

SYLLABUS BIOLOGICAL OCEANOGRAPHY 458/558

Inst.: Alan Shanks

T.A.: TBA

Class Schedule: Wed.. 8:30 AM to 5 PM

Friday TBA

Text Books

No Text Required – I will put the following books in the classroom on reserve and give you sections to read. Reading is 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.

Lalli, C.M. and Parsons, T.R. 1993. Biological Oceanography: An Introduction. Pergamon Press.

Open University Course Team. 1989. Ocean Circulation. Pergamon Press.

Approximate Class Schedule

Week 1.

- **Lec.** Abiotic Environment, Introduction to the ecology of phytoplankton and marine microbes **Lab.** Introduction to zooplankton and phytoplankton. Short boat trip to sample plankton. Readings for weeks 1 and 2: Biological Oceanography (BO) - Chap 3 sections 1-4, Chap 4 sections 1 to 6.
- 1 Oct.: Organization of Discussion Section and cruise preparation.

Week 2.

- Cruise 7 AM till ? in the PM. (Note: if the weather is bad we will meet for a lecture). We will break the class into two groups. One will leave at 7 AM and the 2nd will leave probably sometime either late in the morning or early afternoon. I will phone from the boat to arrange when you should meet the boat. Readings for Week 3: in BO Chap 5 and 6
- 8 Nov. : Misc. topic relating to presentations and writing papers.

Week 3.

- **Lec.** Continuation of Introduction to the ecology of phytoplankton and marine microbes. **Lab.:** Work up samples from cruise. 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
- 15 Oct: First Student Presentations.

Week 4.

- **Lec.:** Introduction to Zooplankton ecology. **Lab.:** Work up samples from cruise.
- 22 Oct. Review for mid-term.

Week 5

- **Mid-term** 8:30 AM - 12:00. **Lab.** Complete analysis of 1st Cruise. Reading for week 6 and 7: BO Chapter 3 sections 5.2 to 5.6. OC Chapter 4 section 4.4
- 29 Oct. Student Presentations

Week 6.

Cruise weather permitting. Same organization as before. First group meets the boat at 7 AM and the second sometime in the late morning or early afternoon.

- 5 Nov . Student Presentations.

Week 7.

Lec. Basin scale features. **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

- Student Presentations.

Week 8

Lec Mesoscale features. **Lab.:** Work up samples from cruise. Readings for Week 10. OC Chapter 5 sections 5.3 and 5.4, Chapter 6 section 3.1.

- Student Presentations.

Week 9.

- **Lec.** Vertical Structure. **Lab.:** Try to complete analysis of 2nd cruise samples.
- Student Presentations

Week 10.

- **Lec.** El Niño. The deep water currents and CO₂. **Lab.:** Work up samples from cruise if any are left.

Review for final.

Week 11

- 6 Dec. **Cumulative Final** Time to be announced.
Lab reports due by TBA

Determination of Grade

Half of your grade will be determined by the mid-term and the final. NOTE THAT 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 two class cruises. The results from these cruises 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** 8-minute presentations on a research paper(s) on a topic related to global fishing pressure (I will give you a list of topics from which to choose).

No later than 1 week after your presentation (except for the first group of presenters - those who present on 15 Oct - they will have 2 weeks) you will hand in a short (2 to 3 pages) paper in which you briefly describe the paper(s) you read, and discuss where you think the research should go in the future. If possible, discuss how this new research might be carried out. 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.