Biological Oceanography

ESS 151/251 EARTHSYS 151/251

Lecturer: Matthew Mills, E-mail: mmmills@stanford.edu, Phone: x60688

TA: Ginny Selz, E-mail: vselz@stanford.edu, Phone: x36658

Website: ocean.stanford.edu/courses/ESS151

Book: Biological Oceanography, 2nd edition, by Charles B. Miller and Patricia A. Wheeler

April 4 Introduction

April 6 Ch 1: Ocean ecology: some fundamental aspects

April 6 Activity 1 – Working with oceanographic data

April 11 Ch. 2: The phycology of phytoplankton

**April 13 Background on Monterey Bay**

April 13 Activity 2 – Monterey Bay Field trip preparation

April 18 Ch. 3: Habitat determinants of primary production in the sea Part I

April 20 Activity 2.1 – Monterey Bay Field trip

April 25 Ch. 3: Habitat determinants of primary production in the sea Part II

April 27 Ch. 5: A sea of microbes: archaea, bacteria, protists, and viruses in marine pelagial

April 27 Activity 2.2 – Monterey Bay Field trip – sample analysis

**May 2 Ch. 9: Pelagic food webs**

**May 4 Extra readings: Biogeochemically important organisms (marine microbes)**

**May 4 Activity 2.3 – Monterey Bay Field trip – data analysis presentations**

**May 9 Ch. 10: Biogeography of pelagic habitats**

**May 11 Ch. 11: Biome and province analysis of the oceans**

**May 11 Activity 3.1 - Estimating marine primary production**

May 16 Guest Lecturer - Irina Shilova- Molecular Oceanography

May 18 Ch. 6: The zoology of zooplankton

May 18 Activity 3.2 - Estimating marine primary production

May 23 Ch. 13&15: The fauna of deep see sediments & Submarine hydrothermal vents

May 25 Ch. 12: Adaptive complexes of meso- and bathypelagic organisms

May 25 Activity 3.3 – Estimating marine primary production presentations

Activity 4 - Ocean iron fertilization

May 30 Ch. 14: Some benthic community ecology (p 335-350 only)

June 1 Ch. 16: Ocean ecology and global climate change

June 1 Activity 4 – Ocean iron fertilization

June 6 Activity 4 - Ocean iron fertilization Presentations

Grading

Activity 1 5%

Activity 2, 3, 4 20%

Reading responses 15%

Final 20%