conservation concern due (200 pts)
Tu July 21	*Watch your peers individual presentations
We July 22	10 am group discussion, Conflicts and synergies in management due (20 pts), natural history observations
Th July 23	9:30 Urban birds Canvas lecture, 10 a.m. Zoom questions, **individual or group exercise**
Fri July 24	Bird diversity & behavior, **group exercise** (data analysis) (lab notes 20 pts)
Tu July 28	9:30 Intertidal ecology Canvas lecture, 10 am **group exercise** (data analysis) (lab notes 20 pts)
We July 29	*Natural history observations, lab report writing, Natural History Collection due (200 pts)
Th July 30	Optional research lecture: "Why timing matters for plants in the wild" (and work on lab report 2)
Fri July 31	Optional lecture & discussion: "grad school in ecology" 2nd lab report due (200 pts)

Note: Zoom sessions will be recorded and posted on Canvas, by participating in the session you agree to be recorded. You do not need to share your video, note that breakout rooms will not be recorded. This syllabus is subject to change, particularly because of campus efforts to contain covid-19. Any schedule changes will be posted on Canvas.

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* Zoom 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
In the past many students have said that going into the field and learning new species was their favorite part of the course. This summer we'll ask you to go into the field to make your own natural history observations; *please observe local rules about access to natural areas, and practice responsible social distancing*. 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 <u>must</u> 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 <u>never put your hands anywhere you can't see.</u>

TECNOLOGY
We will be using Zoom to this quarter (link for meetings will be in the calendar on Canvas). Please plan to use headphones with a microphone to reduce ambient noise (earbuds you'd use to talk on a cell phone are fine). You'll also need to download the following resources:

- Download the free "SEEK by iNaturalist" app for smart phones, which you'll use it for your Natural History Assignment.
- Download and install the free R statistical platform (https://www.r-project.org/), and the free Desktop version of R Studio, which is an easy way for you to use R (https://rstudio.com/products/rstudio/download/).
- You'll need to be able to use Microsoft Office products (Word, Excel and Powerpoint). These are freely available for students, if you haven't already please download them: https://blink.ucsd.edu/technology/computers/software-acms/available-software/microsoft-individual.html
- 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
<u>**Participation during lab hours is the best way to master the skills and concepts, please be on time**</u>. 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 email with Prof. Cleland if you require an alternate time or mode of interacting with the material.

COMMUNICATION
Our preferred mode for student questions will be <u>verbal, during our Zoom sessions</u>. All questions regarding course material, assignments, interpretation of results, and technological issues should be posed during class time. Email is appropriate for personal or confidential communications; for instance, please email Prof. Cleland if you are unable to participate in the scheduled lab time, if you need an extension on an assignment due to an emergency, or if you want to set up a one on one time to chat over Zoom about career options in ecology. The reason we ask you not to email questions about assignments is that often if you're confused it requires a discussion to get you clear, and email isn't efficient for this kind of communication.

TIME MANAGEMENT
BIEB 121 is a 4-credit class, and during summer session this is equivalent to 24 hours per week of effort. Please make sure to block out this time in your schedule. We will spend some time interacting over Zoom, but you'll use the remaining hours to work independently on your natural history assignment, write lab reports, 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 class period 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 AND LAB REPORTS
You will all write you first lab report on the same exercise (focused on the Nutrient Network Experiment). You will also analyze data in three additional following exercises, and turn in digital lab notes (these are abbreviated forms of a lab report, based on templates posted on Canvas). All notes should be finished before the end of lab time for each exercise. Note that you can choose to write your second lab report based on and of those three exercises, and your lab notes will form the basis for that lab report.

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