

## SAMPLE LAB SYLLABUS

---

# Introductory Oceanography Lab

## GS 223

---

### Graduate Student Instructors

GSI	Office Hours	Time	Email	Phone
Judy Croody	Thurs	10-12	@umich.edu	123-4567
Neal Bananapeal	Friday	2-4	@umich.edu	123-4567
Mel Pakabel	Monday	3-5	@umich.edu	123-4567

Please come and see us at any of the above times. If you can't make it to office hours, give us a call (before 6 PM) or reach us on E-mail to set up an alternative meeting.

### Laboratory Schedule

All sections meet from 2-4 PM in Room 2516 C.C. Little Bldg. on the following days: Sec. 001 - Tues., Sec. 002 - Wed., and Sec. 003 - Thurs.

Week	Lab	Topic
Sept. 9,10,11	1	Geography and Navigation
16,17,18	2	Plate Tectonics
23,24,25	3	Marine Sediments
Sept. 30 & Oct. 1,2	4	Acoustic Techniques
Oct. 7,8,9	5	Seawater Properties
14,15,16	6	Atmospheric and Oceanic Circulation
21,22,23	7	Waves
28,29,30	8	Chemical Oceanography
Nov. 4,5,6	9	Marine Ecosystems
11,12,13	10	Coastal Processes
18,19,20	11	Carbonate Bomb
25,26,27		Thanksgiving Break!!
Dec. 2,3,4	12	Marine Paleontology

### Course Description

*What we'll be doing...*

Lab meets once a week for two hours. During that time we will try to accomplish five main objectives:

- (1) Review lecture material. If you have any questions about something you heard in lecture, you need something clarified, or you would like us to rehash some particular topic—ASK! What we do in lab is based on what you learn in lecture, so we need to know that everybody is up to speed on the lecture material first. For some of the more difficult lecture topics we will make a concerted effort to go over them a second time in lab.
- (2) Discuss previous labs. We will discuss any major problems we may have noticed in grading your labs, (e.g., a lot of people got the same problem incorrect because some goof made a typo in the handout.) In addition, we would also like to encourage your feedback on the course –

and don't feel restricted to doing it only at this time! We consider student feedback critically important in helping us to continue improving this course, and in focusing on areas of oceanography which are of the most interest to you.

- (3) Apply lecture material. Much of what we do in lab will involve the application of lecture material through problem solving and seminar type discussions. We will also spend some time "gathering" oceanographic data and learning how to interpret it based on your acquired knowledge. (Of course, being in the middle of the continent can make this difficult at times...)
- (4) Provide and apply additional material. This class is designed as a companion course to GS 222, so what we cover in lab is generally based on what is covered in lecture. We will, however, approach topics in a more in-depth manner, which will often require the inclusion of materials not covered in lecture.
- (5) Learn and enjoy oceanography. This is the most important objective. This is a science course taken by both those pursuing degrees in the field of oceanography, and those just trying to fulfill their natural science obligation. We will try to find a happy medium between these two pursuits. Oceanography is a very broad, general, encompassing science that relies heavily upon knowledge gathered from many different fields; hopefully we will be covering topics of interest to everyone. We also hope that you will come away from the labs feeling that you have learned something useful – or at least with the feeling that you'll do better on the lecture exams.

Whenever you have a question please ask it! (...we are also well versed in a variety of subjects besides oceanography.) Learning in science is a very question-oriented process; discoveries and advancements in science are made through the process of asking questions and finding answers.

In introductory courses such as this one, it is also important that you develop a sense of how scientific problems are tackled, i.e., how to think "scientifically." Most of the problems we tackle in this class – and most scientific problems in general – involve the piecing together of different facts into a coherent, believable explanation of some phenomena.

In order to help you develop a knack for this, you will find that we often answer your questions with a question; a technique that is really annoying to some people, but much better for you in the long run. Such "question" responses are designed to help you try to approach the problem from a number of different angles – and will often to prove to you that you really do know the answer! It is very easy to memorize a series of facts, but much more difficult, meaningful, and fun to really learn and apply them.

## **Handouts**

There is no "required" textbook for this course. Instead, over the course of the semester, we will be distributing excerpts from *Oceanography with a Twist* (6th edition, Swim at Night Press) in accordance with the topics being covered. These handouts will be distributed during the lab sessions (one lab session prior to their being covered).

You are expected to read each week's handout prior to attending lab. A sizable portion of your grade depends on in-class participation and performance. You will find it very hard to participate in a discussion of a topic for which you are not fully prepared.

We will also try to indicate optional readings in your lecture text that can help you understand the topics being discussed in lab (and lecture) more thoroughly. And, if you happen to find a particular subject very interesting – or confusing – we will graciously provide assistance or additional references.

## Problem Sets

Each lab session will begin with the distribution of a problem set. Typically these assignments are composed of several "short answer" type questions, a few "long" answer questions, and a tough bonus question. The short answer questions are designed to help reinforce important topics in the course. They also are typical of what you might encounter on lecture exams.

The long answer questions are designed to make use of all the knowledge that you are accumulating in this course – and others. They allow you to apply your knowledge and get something out of it (fun!).

The bonus questions are just that – bonus. They are often difficult to work through, but highly rewarding. Bonus questions are designed to dramatically increase your intelligence and wisdom to heretofore unreachable heights!

All problem sets are due the following lab period and should represent an honest neat effort By honest we mean that you have placed a significant amount of effort – blood, sweat, and tears – into the assignment and are handing in a respectable indicator of your comprehension of the topics discussed (i.e., not that you partied the entire week and couldn't finish). By neat we mean that answers to questions should be legible and that you should show all work – particularly if you want a shot at the partial credit which is distributed rather freely in this course.

When doing the labs we also want you to think independently and do work that is reflective of what you know. That's the only way that we can gauge how well you are understanding the material. In the lab, you will be working in groups of three or four on all of your lab assignments; we encourage this type of interaction because it will help you to get different perspectives on the same question. However, while working collectively you should be thinking independently! This means do not copy your neighbor's answers. (Yes, we can tell and points will be deducted.) Answer the questions in your own words. If you have any questions, we will be more than happy to answer them, either during the labs or during office hours.

Lab assignments should take 1 to 2 hours (each week) to complete and are due at the beginning of the next lab session. If something comes up and you cannot turn an assignment in on time, please contact one of us before the next lab session. Otherwise, late assignments will not be accepted. (Problem sets are each typically worth 30 points, plus several bonus points.)

## Grading

Relax... this course isn't meant to stress you out... sit back and enjoy yourself... after all, the GSIs have to do all the grading! Also, keep in mind that statistics from previous years show students taking the lab do much better in the lecture, on average, than students who missed out on this exciting opportunity!

The majority of your grade will be based on the problem sets (~75%). There are no exams in this course; however, you will find that each lab relies on information from past labs, so that by the end of the semester you'll be working some rather complex problems (and succeeding)! The remainder of your grade will be determined by class participation (~25%), so remember to come to lab prepared!

## Office Hours

Our office hours are listed on the course syllabus. We will always be available to help you at these times – or have made arrangements for someone else to be there to help you. In addition, since these times may not work for everyone, we are happy to arrange appointments over the phone or by e-mail. You are also welcome to just stop by at any time to see us, but we can't always guarantee that we will be available to help you.

In the past students have found office hours very helpful for questions regarding both the lectures and the labs. We strongly suggest that you take advantage of them.

*If you need an accommodation for any sort of disability, please make an appointment to see one of us during our office hours.*