

BIO 179: FALL 2005
Seminar in Marine Biology
General overview of course

Tuesdays 1:30 – 4:00 PM

Course pre-requisite: Bio 164 or equivalent (without Bio 164, permission of instructor required)

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In this course we will explore together the primary research literature in areas selected by mutual consent. Sample topics from past years include fertilization ecology, symbiosis, migration and dispersal, larval ecology, responses to pollutants, biological invasions, and the physiology of deep-sea animals. In a typical semester we explore 4-5 different topics. The course has a strong focus on developing critical reading skills and effective writing skills through frequent, short assignments. Students also give several short oral presentations throughout the semester. There are no exams, but there is a major written project that will go through at least 2 drafts during the semester. The skills you gain in this course will serve you well in any area of biology and in most other professions. The course is also excellent preparation for graduate school.

What I try to accomplish in Bio 179:

1. ...to teach you how to interpret data critically and productively.
2. ...to give you practice in reading the formal scientific literature and in asking yourself useful questions about it, questions that might lead you to challenge the author's conclusions or might lead to interesting new research projects.
3. ...to improve your ability to summarize and synthesize information, to organize ideas into logical and convincing arguments, and to express those arguments clearly and concisely.
4. ...to give you practice in presenting information orally.
5. ...to build a sense of community in which people can be supportive and still give useful advice and criticism.
6. ...to show you that the fun part of being a biologist is asking new questions and designing experiments to address those questions.

The rules of the game:

Attendance: Class participation is essential to the success of this course. Please don't miss class. We can't have good discussions if you aren't there.

Assignments: No late work will be accepted.

All assignments must be typed double-spaced, with adequate margins at the left and right sides of each page.

Please put your NAME and the DRAFT DATE at the upper right of the first page of each assignment.

Number all pages.

Always turn in the original and keep a copy for yourself.

When turning in revisions of previous assignments, please append the previous draft so I can see what you have changed.

Term Project: A research proposal on any topic in Marine Biology. The proposal must contain at least five references from the primary literature, discussed in detail sufficient to demonstrate thorough understanding. You will get a lot of help with this, from me and from fellow students.

Student responsibilities:

- 1) Come to class with a thorough understanding of the assigned reading; you will serve as the day's local authority on that topic.
- 2) Proofread your work carefully before you turn anything in to me or to fellow students.
- 3) Come to class prepared to ask questions about anything that you found puzzling in the readings.
- 4) Ask questions if you don't understand or don't agree with something that anyone else (including me) says during class.

Journals to keep an eye on in the Reading Room (most are also available online):

Biological Bulletin (call number: QH 301 .B38)
Ecology (QH 540 .E3)
Evolution (QH301 .S753)
Invertebrate Biology (QL362 .I564)
Journal of Experimental Marine Biology and Ecology (QH91 .A1 J6)
Journal of the Marine Biological Association of the United Kingdom
Marine Biology (QH91 .A1 M35)
Marine Ecology Progress Series (QH 541.5 .S3 M26)
Current Contents ("Agriculture")

Looking through current issues of these journals (available in the Reading Room) is a great way to find viable topics and references for research proposals. Sometimes you will also find papers about marine animals in the journals *Conservation Biology*, *Animal Behavior*, and *Behavioral Ecology*. Older volumes of these journals are downstairs in the stacks at Tisch.