

## **GEOL 18000: INTRODUCTION TO OCEANOGRAPHY**

**HUNTER COLLEGE - Spring 2023**

**Lecture: Tuesday/Friday 1:00 – 2:15PM**

**Room: Hunter North C002**

**Instructor: John Zayac**

**Email:** john.zayac@hunter.cuny.edu

**Office:** Hunter North 1032, Department of Geography and Environmental Science

**Office Hours:** T/F 2:30 – 4:00PM, *or by appointment*

*Note: I am at Hunter College on T/F this semester. Zoom meetings can also be scheduled.*

### **COURSE DESCRIPTION**

This course will offer an introduction to the subject of oceanography. We will discuss the physical, chemical, biological, and geological aspects of the oceans; learn about the structure and motion of the atmosphere and how they influence ocean circulation; and we will learn about waves, tides, and tsunamis. The ocean, comprising 71% of the Earth's surface, is a crucial component of the Earth's climate system and its dynamics determine the cycling of carbon and the production of oxygen throughout the planet. The oceans' extreme environments host unusual forms of life, which are sensitive to anthropogenic influences. It is an important source of energy and economically valuable materials. Accordingly, the ocean has a profound influence on humans and civilization. In addition to providing a good introduction to aspects of the scientific world, it is a foundational course for Environmental Studies, Geography and BA/MA Earth Science Education majors.

### **INFORMED REGISTRATION STATEMENT**

This is a **3-hr, 3.0-credit**, science-based course, which meets the Scientific World requirement of the Hunter Common Core and the GER 2E General Education Requirement.

### **COURSE GOALS AND LEARNING OUTCOMES**

The overall goal of this course is to help you, as students, learn to articulate and evaluate the evidence that forms the foundation of scientific inquiry and knowledge formation.

#### Specific Learning Outcomes:

By the end of the semester, students will be expected to:

1. Identify and apply the fundamental concepts of physics, chemistry, geology, biology, mathematics to the study of modern oceanography.
2. Gather, interpret, and assess information from a variety of sources and points of view.
3. Evaluate evidence and arguments critically and analytically.
4. Demonstrate knowledge of the oceans' role within the broader Earth system.

### **CLASS READINGS**

Our main textbook for this class will be the freely available *Introduction to Oceanography* by Professor Paul Webb at Roger Williams University. The book in its entirety can be accessed and downloaded at this link: <https://www.oercommons.org/courses/introduction-to-oceanography/view>. Supplemental readings will be periodically uploaded to Blackboard.

## GRADING

Course grades will be calculated based on the following proportions:

*25% Weekly Blackboard Assignments*

*15% Case Studies (7.5% for each).*

*15% Midterm 1*

*15% Midterm 2*

*20% Final Exam*

Letter grades at the end of the term will be assigned according to the Hunter College grading policy which can be found at this link: <https://hunter-undergraduate.catalog.cuny.edu/policies-and-requirements/academic-requirements/grading-policies/grading-definition>

## WEEKLY BLACKBOARD ASSIGNMENTS

On Friday of each week a brief assignment covering the material from lecture will open on blackboard. The purpose of these assignments will be to summarize some of the important topics we've covered and to help you prepare for the exams. *These assignments will be denoted as quizzes/tests in Blackboard, but they are not. You may use your notes and readings to complete them.* These assignments will be **due by the start of class the following Tuesday.**

## EXAMINATIONS

There will be two midterms and a final exam in this course. **Midterm 1 (Tuesday, March 7<sup>th</sup>)** will cover material up through week 6. **Midterm 2 (Tuesday, April 18<sup>th</sup>)** will cover material from weeks 7 - 12. **The final exam (TBD by the Registrar)** will be cumulative, though more weight being given to the material in weeks 13 – 16.

The midterm exams will be given during the 75-minute class period on the dates above. The final exam will be two hours in length during the Hunter College scheduled period. The exams will take place through Blackboard, so you may take them from any location that you find comfortable and have a strong internet connection. More details will be provided in class.

## CASE STUDIES

Over the course of the semester, you will be asked to complete two case studies in which you will apply concepts from lecture to explore current scientific topics and use openly available data to draw conclusions.

**CS1: The Bathymetry of the Atlantic Ocean (due Friday, February 24<sup>th</sup>).**

**CS2: Sea Level Change (due Friday, May 5<sup>th</sup>)**

Instructions for each case study will be posted. Submission of your completed work will be through Blackboard and will be expected by sunset on the due date.

## CR/NCR POLICY

The CR/NCR option will be honored only if the conditions stated on the CR/NCR form are satisfied: all course work has been completed and you earned grades such that you accumulated at least 50 points total in the course. CR/NCR must be filled correctly and submitted BEFORE the final examination begins. Students on probation are ineligible. For more information about Hunter College's policy on CR/NCR go to: <http://www.hunter.cuny.edu/advising/howto/credit-no-credit-cr-nc>.

## **GENDER IDENTITY AND PREFERRED PRONOUNS**

All people have the right to be addressed and referred to in accordance with their personal identity. In this class, we will have the chance to indicate the name that we prefer to be called and, if we choose, to identify pronouns with which we would like to be addressed. I will do my best to address and refer to all students accordingly and support classmates in doing so as well. If there is a name or pronoun(s) you prefer to be addressed by, please approach me in class, send me an email, or mention it to me privately during office hours and I will add this information to my course roster.

## **COVID (*and other illness*) POLICY**

As we are beginning our third academic year of the pandemic it still imperative that we implement all the ways we can make our time together **safe** and **inclusive** for all. If you are experiencing symptoms of any communicable disease, or have tested positive after encountering an ill person, please do not attend class and email me to make arrangements to keep you caught up in class.

## **HUNTER COLLEGE POLICY ON ACADEMIC INTEGRITY**

Hunter College regards acts of academic dishonesty (e.g., plagiarism, cheating on examinations, obtaining unfair advantage, and falsification of records and official documents) as serious offenses against the values of intellectual honesty. The College is committed to enforcing CUNY Policy on Academic Integrity and will pursue cases of academic dishonesty according to the Hunter College Academic Integrity Procedures.

## **SYLLABUS CHANGE POLICY**

Except for changes that substantially affect implementation of the evaluation (grading) statement, this syllabus is a guide for the course and is subject to change with advance notice. Updates will be announced in lecture and posted regularly on Blackboard.

## **ADA POLICY**

In compliance with the American Disability Act of 1990 (ADA) and with Section 504 of the Rehabilitation Act of 1973, Hunter College is committed to ensuring educational parity and accommodations for all students with documented disabilities and/or medical conditions. It is recommended that all students with documented disabilities (Emotional, Medical, Physical, and/or Learning) consult the Office of AccessABILITY, located in Room E1214B, to secure necessary academic accommodations. For further information and assistance, please call: (212) 772- 4857 or (212) 650-3230.

## **HUNTER COLLEGE POLICY ON SEXUAL MISCONDUCT**

In compliance with the CUNY Policy on Sexual Misconduct, Hunter College affirms the prohibition of any sexual misconduct, which includes sexual violence, sexual harassment, and gender-biased harassment retaliation against student, employees, or visitors, as well as certain intimate relationship. Students who have experienced any form of sexual violence on or off campus (including CUNY-sponsored trips and events) are entitled to the rights outlined in the Bill of Rights for Hunter College.

- A. **Sexual violence:** students are strongly encouraged to immediately report the incident by calling 911, contacting NYPD Special Victims Division Hotline (646-610-7272) or their local police precinct, or contacting the College's Public Safety Office (212-772-4444)
- B. **All other forms of sexual misconduct:** Students are strongly encouraged to contact the College's Title IX Campus Coordinator, Dean Jean Rose ([jtrose@hunter.cuny.edu](mailto:jtrose@hunter.cuny.edu) or 212-650-3262) or Colleen Barry ([colleen.barry@hunter.cuny.edu](mailto:colleen.barry@hunter.cuny.edu) or 212-772-4534) and seek complementary services through the Counseling and Wellness services Office, Hunter East 1123.

CUNY Policy on Sexual Misconduct Link:

<http://www.cuny.edu/about/administration/offices/la/policy-on-sexual-misconduct-12-1-14-with-link.pdf>

### TENTATIVE CLASS SCHEDULE\*

Week	Date	Tuesday Lecture	Friday Lecture
1	<b>24-Jan</b>		Introduction to the Oceans
2	<b>31-Jan</b>	Origin of Earth and Geological Time	The Solid Earth
3	<b>07-Feb</b>	Plate Tectonics	The Ocean Basins
4	<b>14-Feb</b>	Chemical Oceanography - Water and Salinity	Chemical Oceanography - Dissolved gasses, pH, Nutrients
5	<b>21-Feb</b>	Physical Oceanography - Pressure, Temperature, Density	Physical Oceanography - Sound, Light...
6	<b>28-Feb</b>	Primary Productivity and Energy Transfer	The Benthos and Hydrothermal Vents
7	<b>07-Mar</b>	<b>MIDTERM EXAM 1</b>	Marine Ecosystems
8	<b>14-Mar</b>	The Atmosphere and Coriolis Effect	Ocean Circulation - Surface
9	<b>21-Mar</b>	Ocean Circulation - Deep	Tides
10	<b>28-Mar</b>	Waves	Ocean Sediments
11	<b>04-Apr</b>	Beaches	Spring Break
12	<b>11-Apr</b>	Spring Break	Longshore Processes
13	<b>18-Apr</b>	<b>MIDTERM EXAM 2</b>	Sea Ice
14	<b>25-Apr</b>	Ocean-Atmosphere Interactions and the Greenhouse Effect	Climate Change
15	<b>02-May</b>	Paleoclimate	Oceans and Mass Extinctions
16	<b>09-May</b>	The Future of the Ocean	
17	<b>16-May</b>	<i>Final Review</i>	

\*Subject to change as needed. All updates will be posted on Blackboard.