SYLLABUS BIOLOGICAL OCEANOGRAPHY 458/558

Inst.: Alan Shanks
T.A.: Marley Jarvis
Class Schedule: Thursday 8:30 AM to 5 PM
Friday 11:30 to 12:30
Text Books
No Text Required - I will put the following books in the classroom on reserve and give you sections to read. Readings are optional, but encouraged. I will also put out several other texts that you could read instead. The text by Mann and Lazier is particularly appropriate for the graduate students in the class. Mark Denny's book is new and I would like to hear any feed back on it. It looks good to me.

Lalli, C.M. and Parsons, T.R. 1993. Biological Oceanography: An Introduction. Pergamon Press. (new from Amazon this book is $56 and $40 used)
Open University Course Team. 1989. Ocean Circulation. Pergamon Press. (This book is $42 new and $39 used from Amazon)
K. H. Mann, J. R. N. Lazier Dynamics of Marine Ecosystems: Biological-Physical Interactions in the Oceans. (This book is $84 new and $65 used from Amazon)
M. Denny. How the Ocean Works. ($35 new and $25 used from Amazon)

Approximate Class Schedule
Week 1.
25 Sept.: Lec. Abiotic Environment, Introduction to the ecology of phytoplankton and marine microbes Lab. Vertical structure of the water column or playing with water. Trip to the library. Readings for weeks 1 and 2: Biological Oceanography (BO) - Chap 3 sections 1-4, Chap 4 sections 1 to 6.
28 Sept.: Organization of Discussion and prep for cruise
Week 2.
1 Oct. Cruise 7 AM till ? in the PM. (Note: if the weather is bad we will meet for a lecture at the usual time and reschedule the cruise for the next week). Readings for Week 2: BO Chap 5 and 6
5 Oct.: Misc. topic relating to presentations and writing papers.
Week 3
8 Oct. Continuation of Introduction to the ecology of phytoplankton and marine microbes. Lab.: Introduction to zoo and phytoplankton. Reading for week 3 and 4: Chap 3 section 5.1 and 6; Ocean Circulation (OC) Chapters 1-3, Chapter 4 sections 1-3, Chapter 5 section 1
12 Oct: First Student Presentations.
Week 4.
15 Oct : Lec.: Introduction to Zooplankton ecology. Lab.: Start cruise sample analysis.
19 Oct. Review for mid-term.
Week 5
22 Oct Mid-term. Lab. Work up samples from cruise. Reading for week 6 and 7: BO Chapter 3 sections 5.2 to 5.6. OC Chapter 4 section 4.4
26 Oct. Student Presentations. I will likely miss these presentations as I will be at a conference.
Week 6.
29 Oct. Lec. Basin Scale oceanography. Lab. Work up samples from the cruise.
2 Nov. Student Presentations
Week 7.
5 Nov. Lec. Mesoscale oceanography and satellite oceanography. Lab.: Work up samples from the cruise. Reading for week 6 and 7: BO Chapter 3 sections 5.2 to 5.6. OC Chapter 4 section 4.4
9 Nov. <u>NO Class WSN meeting</u>.
Week 8
12 Nov. : Lec Vertical structure. Lab.: Finish working up the data from cruise. Readings for Week 10. OC Chapter 5 sections 5.3 and 5.4, Chapter 6 section 3.1.

16 Nov. Student Presentations.
Week 9.
19 Nov. TBA (depends on whether I have kept to schedule or not). Lab. Groups present results from the cruise data work up.
23 Nov. Thanksgiving Holiday!
Week 10.
26 Nov. Lec. TBA (depends on whether I have kept to schedule or not). Lab.: Satellite oceanography on the web.
30 Nov. Review for final.
Week 11
3 Dec. Cumulative Final Time to be announced.
Lab reports due by 4 PM on - What day would be best for you?

Determination of Grade

Half of your grade will be determined by the mid-term and the final. NOTE: THE FINAL IS CUMULATIVE. Old exams will be on reserve in the classroom. The remaining half of your grade will be from the lab write-up and presentations.

Lab Write Ups and Presentations

Lab write-ups: There will be one day-long class cruise. The results from the cruise will be written up as a lab report. The report will take the form of scientific paper, and will count for 1/4 of your grade. The format for this report will be discussed later in the class.
Short Presentations: Rather than having a traditional discussion section I am going to have you give two (2) 10 minute presentations on topics related to biological oceanography. One talk can be on any biological oceanographic topic of your choosing. For the second talk I would like you all to focus on the same general topic. In past classes we have had papers on global warming, over fishing, and the oceanography of unique areas of the world. So what should we do?

Next I would like you to write short ($\leq$ 3 page, double spaced, 1 inch margins, 12 pt font) papers based on your talks. I will explain what I want in detail on a Friday. The presentation and short papers will be graded separately and the combined grade on your presentations and short papers will make up the last 1/4 of your grade.