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.

Press. (new from Amazon this book is $56 and $40 used)
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.
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.
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. NO Class WSN meeting.
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 (≤ 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.