Laboratory for Population and Community Ecology – IB 153L

Instructor: ***Wayne Sousa***
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Office Hours: Monday 11-12, 4182 VLSB; or by appt.

GSI: ***Margaret Metz***
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Office Hours:

Location: Monday and Wednesday, 1-5 pm
Lectures – 3003 VLSB
Computer labs – 3056 VLSB (unless otherwise notified)
Field trips – meet at Thrifty Car Rental, NW corner of the intersection of Oxford and University

Website: http://ib.berkeley.edu/courses/ib153L

Grading: 200 points total
- Labs – 15 points each (7 total)
- Methods paper – 40 points
- Participation – 35 points
- Final oral presentation – 20 points

90-100% = A, 80-89% = B, 70-79% = C, 60-69% = D, <60% F

Course Requirements

Lectures: Lectures will introduce you to each of the topics covered in the course. Attendance is essential because lectures will provide an in-depth discussion of course topics; much of this material will not be covered in handouts. Additionally, the lectures will provide information that will be critical to completing each lab assignment. If you miss a lecture, you are still considered responsible for the material. Although most of the labs will involve group work that will be graded collectively, individuals who miss (without prior permission) the lecture preceding a particular field exercise can expect a lower grade on the write-up of that exercise than other group members.

Labs: The labs will give you hands-on experience with a variety of methods used in population and community ecology. At the same time we hope to foster an appreciation for the natural history of the habitats where we will be working. There will be seven labs covering the course material. Each lab exercise will focus on the particular questions and methods discussed in the lecture that immediately preceded it. Since class time is limited and the labs involve travel to the field, promptness and focus are paramount. The class van will leave the Thrifty parking lot by 1:15 – don't be late! If circumstances require that you drive your personal vehicle to the field site, the instructors should be notified of this prior to the field trip. Field trips may sometimes extend beyond 5 PM; you will be notified in advance whenever possible. All necessary field equipment will be provided, but it is important that you dress for all conditions (labs will be

conducted rain or shine) and bring any personal items (water, snacks, etc.). Be prepared to get dirty and work hard, but also be prepared to have a good time because field ecology is fun!

Lab write-ups: Each lab write-up will be a collective effort produced by the group of students who worked together in the field. All lab write-ups are due one week following the in-class analysis of data. Data will be analyzed using a variety of computer programs, including spreadsheets, statistical packages, and other specialized software. The lab write-ups will follow standard scientific format (introduction, methods, results, discussion). Write-ups must be typed in 12-point font and not exceed 5 single-spaced, 8.5 x 11 pages, including figures, tables, and references. Rambling will not be rewarded, so take your time to outline what you need to say before you write and then do so as clearly and concisely as possible. All citations will follow the standard format of the journal *Ecology*. Collaboration between classmates is strongly encouraged and additional help is always available during office hours.

Other activities: There will be one major written assignment involving an in-depth review of one of the methods used in the class, or another ecological method of particular interest to you. You will also summarize the results of your review in an oral presentation to the class at the end of the semester. Instructions for the assignment and presentation will be provided well in advance of the due date.

Readings*:* The primary text for the class is Ecological Methodology (2^{nd} edition) by Charles Krebs. This text will serve as an important source of background information about many of the methods discussed in class as well as a guide to many of the specific analyses you will be conducting. Although the text is relatively expensive, should you pursue advanced studies in ecology or other areas of environmental science, it is a reference that you will use throughout your career. Krebs discusses many more topics and methods than we are able to cover in one semester, so we have assigned specific sections relevant to the methods we have chosen to teach you. We will also discuss some methods and analyses that are not in Ecological Methodology and supplementary readings may be provided for specific labs. You are expected to read the assigned material *before* class; doing so will be particularly helpful for the analyses of data collected in the labs.

Laboratory in Population and Community Ecology – IB 153L

Day	Date	Site	Topic
Monday	25-Aug	L	Introduction and organization
Wednesday	27-Aug	L	Standard sampling procedures
Monday	1-Sept		**Labor Day**
Wednesday	3-Sept	L	Descriptive statistics; simple statistics
Monday	8-Sept	C	Excel data entry and data analysis
Wednesday	10-Sept	F	Sampling designs, sample size, and quadrat size and shape
Monday	15-Sept	C	Sampling data analysis. Lab write-up discussion
Wednesday	17-Sept	L	Spatial patterns
Monday	22-Sept	F	Spatial patterns
Wednesday	24-Sept	C	Spatial pattern analysis Writing scientific papers discussion
Monday	29-Sept	L	Estimating the abundance of mobile organisms
Wednesday	1-Oct	F	Mark-recapture (mark and release)
Monday	6-Oct	F	Mark-recapture (re-capture)
Wednesday	8-Oct	C	Mark-recapture analysis
Monday	13-Oct	L	Species diversity and similarity
Wednesday	15-Oct	F	Species diversity and similarity
Monday	20-Oct	C	Species diversity and similarity analyses
Wednesday	22-Oct	L	Interspecific associations
Monday	27-Oct	F	Interspecific associations
Wednesday	29-Oct	C	Interspecific association analysis
Monday	3-Nov	L	Habitat choice (preference/selectivity)
Wednesday	5-Nov	F	Habitat choice
Monday	10-Nov	C	Habitat choice analysis
Wednesday	12-Nov	L	Experimental design
Monday	17-Nov	F	Set up predation experiment
Wednesday	19-Nov	L	Library: literature search lecture
Monday	24-Nov	F	Monitor predation experiment
Wednesday	26-Nov	L	Open for library research
Monday	1-Dec	C	Analyze predation experiment data
Wednesday	3-Dec	L	Methods presentations

L = Lecture (3003 VLSB)
F = Field trip
C = Computer lab (3056 VLSB)