

Biology 3244 – Experimental Marine Biology

Summer I 2014

Lecture: MTWR 9:00-10:30, 332 BioLife

Lab Section 1: TR 1:30-3:30, 233 BioLife

Lab Section 2: TR 10:45-12:45, 233 BioLife

Instructor: Dr. Kyle Mara
Email: kylemara@temple.edu
Office: Biology-Life Science 248B

Lab 1:
email:
Lab 2:
email:
office:

Required Text: Jeffrey Levinton (2014) Marine Biology: Function, Biodiversity, and Ecology. 4th Edition. Oxford University Press.

Course Description: Experimental Marine Biology is an upper level Biology course focused on the types of experiments that are used to further the science of Marine Biology. The course will be structured around three themes: Oceanography, Physiology, and Ecology. The Oceanography section will examine the marine environment in terms of the physics of current flow and the chemical properties of seawater. The Physiology section will examine how different organisms respond to these abiotic factors. In the Ecology section, we will discuss how organisms interact with each other as individuals and populations, and how communities and ecosystems are structured.

To compliment these discussions, there will be a series of paired laboratories and recitations. The laboratories will provide the students with a hands-on experience with the different types of experiments in Marine Biology and will include trips to sites in the field to work with some of the sampling equipment that is commonly used. Following the laboratory, there will be a recitation session where the teaching assistants will provide instruction on the analysis of the data collected, including an introduction to some statistical techniques, and guidance on the writing of lab reports.

Approach to Teaching: I am very much a lecture oriented instructor. If you come to class, pay attention, and (most importantly) TAKE NOTES IN CLASS, you will do well. I will not force-feed you the answers to the exams, and much of what I discuss in class is not carefully laid out in the textbook. You are all upper level undergraduates, so you should be able to handle complex concepts in place of rote memorization. The text is a good place for background information and should be read prior to class, but you cannot rely on it alone. The best, easiest, and really the only approach to doing well in this class includes coming to class, taking notes, and participating in the discussions.

Blackboard: All course announcements, assignments and grades will be posted online using Blackboard. I will also post the upcoming lecture notes on Blackboard before each class. These notes will not be complete, and much of the material discussed in class will not be present in these files – this is not a substitute for attending lecture, reading the book, and taking careful notes. Note that there is a separate Blackboard page for the laboratory component of the course. Updates to this syllabus will be posted; please periodically check Blackboard. If you have not used Blackboard previously, ask your TA or a fellow student to spend a few minutes helping you.

Grades: The lecture grade and the laboratory grade are combined to determine your final grade for the course. The lecture is worth a total of 550 points, the lab is worth 400 points, and participation and attendance is worth 50 points.

The letter grade will correspond, roughly, to a percentage scale with standard lettergrade breakdowns utilized. E.g. 93–100% = A, 90–92.9% = A-, 87–89.9 = B+, 83–86.9 = B, and so on. All of your grades will be posted on BB so you can keep a running tab of your class average.

Lecture Grades will be determined as follows: **Midterm Exams: 150 points each.** There will be two, non-cumulative mid-term exams worth a total of 300 points. **Final Exam: 200 points.** There will be a comprehensive final exam covering the entire course, including material from our class discussions (however, not the primary literature discussions). The final exam will consist of 50% new material and 50% comprehensive material. **Class participation: 50 points.** This will cover all of the discussions during lecture over the course of the semester, as well as attendance and participation in the labs. As I will try to present most of the course material in a discussion format, it is important that all students in the class arrive having read the material in the textbooks and reading assignments, as well as bringing in outside ideas to discuss. **Primary literature discussion presentation: 50 points.** In science, you must be able to read and synthesize papers you find in peer reviewed journals. This is an essential skill that you must master in order to be successful in conducting experiments in general. To that end, you will lead the class in a discussion based on a paper of your choosing (approved by me in advance). The discussion should last 20-30 minutes and cover the basics of the paper you have chosen. You will need to be prepared to lead a round table type discussion on the paper; additional details will be posted on blackboard and discussed in class. **Lab Reports: 50 points each.** There are 4 lab reports for a total of 200 points. **Estuary Report: 100 points.** This report will be based on the data collected during the first field trip and will be a longer format than the other reports. There will be two weeks allowed for the completion of the report. **Lab Final: 100 points.** There will be a comprehensive exam on all of the material covered during the laboratory portion of the class.

There are **NO MAKEUP TESTS OR QUIZZES.** In the case of severe illness, sports competitions or other excused absences, you will be excused and the exam will not

factor into your final grade. You must have a note from your physician, a coach or whoever is appropriate for explaining a legitimate absence. These should be arranged in advance, or (in the case of illness) I must be notified by the time of the exam. If you are not excused by the time of the exam, you will receive a zero.

I do not allow laptops or phones to be used during class. These are at best incredibly distracting, and at worst a very easy way to cheat. You may say you just want to take notes on them, but we both know you won't have your email turned off... You will be asked to leave and will not receive points for the day if you have them on during lecture. Please bring something to write on – a 2-sided, black and white printed copy of the powerpoint slides with lines for notes is recommended, but a simple notebook works just as well.

Honesty and Civility: You must abide by Temple's Code of Conduct (see <http://www.temple.edu/assistance/udc/coc.htm>), which prohibits: 1. Academic dishonesty and impropriety, including plagiarism and academic cheating. 2. Interfering or attempting to interfere with or disrupting the conduct of classes or any other normal or regular activities of the University.”

Do not try to cheat; avoid all appearance of cheating. We have a "zero tolerance" policy. The Temple Honor code, which you will sign before you take all of the exams in the course, provides disciplinary action for cheating which may include expulsion from the University.

The following guidelines will minimize disruption of your fellow students during lectures (after the Chronicle of Higher Education March 27, 1998, p. A12): Please do not disrupt lectures with conversation. Mindless chatter during class is distracting to other students and to the instructor. Please ask questions or make comments if you didn't follow something. It helps the instructor set a pace that is appropriate for students who are listening. Avoid entering lectures late. If you are late, enter as quietly as possible. Assignments or in-class work missed due to tardiness are counted as zeros and cannot be dropped.

Attendance: If you miss a class meeting for any reason, you will be held responsible for all material covered and announcements made in your absence. Attending EVERY class enhances your undergraduate experience and gives you the most value for your tuition dollar.

Disabilities: Any student who needs accommodation because of a disability should contact us privately to discuss the specific situation as soon as possible. The Office of Disability Resources and Services (215-204-1280) in Ritter Annex 100 can coordinate reasonable accommodations for students with documented disabilities. Students who are eligible for extra time on exams need to talk with their TA well in advance of the exam to make arrangements for extended time.

Bio 3244 Schedule – subject to change (please consult Blackboard for updates)

Date	Lecture	Text Pages	Lab Activity
19-May	Introduction to the Course		
20- May	How We Study Marine Biology	p 1-12	Properties of Water
21- May	The Ocean Floor	p 13-18	
22- May	Properties of Seawater	p 18-22	recitation
26- May	Memorial Day - no classes		
27- May	Circulation in the Ocean	p 22-29	Ocean Acidification
28- May	Climate Change and the Oceans	p 29-33	
29- May	Waves and Tides	p 33-39	recitation
02-June	1st Exam		
03- June	Physiology - Temperature	p 69-80	Daphnia
04- June	Physiology - Salinity	p 81-83	
05- June	Physiology - Oxygen & Light	p 83-90	recitation
09- June	Life in a Fluid - Density and Viscosity	p 91-93	
10- June	Life in a Fluid - Water Motion	p 93-101	Population Dynamics
11- June	Ecology - Interspecific Interactions	p 40-48	
12- June	Ecology - Populations	p 48-52	Recitation P.D.
16- June	2nd Exam		
17- June	Ecology - Communities	p 52-62	Stockton College
18- June	Classifying Species and Biogeography	p 62-68	
19- June	Reproduction	p 102-114	Recitation S.C.
23- June	Dispersal and Migration	p 114-139	
24- June			
25- June			
26- June			Lab final
30-June	Final Exam (½ Comprehensive ½ New Material)		