

**ECOLOGY LABORATORY (BIEB 121) Spring 2012**  
**York Hall Room 1310 T/Th 11 a.m.- 4:30 p.m.**

Instructor:

Elsa Cleland, Assistant Professor  
Office: Muir Biology Bldg 1115  
Office hours by appointment

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) every week collecting data.

**TENTATIVE SCHEDULE**

<b>WEEK</b>	<b>Date</b>	<b>Activity/Location</b>
1	Tu Apr 3 Th Apr 5	Syllabus, safety, travel waivers, writing a scientific paper, mark-recapture (in lab) Computer lab introduction, stats review (in lab)
2	Tu Apr 10 Th Apr 12	Set up greenhouse experiment (meet in lab, walk to greenhouses) Eucalyptus spatial aggregation (meet in lab, walk to Ecological Park on campus)
3	Tu Apr 17 Th Apr 19	Habitat Fragmentation 1 (meet in lab, walk to Ecol. Park, return for data analysis) Habitat Fragmentation 2 (meet in lab, walk to Ecol. Park, return for data analysis)
4	Tu Apr 24 Th Apr 26	Controls on primary production (meet at Elliott Chaparral Reserve) Sample processing/data analysis (in lab)
5	Tu May 1 Th May 3	Species-area and productivity-diversity relationships (meet in lab, walk to Scripps Coastal Reserve) Sample processing/data analysis (in lab)
6	Tu May 8 Th May 11	Decomposition 1 (in lab) Decomposition 2 (in lab)
7	Tu May 15 Th May 17	Intertidal competition/colonization (meet in lab, ride shuttle to SIO) Data analysis (in lab)
8	Tu May 22 Th May 24	Optimal foraging (Del Mar Canyon Preserve) Optimal foraging data analysis (in lab)
9	Tu May 29 Th May 31	Individual presentations on SD species of conservation concern Individual presentations on SD species of conservation concern
10	Tu Jun 5 Th Jun 7	Harvest greenhouse experiment (meet in lab, walk to greenhouses) Sample processing/data analysis (in lab) – Final meeting, no final exam

**ROOM ACCESS (York 1310)**

Students can find the information on-line using the Account Lookup link at <http://acs.ucsd.edu>. Look for the list of rooms specific to the class and will find a password protected link for the door code. This link now provides an option to have the code e-mailed to a student's cell phone.

## **ROOM SAFETY**

Please never prop open the door to York 1310 unless class is in session. ACS will rescind all students' access codes if they see the door propped open. This is for security reasons – both your safety and the computer's. No food or drink is allowed in any of the York labs – sadly not even coffee.

## **ASSIGNMENTS**

The labs for the quarter will be posted on TED. Please plan to print and bring each lab with you to class.

## **TEXTBOOK**

There is no official textbook, but 2 copies of “Ecology” (Cain, Bowman, Hacker Eds) are on reserve in the Biomedical library. 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 June 7.

## **SCHEDULE**

For most of the quarter we will be in the field in the beginning of the week collecting data, and in the lab at the end of the week analyzing data. The lab reports are usually due one week after the data analysis. There are exceptions, however – see the end of the syllabus for due dates. Many of the labs last the entire class period. It is not possible to enroll in another class that overlaps our scheduled lab time.

## **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. We will often meet at off-campus locations. You are required to provide your own transportation. On the first page of the syllabus, the field sites are in parentheses. When we meet in the lab, we will walk or take the bus to the field site. You will want a free UCSD Bus Zone sticker for your UCSD ID (available from the campus parking office in the Gilman Parking Structure). If we do not meet in the lab, you will need to provide your own transportation to the field site. Except for highly unlikely circumstances, we will go on our field excursions rain or shine. Any exceptions will be emailed via your ucsc 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 may be counted as absent if you show up on a field trip in inappropriate shoes. 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 Elliott, Del Mar Canyon Reserve, and the Ecological Reserve.

## **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.

## **TRAVEL WAIVERS & PHOTO PERMISSION**

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

## **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>).

## **ATTENDANCE**

Attendance at every class meeting is required. Be sure to sign in on the sign-in sheet. 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. 10% 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 it is your responsibility to get data from your group, and turn your lab report in on time.

### **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 students that drops after the end of the second lab meeting will have a "W" on their transcript. The Biology Department 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/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.

### **SUPPLIES YOU PROVIDE**

Calculator, all printed materials (including data collection sheets and labs posted on TED).

### **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 specific genre with specific expectations, and practice is the only way to improve. We will discuss each lab report, and I will try and give as many suggestions as possible. My grading expectations will get stricter as the quarter progresses as I expect you to incorporate my 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 & Due Dates**

Your grade for the course will be based on a total of 1000 points. Each lab report is worth 100 points (except for week 1, where there will be two in-class exercises each worth 50 points). For each lab or exercise, 10% of the grade will be based participation (attendance and effort in data collection & analysis). 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 15% will be based on clarity: writing concisely without unnecessary information, in complete sentences, with proper spelling and grammar.

Week 1:	Mark-recapture lab report & peer-review exercise = 50 (due end of class Apr 3) Succession statistics exercise = 50 (due end of class Apr 5)
Week 2:	Nothing due this week, delay due to long-term greenhouse experiment set up
Week 3:	Eucalyptus spatial aggregation = 100 (due start of class Apr 19)
Week 4:	Habitat fragmentation lab = 100 (due start of class Apr 24)
Week 5:	Herbivory/fertilization field experiment lab = 100 (due start of class May 1)
Week 6:	Species/Area, Productivity/diversity lab = 100 (due start of class May 8)
Week 7:	Decomposition lab = 100 (due start of class May 15)
Week 8:	Intertidal lab = 100 (due start of class May 22)
Week 9:	Optimal foraging lab = 100 (due start of class May 29) Individual presentations (due day of your presentation, either May 29 or 31)
Week 10:	Greenhouse experiment lab (due by 5 p.m. Friday June 8)

### **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. For information on academic integrity at UCSD: <http://www.senate.ucsd.edu/manual/appendices/app2.htm>