

ECOLOGY LABORATORY (BIEB 121) Summer 2019
York Hall Room 4124 TuWThF 10 a.m. - 2:50 p.m.

Instructor:

Chandler Puritty, Professor, cpuritty@ucsd.edu

Office: Muir Biology Bldg

Graduate Student Instructional Assistants:

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 we will be in the field (outside) once per week collecting data.

SCHEDULE

WEEK	Date	Activity/Location (meet in lab at 10 a.m. unless otherwise noted)
1	Tu July 2 Wed July 3 Th July 4 Fri July 5	Syllabus, Introduction of long-term projects/ Hike to Knoll Statistics review lecture/ R tutorial/ Mark Recapture lab + Brief write-up No class *optional* time to complete brief write-up #1
2	Tu July 9 Wed July 10 Th July 11 Fri July 12	*Brief write-up #1 due BEFORE CLASS* Introduction to Intertidal experiment/ "How to read a scientific paper"/ "How to write a lab report" Intertidal community lab & data entry/analysis (meet in lab, take bus to SIO pier) *R-quiz DURING CLASS (#2)*+ Group statistics and discussion Write intertidal lab report #1
3	Tu July 16 Wed July 17 Th July 18 Fri July 19	*lab report #1 draft due BEFORE CLASS*, in class: plagiarism self-assessment, peer review, revision / Introduction to Habitat fragmentation and predation and iNaturalist/ (meet in lab, walk to field), set camera traps *Revised draft of lab report #1 due* Predation data analysis (collect nest first, meet in lab 10 a.m.) + Predation brief write-up #3 Analysis of camera trap images documenting fauna of UCSD + iNaturalist brief write-up #4 Work on presentations
4	Tu July 23 Wed July 24 Th July 25 Fri July 26	*brief write-ups #3 & 4 due BEFORE CLASS* Introduction to Urban bird behavior and Pollination Bird behavior or pollination experiment data collection and analysis (weather dependent) Bird behavior or pollination experiment data collection and analysis Write Pollination *OR* bird behavior lab report #2
5	Tu July 30 Wed July 31 Th August 1 Fri August 2	*Lab report #2 due* Work on natural history and endangered species project Work on natural history and endangered species project (partners). Final Presentations Final Presentations

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

Adapted from faculty mentor Elsa Cleland.

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 Canvas. Please plan to print the instructions for each lab, along with any sheets required to record data in the field. All assignments will be turned in online.

TEXTBOOK

"Ecology" (Cain, Bowman, Hacker Eds) is a recommended reference text if you need a refresher on ecological principles

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 to collect data. 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 a 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

We will be spending a great deal of 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 (but note you'll still need pants and closed toe shoes in lab that day).

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

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). 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.

TRAVEL WAIVERS & PHOTO PERMISSION

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

ATTENDANCE

Adapted from faculty mentor Elsa Cleland.

Attendance at every class meeting is required. Please be on time, as instructions are only given at the start of class. Arriving late will result in a loss of participation points. 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 have a situation arise that will cause you to unavoidably miss lab you must email Prof. Puritty prior to lab, except in the case of an emergency. For a maximum of two excused/unavoidable absences, your final grade can be calculated without those points (so for instance, out of a possible 990 points instead of 1000 points). Please understand that you must supply documentation in order to have a grade accommodation (e.g. doctor's note, email from a Community Center staff member, etc.). Also note that if significant illness or other unavoidable absences require you to miss 4 or more lab periods it will not be possible for you to pass the course and you will be encouraged to withdraw. If you miss a lab due to unavoidable and excused reasons, it is still your responsibility to complete assignments 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 planned 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, write lab reports and prepare presentations, 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. If you have extra time at the end of lab after completing your lab notebook you should spend that time working on your Natural History Assignment, Independent Presentation, or second lab report. 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 assignments. 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 can schedule an appointment with them to go over your full draft, then revise your draft according to their suggestions before handing it in. Note that you should always follow formatting guidelines in "How to write a lab report," but you can and should seek their 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 NOTEBOOKS

You will keep a virtual lab notebook over the quarter as a Google doc. 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 any of the labs from weeks 2-4, and the notes from your lab notebook will form the basis for that lab report. The lab notebooks will not be graded daily, but rather we will grade lab notebooks twice randomly between weeks 2 and 4. In lab on those days you will be asked to download your lab notebook as a pdf and use the Turnitin In link on

Adapted from faculty mentor Elsa Cleland.

Triton Ed to grade the assignment. Lab notebooks shared in an email will not be graded, and will receive 0 points for that assignment.

GRADING

Your grade for the course will be based on a total of 1000 points. One fifth of the total (200 points) is for participation, including arriving on time and contributing to the exercises each day (10 points per day). You will write two lab reports over the quarter, each one worth 150 points and 4 brief write-up assignments, each worth 50 points. Your first lab report will be on the Intertidal experiment but for your second one, you may choose between either of the experiments in week 4. In week 5 you will make a partner presentation on a species of conservation concern, worth 100 points, and your Natural History Collections assignment is due Week 5 worth 100 points. There will also be two random lab notebook checks, each worth 50 points. Late assignments will lose 5% for each day the assignment is late (ex. 1 day and 1 hour late = 10% reduction in the grade). More information on assignments, including rubrics, will be found on TritonED. Grades are based on a traditional grading scale, and are not curved. Here's an example: <http://ixd.ucsd.edu/home/f16/grading-scale.html>

Participation 200pts

Lab Reports 300pts

Brief Write-ups 200pts

Species of Concern Project 100pts

Natural History 100pts

Lab notebook checks 100pts

1000pts available

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>