

## EPS/IB C82 OCEANS SYLLABUS F2019

**Course Description:** This course offers multidisciplinary approach to begin answering the question "Why are oceans important to us?" Upon a physical, chemical, and geologic base, we introduce the alien world of sea life, the importance of the ocean to the global carbon cycle, and the principles of ecology with a focus on the important concept of energy flow through food webs. Lectures expand beyond science to include current topics as diverse as music, movies, mythology, biomechanics, policy, and trade. Qualifies for L&S Physical and Biological Science Breadth. Required for EPS Marine Science major.

Go to Page 3 to view the schedule of lectures. This year, 2 lectures had to be cancelled due to PG&E shutdown.

*Note: Materials we present in lectures and discussion sections will guide your study for exams. Questions on exams may not be based on the textbook; pay attention to all lectures (including guest lectures).*

Grading: (Note: we will not curve grades for this course).

A to D with +/- and F; A+ reserved for truly exceptional performance.  
for P/NP. To get a P, you must score 'C-' or better. E.g. 70%

(Note: we will not curve grades for this course).

### MARKS Distribution:

**Clicker quiz\*\*\*\*** 10% **in class**  
(you must have an clicker, you are responsible for it being registered and working). **You can miss up to 4 lectures without penalty.**

**Discussion Section** 20%\* ++ including **6 assignments.**

\* assignments 12% / mandatory attendance 8%  
(you can miss upto 2 discussion sections without attendance penalty)  
++ (you must attend discussion section in order to pass this course).  
*SEE DISCUSSION SECTION SYLLABUS HANDOUT for detail*

**Midterm 1** (75 minutes) 10% **BY SECTION, 7:00 - 8:30 PM Oct 2 2019**

**Midterm 2** (75 minutes) 15% **Wheeler 150, 7:00 - 8:30 PM Oct 30 2019**

**Final Exam** (2hrs 30 min) 30% Pimentel 1 **8:00 - 11:00 AM Dec 16 2019**  
(SECTIONS 101&108 - Meaghan)  
(SECTIONS 102&104 - Nathaniel)  
(SECTIONS 105&106 - Jersey)  
Stanley 105 **8:00 - 11:00 AM Dec 16 2019**

(SECTIONS 103, 109)  
(SECTIONS 107, 110 - Christina)  
**DSP: Wurster 102 8:00 - various Dec 16 2019**

**Creative & Field Assts.      15%      Fun stuff for you to do related to course content**

Extra point opportunities: 5-10% bonus questions on exams, great C&FT work.

NOTE this course qualifies for both Biological and Physical Science Breath.

There will be quantitative assignments and questions on exams.

*\*\*\* vote with your ICLICKER only. to vote for others using their ICLICKER is cheating.*

We have provided Page references for Garrison's 7th 8th and 9th editions.

Please read the readings we provide BEFORE class.

### **Your Responsibilities:**

Take exams at scheduled date and time.

two allowable cases for exception:

(1a) a major medical emergency or (1b) if you are sick.

or (2) you are on official university business.

Written documentation is desirable for (1a) and required for (2).

*Always Communicate in advance: to Professor Bishop and your GSI.*

### **Academic integrity:**

Any work submitted should be your own individual thoughts, and should not have been submitted for credit in another course.

- YES, DO study together. • YOUR THINKING and ANSWERS MUST BE YOURS and IN YOUR OWN WORDS.

*This course has zero tolerance for dishonesty.*

All students contacted concerning dishonesty incidents will have a 7 day period (after email notification to their berkeley.edu email address) for internal resolution of such cases.

*All dishonesty incidents settled internally will be registered with student judicial affairs.*

*All dishonesty incidents not settled internally will be referred to student judicial affairs.*

# **Lecture Series 1: Planet Earth; Geology and Navigation**

Lecture 1: Course Introduction (W 8/28)

Assignment 1- Academic Honesty Statement

Lecture 2: Waves Deep Sea to Shore (F 08/30)

Lecture 3: Basic Earth History (W 09/04)

Lecture 4: Plate Tectonics (F 9/6)

Assignment 2 - Explore Planet Earth

Lecture 5, Poetry of the Plates, Tess Taylor (M 9/09)

Lecture 6: Plates .... Seafloor Features (W 9/11)

Lecture 7: Tsunamis and Intro to Tides (F 9/13)

Lecture 8: Tides ... Early Exploration (M 9/16)

Lecture 9: Early Exploration & Navigation; Quantitative Essential Tools (W 9/18)

Assignment 3 - Exploration, Navigation, Water

Lecture 10 (F 09/20) (TEACH IN) Global Warming / Climate Change / Climate Crisis: What Science Tells us about what's in store for the Oceans and Planet

# **Lecture Series 2: Water in the Ocean and Atmosphere**

Lecture 11: Water Cycle (M 9/23)

Lecture 12: Introduction to Water Properties/HFS (W 9/25)

Lecture 13: The Earth's Radiation Budget / Atmosphere (F 9/27)

GSI Mid Term Q&A (M 09/30) Pimentel 1

Lecture 14: Coriolis Effect (W 10/02); Putting the Atmosphere in Motion

Midterm 1 Oct 2. 7:00-8:30 PM

Lecture 15: Connecting Atmosphere and the Ocean (F 10/04)

Lecture 16: Surface Currents (M 10/07)

Lecture 17 POSTPONED DUE TO CAMPUS SHUTDOWN : Tropical Cyclones and the Ocean: (W 10/9) Prof. Bill Boos (EPS)

Lecture 18: Thermohaline Circulation (M 10/14)

Lecture 19: El Niño / Southern Oscillation (F 10/18) Prof. John Chiang (Geography)

CONFIRMED

## **Lecture Series 3: Biology of the Underwater World**

- Lecture 20: LIFE! Basic Biology (W 10/16)
- Lecture 21: Energy Flow and Photosynthesis (M 10/21)
- Lecture 22: Primary Producers and Classification of Life (W 10/23)
- Lecture 23: Kelp holdfast critters (F 10/25) Dr. Tim Herrlinger (IB)
- Lecture 24: Communities (W10/30)

Midterm 2 Oct 30. 7:00-8:30 PM

- Lecture 25: Ocean Structure & Biological Productivity intro BioPump (F 11/01)
- Lecture 26: Deep Sea Life (M 11/04)
- Lecture 27: Ocean Chemistry / Ocean Biological Carbon Pump (W 11/06)
- Lecture 28: Heterotrophs (animals and other consumers) (F 11/08) Jessica Kendall-Bar (UCSC)

## **Lecture Series 4: Ocean Chemistry; Understanding Carbon**

- Lecture 30: Ocean Chem... / Understanding Sediments (W11/13)
- Lecture 31: Seds II, Carbon Chemistry I (F 11/15)
- Lecture 32: Carbon Chemistry II / demonstration (M 11/18)
- Lecture 33: Sediments/Carbon wrap up (W 11/20)

Assignment 5 - Biology

## **Lecture Series 5: Humans; The Ocean and Us**

- Lecture 34 "The Shape of the Shell" Prof. Cindy Cox (Music) (F 11/22) (CONFIRMED)

Assignment 6 - Ocean Chemistry

- Lecture 35: Ocean Law and the Tragedy of the Commons (M 11/25) Prof. Dan Farber: (CONFIRMED)
- Lecture 36: Fisheries / 3rd world environmental Justice (M 12/02) Sylvia Targ (CONFIRMED) .
- Lecture 37: Other Threats (W 12/04)
- Lecture 38, Wrap Up; PLUS creative works (F 12/06)

RRR Week: Bishop's Carbon - Review (Wed Dec 11 2019)