

**ECOLOGY LABORATORY (BIEB 121) Fall 2015**  
**York Hall Room 1310 T/Th 9:30 a.m.- 2:30 p.m.**

Instructor:

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Office: Muir Biology Bldg 1115

Graduate Student Teaching 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 (writing). Biometry 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.

**TENTATIVE SCHEDULE**

| <b>WEEK</b> | <b>Date</b>            | <b>Activity/Location</b>  |
|-------------|------------------------|---|
| 0           | Th Sept 24             | Syllabus, mark-recapture lab (50 pts), prep for greenhouse experiment (in lab)  |
| 1           | Tu Sept 29<br>Th Oct 1 | Insect diversity (meet in lab, walk to the Scripps Coastal Reserve), safety video<br>Sample processing and data analysis (50 pts, in lab)                   |
| 2           | Tu Oct 6<br>Th Oct 8   | Statistics review, R tutorial (50pts), Habitat Fragmentation 1<br>Habitat Fragmentation 2 (collect nest on campus, return to lab for data analysis, 50 pts) |
| 3           | Tu Oct 13<br>Th Oct 15 | Eucalyptus spatial aggregation (meet in lab, walk to Ecological Park on campus)<br>How to write a lab report, peer review (100 pts, in lab)                 |
| 4           | Tu Oct 20<br>Th Oct 22 | Kendall Frost marsh restoration (meet at Kendall Frost Marsh Reserve)<br>data analysis (in lab, 50 pts)   |
| 5           | Tu Oct 27<br>Th Oct 29 | Optimal foraging (meet at the Del Mar Canyon Preserve)<br>Optimal foraging data analysis (100 pts, in lab)  |
| 6           | Tu Nov 3<br>Th Nov 5   | Decomposition (50 pts, in lab)<br>Individual meetings and/or time to work on individual presentations   |
| 7           | Tu Nov 10<br>Th Nov 12 | Intertidal communities (meet in York Hall 10:30, will go to SIO pier 12:30-2:30)<br>Data analysis (50 pts, in lab)  |
| 8           | Tu Nov 17<br>Th Nov 19 | Individual presentations on SD species of conservation concern (100 pts)<br>Individual presentations on SD species of conservation concern                  |
| 9           | Tu Nov 24<br>Th Nov 26 | Barcoding data analysis (50 pts, in lab)<br>Thanksgiving, no lab  |
| 10          | Tu Dec 1<br>Th Dec 3   | Harvest greenhouse experiment (meet in lab, walk to greenhouses),<br>Sample processing/data analysis (100 pts, in lab) – Final meeting, no final exam       |

**LAB SAFETY and ACCESS (York 1310)**

The door code is: XXXXXXXXX, this can be used to access the computer labs in York 3060 & 3070 as well. No food or drink is allowed in any of the York labs – sadly not even coffee. 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.

**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 TED. Please plan to print the instructions for each lab, along with any sheets required to record data in the field. Many of the assignments will be turned in on TED electronically.

**TEXTBOOK**

There is no official textbook, but I'll have a copy of "Ecology" (Cain, Bowman, Hacker Eds) in the lab that you're welcome to borrow. This is the same text used in Intro to Ecology BIEB 102, and is a good reference.

**TESTS**

There will be NO final exam or tests in this course. The last meeting will be Thursday Dec. 3rd.

**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 homework assignments and lab reports.

**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 TED – 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 Del Mar Canyon Reserve and the Ecological Reserve.

**FIELD SAFETY**

We take your safety 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**

Laptop (it's helpful for at least one person in a group to have one on Thursdays when we are analyzing data), pens, all printed materials (including data collection sheets and labs posted on TED).

**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. We work as a group - it is not fair to those who arrive on time to have to wait for latecomers. Also, 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 that overlaps our scheduled lab time. 20% of your grade is for participation, while most of you will easily earn these points, you will lose these points if you are absent, late, or not contributing to the activity. If you are ill or have an unavoidable emergency you must supply written documentation in order to avoid losing participation points (e.g. doctor's note). If you miss a lab you will be assigned 5 hours of lab or field activities in a time that fits into your schedule and it is still your responsibility to get data from your group, and turn in your lab report or brief write up on time.

## TIME MANAGEMENT

A 4-credit class is equivalent to 12 hours per week of effort. We have 10 hours of time 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 TAs 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 TAs 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 Biology 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. The Division’s policies are detailed on this website:

<http://biology.ucsd.edu/undergrad/course/waitlist.html>. If you are on the wait list and hope to add, you should participate in ALL course activities, exactly as if you were enrolled.

## WRITING

Writing will be a large portion of your grade. Good writing takes practice and effort, just like learning to play the piano or play a sport. Scientific writing is a genre with specific expectations, and practice is the only way to improve. We will discuss the findings that related to each lab report in class, and will try and give as many suggestions as possible in the grading process. Grading expectations will get stricter as the quarter progresses as we expect you to incorporate these suggestions. There are no re-writes. 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?). Because of this, there will often be more than one right way to do things. Your overall ability to communicate, through words, statistics, and graphics, will count for a lot. If you are concerned about your writing, have a friend read it through for 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. 20% of your final grade (20 points each week, for a total of 200 points across the quarter) will be based on participation (including attendance, attitude and contribution to the exercises).

You will write three lab reports over the quarter, each one worth 100 points. In the weeks when you do not write a lab report you will write one or two “brief write-ups” each worth 50 points. For lab reports, content will account for 75% of the grade, based on correctness and completeness of information conveyed in 5 equally weighted components: 1) introduction, 2) description of the methods, 3) presentation of results, and 4) interpretation of discussion, with 5) proper citation of references. 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. All assignments are due by the start of the next class meeting period, late assignments will lose 5% for each day the assignment is late (ex. 1 day and 1 hour late = 10% reduction in the grade). Finally, in week 8 you will make an individual presentation on a species of conservation concern, worth 100 points. More information on this assignment can be found on TED.

## 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>