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EAS 250: Oceanography

CUNY School of Professional Studies

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CUNY School of Professional Studies

EAS 250: Oceanography

General Education

Required Core C Life and Physical Sciences No pre- or co-requisites

COURSE DESCRIPTION

Oceanography is an interdisciplinary field studying the processes and interrelationships of geology, chemistry, geography, geophysics, meteorology, and biology. This course focuses on how scientific processes and scientific understanding are applied to questions such as: Which factors control life in the ocean? How do we know what we know about the ocean? What's at the bottom of the ocean? How does the water in the ocean move? How are human activities and climate change altering the ocean? Oceanographic data is used to understand the ocean and its interactions with the rest of the planet.

This course is based in part upon materials developed by the American Museum of Natural History and is used by the School of Professional Studies for this course with permission.

REQUIRED CORE LIFE AND PHYSICAL SCIENCES LEARNING OUTCOMES

Students will:

1. Identify and apply the fundamental concepts and methods of a life or physical science.
2. Apply the scientific method to explore natural phenomena, including hypothesis development, observation, experimentation, measurement, data analysis, and data presentation.
3. Use the tools of a scientific discipline to carry out collaborative laboratory investigations.
4. Gather, analyze, and interpret data and present it in an effective written laboratory or fieldwork report.
5. Identify and apply research ethics and unbiased assessment in gathering and reporting scientific data.

DISCIPLINE-SPECIFIC LEARNING OUTCOMES

Students will:

1. Explain interrelationships of oceans to other earth systems
2. Explain formation of seafloor features/landforms, and their context in earth history
3. Describe the relationship between the ocean and climate change.
4. Understand the importance of the cryosphere and distinguish land ice from sea ice
5. Demonstrate an understanding of the role of technology in oceanographic research, both in observation and modeling

6. Analyze and evaluate scientific data to create a conclusion about oceanographic processes
7. Evaluate the reliability and usefulness of scientific information; integrate multiple forms of information
8. Assemble, interpret, and contextualize graphic data
9. Express an understanding of oceanography as a socially relevant enterprise with many applications to human problems and resource needs.

GRADING

ASSIGNMENTS	Percent
Lab Assignments (4 @ 10% each)	40%
Ocean Storytelling Assignments (4 @ 5% each)	20%
Discussions (6 @ 2% each)	12%
Summaries (8 @ 2% each)	16%
Quizzes (7 @ 2% each, lowest dropped)	12%
Total	100%

A	93-100 percent
A-	90-92.9
B+	87-89.9
B	83-86.9
B-	80-82.9
C+	77-79.9
C	73-76.9
C-	70-72.9
D	60-69.9
F	Below 60

Full grading rubrics for each type of assignment are available in the “course information” folder on Blackboard.

ACTIVITIES

Labs (40%)

There will be four labs this semester, two of which will be done in small groups. Lab activities will include virtual explorations, data analysis, and working with computer simulations. *Addresses all*

Required Core LOs.

Ocean Storytelling (20%)

We will be using VoiceThread, a collaborative media website, to produce evidence-based narratives about various aspects of oceanography. *Addresses Required Core LOs 1,2,5*

Discussions (12%)

Certain topics will be explored through the use of a discussion board. Students will be graded on the quality of their own responses to the initial discussion prompt and to their responses to their classmates' posts. *Addresses Required Core LOs 1,2,5*

Written Summaries (16%)

We will use short written documents and figures from the reading to summarize and review course material. There will be a final summary assignment in VoiceThread form. *Addresses Required Core LOs 1,5*

Quizzes (12%)

A multiple-choice quiz will be given every other week. The lowest grade will be dropped. *Addresses Required Core LOs 1*

ACCESSIBILITY AND ACCOMMODATIONS

The CUNY School of Professional Studies is firmly committed to making higher education accessible to students with disabilities by removing architectural barriers and providing programs and support services necessary for them to benefit from the instruction and resources of the University. Early planning is essential for many of the resources and accommodations provided. For more information, please see: [Disability Services on the CUNY SPS Website](#).

ONLINE ETIQUETTE AND ANTI-HARASSMENT POLICY

The University strictly prohibits the use of University online resources or facilities, including Blackboard, for the purpose of harassment of any individual or for the posting of any material that is scandalous, libelous, offensive or otherwise against the University's policies. Please see: "[Netiquette in an Online Academic Setting: A Guide for CUNY School of Professional Studies Students.](#)"

ACADEMIC INTEGRITY

Academic dishonesty is unacceptable and will not be tolerated. Cheating, forgery, plagiarism and collusion in dishonest acts undermine the educational mission of the City University of New York and the students' personal and intellectual growth. Please see: [Academic Integrity on the CUNY SPS Website](#).

TUTORING

CUNY SPS offers all students a variety of tutoring services, free of charge, both online and in person. Please see: Tutoring.

HELP DESK

For assistance with access to CUNY SPS and CUNY computing resources, please see the [Help Desk](#) website for contact details and semester hours.

STUDENT SUPPORT SERVICES

If you need any additional help, please visit [Student Support Services](#)

Course Schedule

Week and Dates	Topics	Assignments and due dates. All assignments and discussions are due by the end of the week for which they are assigned unless otherwise noted
Week 1	Introduction to the Ocean	Discussion Board: Introduce yourself and respond to the prompt on this week's discussion board (due by Wednesday) Knowledge Check: Summary #1 based on a figure from the reading
Week 2	Life in the Ocean	Quiz #1 Ocean Storytelling Activity 1: Life in the Ocean – how early ocean organisms developed the atmosphere we have today
Week 3	Looking at the Ocean Floor	Lab #1: Find a Vent due Sunday Knowledge Check: Summary #2 – discussing deep sea vents
Week 4	Living on the Ocean Floor	Quiz #2 Discussion Board: how plate tectonics has shaped the Earth's spheres – geosphere, hydrosphere, biosphere, and atmosphere (initial post due Wednesday; comments due Sunday)
Week 5	Water & Waves	Ocean Storytelling Activity 2: Tsunamis Knowledge Check: Summary #3 – the characteristics of water that most affect the ocean.

Week and Dates	Topics	Assignments and due dates. All assignments and discussions are due by the end of the week for which they are assigned unless otherwise noted
Week 6	Ocean Chemistry	Quiz #3 Discussion Board: Mangroves, and the advantages and disadvantages for plants living in salty water (initial post due Wednesday; comments due Sunday)
Week 7	Ocean Circulation	Ocean Storytelling Activity 3: Ocean Circulation—describing the path of a particle of water Knowledge Check: Summary #4—addressing the strengths and weaknesses of the map of the ocean conveyor belt
Week 8	Ocean & Climate	Lab #2: Habitable Planet— <i>Results</i> due Sunday Quiz #4

Week 9	Cryosphere	Lab #2: Habitable Planet—Lab Report due Wednesday Lab #3: Arctic Sea Ice Knowledge Check: Summary #5—explaining the similarities and differences between the Arctic and Antarctic
Week 10	The Ocean and Climate Change	Lab #3: Arctic Sea Ice—Lab Report due Wednesday Quiz #5 Discussion Board: Speaking about rising sea level and its effects (initial post due Wednesday; comments due Sunday)
Week 11	Climate Modeling	Lab #4: Marine Oxygen Isotopes, Part 1 Knowledge Check: Summary #6—explaining why model output is part of ocean and climate science

Week 12	Ocean Ecosystems	<p>Quiz #6</p> <p>Ocean Storytelling Activity 4: Coral Reefs – telling the story of a reef and its inhabitants</p>
Week 13	Ocean Acidification	<p>Lab #4: Marine Oxygen Isotopes, Part 2</p> <p>Knowledge Check: Summary #7 – writing a press release on the importance of past climate</p>
Week 14	Ocean Migrations	<p>Lab #4: Marine Oxygen Isotopes –Lab Report due Wednesday</p> <p>Quiz #7</p> <p>Discussion Board: the evolutionary advantages of migration (initial post due Wednesday; comments due Sunday)</p>
Week 15	Future of the Ocean	<p>Knowledge Check: Summary 8</p> <p>VoiceThread of your favorite summary topic.</p> <p>Discussion Board: Responding to Jetnil-Kijner’s “Tell Them.”</p>