

Ecology Lab (BIEB 121) - Fall quarter 2021

ECOLOGY LAB. 4 units. BIEB 121 is designed to familiarize students with ecological methods, problem solving, critical thinking, data presentation, data analysis, and scientific communication (in the form of both presentations and writing). Students perform fieldwork and conduct statistical analyses primarily on data collected on the UCSD campus (including the UCSD Ecological Reserve and Scripps Coastal Reserve). Students should provide and use their own computer.

Prerequisites: BIEB 100, MATH 11 or SIO 187 **and** BILD 3

Course times: 9-1250 Tu & Th in York Hall 4124. This course will combine both remote and in person instruction. Use of the lab will primarily be limited to checking in and out equipment and in some cases using fixed equipment (e.g., balances, computers) with subsets of the class sequentially rotating through within a given class period.

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Instructional assistants: Caitlin Doherty (cdoherty@ucsd.edu) & Nikki Mercer (nmercerc@ucsd.edu)

- **Assignments and grading.** There are **eight** assignments in this course and a total of **200** possible points. Assignments include the following: (i) plant trait data analysis and presentation exercise (10 pts), (ii) critical reading exercise (10 pts), (iii) rare organism class presentation (40 pts), invasive species fact sheet (20 pts), and three lab reports based on field data projects (40 pts x 3). Note that of the five field data projects scheduled, you will pick *three* to write up for credit. There is no final exam, and the class will not meet during finals week.
- **On campus fieldwork.** Lab reports will be based on field data projects (= 'labs'). For each field data project, the class will be divided into subgroups of students who will each collect their own data. Data sets will then be pooled across the entire class for analysis. During class sessions that involve campus fieldwork, please bring a notebook, pen/pencil, phone, and water. Please wear sturdy shoes; a hat and sunscreen are recommended. On campus fieldwork will usually be conducted on Tuesdays (see schedule). Please follow all safety instructions in the field.
- **Remote instruction.** We will meet remotely to discuss data organization, analysis, and presentation. Attending these meetings will be essential for understanding how to write up lab reports. Remote meetings will typically be held on Thursdays after each Tuesday field data project. During remote meetings, we will also present an overview for the fieldwork planned for that next week. Class presentations (9 & 23 Nov) will also be conducted remotely.
- **Readings.** There is no assigned textbook for this class. Each week's activities will involve supplementary readings (articles from the primary literature) that will be placed on Canvas prior to when readings are discussed.

Ecology lab schedule for fall 2021

Date	Lab meeting (IP = in person; R = remote)	Due dates
23 Sep (Th)	IP: Course overview & introduction + campus ecosystem tour I	
28 Sep (Tu)	IP: Campus tree tour + plant trait data (PTD) collection	
30 Sep (Th)	R: Introduction to R + plant trait data analysis	
5 Oct (Tu)	IP: Campus ecosystem tour II + lab 1 intro	PTD write up
7 Oct (Th)	IP: Critical reading exercise (CRE) + predation risk experiment	
12 Oct (Tu)	IP: Lab 1 - predation risk experiment	CRE write up
14 Oct (Th)	R: Lab 1 - predation risk experiment: analysis + lab 2 intro	
19 Oct (Tu)	IP: Lab 2 - trophic ecology	Lab 1 report
21 Oct (Th)	R: Lab 2 - trophic ecology analysis + lab 3 intro	
26 Oct (Tu)	IP: Lab 3 - marine wrack: a trophic subsidy	Lab 2 report
28 Oct (Th)	R: Lab 3 - marine wrack analysis + lab 4 intro	
2 Nov (Tu)	IP: Lab 4 - detritivore experiment	Lab 3 report
4 Nov (Th)	R: Lab 4 - detritivore experiment analysis + lab 5 intro	
9 Nov (Tu)	R: Presentations on rare organisms I	Lab 4 report
11 Nov (Th)	Veteran's Day	
16 Nov (Tu)	IP: Lab 5 - bird behavior lab	
18 Nov (Th)	R: Lab 5 - bird behavior lab analysis + conservation intro	
23 Nov (Tu)	R: Presentations on rare organisms II	Lab 5 report
25 Nov (Th)	Thanksgiving	
30 Nov (Tu)	IP: Conservation of campus biological resources	
2 Dec (Th)	R: Ecology lab career panel	ISFS

- **Software & smart phone apps.** We will be using R, which can be downloaded for free onto your computer. The free smart phone apps 'Seek' and 'GPS Location' will also be used in this class.