

INTRODUCTION TO OCEANOGRAPHY
GEOL 18000
SUMMER SESSION 6W1
ONLINE COURSE
MONDAY THROUGH THURSDAY
SUMMER 2021
5/27/2021 - 7/12/2021
PRELIMINARY SYLLABUS

CONTACT INFORMATION

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Office Hours: online only, by appointment (Skype, Google Hangouts or email)

COURSE ID: 027901

SESSION: 6W1

***Note:** The best way to contact me is through your **Hunter College @myhunter** email – (1) You must include the **GEOL 18000** in your subject line (2) sign your full name as it appears in CUNYfirst, and (3) send all email from your @myhunter email address. I do not respond to personal email addresses. I try to answer all emails within 24 hours during the week and 48 hours on the weekend.

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.

COURSE STRUCTURE

This is a fully online course. All materials will be available on the Hunter College Blackboard site. The Blackboard site will have a "Class Sessions" page. For each scheduled class meeting date (below) there will be folder labelled by date containing: podcast(s), recommended reading, additional articles, an assignment and/or other materials. Students are expected to complete all the work in each folder on a daily basis. Students should expect to spend 3-6 hours 4 days per week reading, studying and completing assignments for the course. All assignments and assessments will be due at the end of each week (Sunday at 11:59 PM). In addition, there will be a class discussion board where students can discuss the course material, ask and answer questions and discuss the case study material. I will be available online during the scheduled virtual meeting days and will respond to Discussion Board posts, email and have virtual office hours by appointment. There will be synchronous, optional class meeting per week via BB Collaborate or Zoom to discuss readings and any questions. Attendance is highly encouraged but optional as I recognize that students have a variety of other responsibilities and constraints. All live meetings will be recorded and made available on the course BB site.

This course will cover four big ideas:

- Marine Geology and its relationship to Plate Tectonic Theory
- Ocean chemistry and physics, and their relationship to climate
- Human impacts on the ocean
- The oceans role in sustaining a habitable planet

The course has been divided into four units, each with a corresponding “**BIG IDEA**” and **INTEGRATING CASE STUDY** designed to achieve the expected **LEARNING OUTCOMES** listed below.

- Unit 1-Marine Geology
- Unit 2-Ocean Chemistry
- Unit 3-Ocean Dynamics
- Unit 4-The Ocean Environment

EXPECTED LEARNING OUTCOMES

1. Identify fundamental concepts in physics, chemistry, geology, biology, mathematics and engineering technologies as they apply to the study of modern oceanography
2. Describe the common tools used in oceanography
3. Demonstrate knowledge of the ocean’s role within the broader Earth System
4. Produce well-reasoned written arguments using evidence to support conclusions.

CASE STUDIES

To support Expected Learning Outcomes:

- In addition to traditional instruction, each **CASE STUDY** will require students to gather data from at least one marine database (NOAA, USGS, NASA), relevant journal articles and white papers. Through class discussions students will learn to interpret the collected data as they pertain to the specific process(es) or problem(s) presented and will be guided to assess the quality of the data being used.
- For each **CASE STUDY** a series of analytical questions (4-6) will be formulated, designed to highlight different perspectives or points of view that may be derived from the data. Students then will be required to provide a substantial answer to each question evaluating these perspectives.
- There will be one required **CASE STUDY** for the course.

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.

REQUIRED TEXT BOOKS:

This text is required. All assignments will be completed through the companion website.

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<https://www.pearson.com/store/p/essentials-of-oceanography/P100001032916/9780135586723>

GRADING METHOD AND SCALE

Grades will be based on class participation, homework assignments, two mid-term exams and one final exam. A detailed description of the Hunter College Grading System may be found at <http://catalog.hunter.cuny.edu/content.php?catoid=23%navoid=3149>. An itemized breakdown of the final grading rubric is provided below:

Case Study	10 %
Assignments	50 %
Weekly Assessment	40%
Discussion Boards and other activities	up to 6 % extra credit

ASSIGNMENTS

Most assignments will be completed using Mastering Oceanography, an online platform associated with the required textbook. Additional assignments will be assigned and uploaded on the course BB site.

WEEKLY ASSESSMENTS (TESTS)

Weekly learning assessments will be online. Because this is an online course, you will be able to use your textbook and other resources during the assessment. Hence, these assessments will both help you consolidate your knowledge and demonstrate your learning. These assessments will be timed and given via BB.

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 accumulate at least 50 points total in the course. Students on probation are ineligible.

ATTENDANCE

This is a fully online course. As such, we will not be meeting in the classroom. The class is designed for asynchronous learning, i.e you can log in any time during the day and access the class materials. Because this class will move at a fast pace, it is important that you check in every day. You may post questions and comments on the class Discussion Board. I will monitor this board and respond to questions for the benefit of the entire class. Students are encouraged to interact and answer questions as well. Extra credit will be given (see above).

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 posted regularly on Blackboard.

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.

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 or 212-650-3262) or

Colleen Barry (colleen.barr7@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 Schedule: The professor reserves the right to change the schedule on an as needed basis.

Date	Unit	Sub-topic	Trujillo Text Chapter	Notes:
May 27	Introduction	Overview	1	Padlet Assignment
June 1	Marine Geology	Plate tectonics	2	Assignment 1
June 2	Marine Geology	The ocean floor	2	Assignment 2
June 3	Marine Geology	Marine provinces	3	Assignment 3 Assessment 1
June 7	Ocean Chemistry	Marine Sediments	4	Assignment 4
June 8	Ocean Chemistry	Water and seawater	5	Assignment 5
June 9	Ocean Chemistry	Air-sea interaction	6	Assignment 6
June 10	Ocean Chemistry	Air-sea interaction	6	Assignment 7 Assessment 2
June 14	Ocean Dynamics	Surface ocean	7	Assignment 8

June 15	Ocean Dynamics	Deep ocean	7	Assignment 9
June 16	Ocean Dynamics	Waves and water dynamics	8	Assignment 10
June 17	Ocean Dynamics	Tides	9	Assignment 11
June 21	Ocean Dynamics	Tides		Assessment 3
June 22	Ocean Biology	Biological Productivity & energy transfer	13	Assignment 12
June 23	Ocean Biology	Biological Productivity & energy transfer	13	Assignment 13
June 24	Oceans and Climate	The Oceans and climate change	16	Assignment 14
	Oceans and Climate	The Oceans and climate change	16	Assignment 15 Assessment 4
June 28	Ocean Environment	Marine pollution	11	Assignment 17
June 29	Ocean Environment	Marine pollution	11	Assignment 18
June 30	Ocean Environment	Marine Life and the Marine Environment	12	Assignment 19
July 1	Marine Life	Marine Life and the Marine Environment	13	Assessment 5

July 5	Marine Life	Animals of the Pelagic Environment	14	
July 6	Marine Life	Animals of the Benthic Environment	15	
July 7	Marine Life	Animals of the Benthic Environment	15	Assignment 20
July 8	Course Wrap up			
July 12	LAST DAY			Final Exam