

## Tentative Syllabus: Marine Ecology Summer 2009

**Summer Session 1: T/Th 9:00-12:30 pm**

**Instructors:**

**Samantha Forde**

**Cynthia Hays**

**Course Objectives**

This course is intended to teach you a basic understanding of the ecological processes that determine the structure and dynamics of populations and communities in coastal marine ecosystems, and how to conduct ecological research to reveal such processes. When you leave this course, you should know how to: (1) look for, identify and describe patterns in nature, (2) develop testable alternative hypotheses for the causes of observed patterns, and (3) evaluate the appropriate empirical tests of the predictions of hypotheses to explain observed patterns.

The structure of the course reflects these goals. We will discuss the process of doing science, then use classic papers in marine ecology as the framework for understanding the process of doing sound research. We will also take a field trip to the rocky intertidal on the second day of class, which will provide you with your first opportunity to identify patterns.

Many of the papers presented in lecture are central or seminal papers for paradigms in marine ecology. Discussions are based upon the idea that one way to learn to do good science is to evaluate the work of others. For this purpose, small groups of students are responsible for leading discussions of work conducted subsequent to, and that compliments, the classic studies presented in lectures. In addition, guest lecturers will discuss their own research. This will provide students with current examples of how one poses and tests hypotheses in ecology.

This is not intended to be a basic ecology course. If you feel that you need additional help understanding ecological concepts, we recommend the following **optional** resources:

**Supplemental Texts:**

Bertness MD, Gaines SD, Hay ME. 2000. *Marine Community Ecology*. Sinauer Assoc. ISBN 0878930574

Sumich, James L. and Morrissey, John . *Introduction to the Biology of Marine Life*, Eighth Edition. Jones and Bartlett Publishers. **ISBN: 076373313X**

**Basic ecology references:**

- Townsend CR, M. Begon and JL Harper. 2003. *Essentials of Ecology*. Second Edition. Backwell Science, Cambridge, MA. ISBN 1-4051-0328-0
- Gotelli, NJ. 2001. *A Primer of Ecology*. Third Edition. Sinauer Associates, Inc., Sunderland, Massachusetts. ISBN 0-87893-273-9 (this is strictly a population ecology text)

- Krebs, CJ. 1999. *Ecological Methodology*. Second Edition. Benjamin Cummings, Menlo Park, CA. ISBN 0-321-02173-8
- Morin, PJ. 1999. *Community Ecology*. Backwell Science, Cambridge, MA. ISBN 0-86542-350-4

**Assessment**

There will be two scheduled exams. These represent 30% of the final class grade. Another 20% of your grade will come from participation in discussion and lecture (THIS IS INTENDED TO BE A PARTICIPATORY CLASS). 40% of your assessment will be based on the combination of patterns, a written pre-proposal, and a written proposal. Remember the major goal of this course is to teach you how to conduct marine ecological research. Lectures and exams have limited ability to teach and assess how to conduct marine ecological research. For this reason, you will be expected to write a research proposal at the end of the class. The first step of writing the proposal will be a description of pattern(s).

Exams	30%
Participation in Discussion	15%
Participation in Lecture	5%
Patterns and preproposal	15%
Student Critiques	10%
Final Proposal	25%

**Email Etiquette:**

The most effective way for you to get help from us is to come to our office hours. Therefore, you should note that we will only be responding to emails twice per week on days that we do not hold office hours. All emails must have in the subject line “Bio 108”.

**Policy on academic integrity:**

Plagiarism comes in lots of different flavors, ranging from the completely blatant (for example, handing in someone else’s paper as your own), to the more subtle (not citing the sources you use in your paper properly -- even if you cite a book or paper as a general source, it is still plagiarism to lift whole phrases or sentences, unless you use direct quotes). Science is a process that builds successively on the work of the others, and giving proper credit for ideas and data is a critical part of this process. As such, we treat plagiarism very seriously.

If you are caught cheating on an exam or in a major act of plagiarism, you will receive a failing grade (zero points) for that assignment, and we will file a report with the University (see the link below for UCSC’s policy on academic integrity). If you commit a lesser act of plagiarism, you will receive a substantially lower grade on that assignment. The basic message we wish to convey is: just don’t do it. In this digital age, there is a surprisingly high probability that you will be caught. If you have questions about how to properly cite any sources you use in your work, please ask us.

[http://www.ucsc.edu/academics/academic\\_integrity/undergraduate\\_students/](http://www.ucsc.edu/academics/academic_integrity/undergraduate_students/)

**TENTATIVE LECTURE OUTLINE – MARINE ECOLOGY SUMMER SESSION 2009**

lecturer:	date	class:	due:	
both	23-Jun	1	introduction, post-settlement processes 1 and 2	
sf	25-Jun	2	intertidal field trip, <b>discussion</b>	
sf	30-Jun	3	philosophy of science, <i>guest lecture</i> , statistics	patterns
sf	2-Jul	4	population ecology, <b>discussion</b> , community ecology	
sf	7-Jul	5	maintenance of diversity , <i>guest lecture</i> , exam review	pre-proposal
sf	9-Jul	6	exam 1, <b>discussion</b>	
ch	14-Jul	7	stability and life history, <i>guest lecture</i> , pre-settlement 1	
ch	16-Jul	8	presettlement 2, <b>discussion</b> , presettlement 3	critiques
ch	20-Jul	9	presettlement 4, diversity 2,exam review	
ch	23-Jul	10	exam 2, <b>discussion</b>	final proposal