MSCI 210 Honors
Oceans and Society
Spring 2017
Columbia Campus

Course Syllabus, Policies, and Schedule

Instructor: Dr. Michelle L. Hardee

Class Times: Mondays / Wednesdays 3:55 – 5:10 p.m.
Class Place: LeConte College Rm. 201

Office Location: Thomas Cooper Library Room L511
Contact Info: hardeem@mailbox.sc.edu, 777-1975
Office Hours: By-appointment preferred

MSCI 210H Lab:
Mondays 5:30 – 7:30 p.m., EWSC 111
TA Instructor: Eric Hancock

A nontechnical introduction to marine science (geological, biological, chemical, and physical aspects) and the interaction of humans with the marine environment, including marine organisms, marine systems, and the physical and chemical characteristics of oceans and estuaries.
COURSE DESCRIPTION

Oceans and Society provides students with an opportunity to explore the world of oceanography, marine biology, and conservation. As you will discover, oceanography is an interdisciplinary subject comprised of concepts and ideas from biology, ecology, meteorology, geology, chemistry, physics, cultural anthropology, economics, political science, environmental law, and many other disciplines. Of the total water resources available, more than nine-tenths is composed of the oceans. We use the oceans for food, energy and materials, and oceans play a major role in controlling climate. Understanding and applying the information and principles that we cover in this course is vitally important for the future of humanity and all other life on our planet. By the end of this course, you will: 1) have learned the basic principles, concepts, and terms of oceanography, 2) understand the scientific method and how hypotheses, experimentation and observations are used to explore and explain how marine systems work, and 3) have learned how science can be used to manage our oceans and our planet so as to provide a more pleasant and safe environment for ourselves and future generations.


COURSE OBJECTIVES AND LEARNING OUTCOMES

*Upon successful completion of Marine Science 210 Honors, students will be able to:*

1. Compare current scientific theories concerning the origin of the Earth and the waters that cover its surface
2. Identify the features of the ocean basins and relate the structures observed to the scientific theories of their origin
3. Demonstrate understanding of basic chemical oceanography in terms of properties of water, salts, and gases and how these properties control life in the oceans
4. Describe motions in the sea in terms of their causes, interactions, and effects on marine and shoreline environments, and influence on human activities
5. Identify key features, interconnectedness, and understand importance of marine organism groups such as protists, zooplankton, sharks, and mammals
6. Demonstrate understanding of the basic ecosystem structure of different marine environments and relate the physical properties of oceanic environments to these ecosystems
7. Identify the causes of marine pollution and environmental degradation, and understand the problems associated with containment and alleviation
8. Demonstrate understanding of how past evidence of ocean and climate history is obtained and how this information is interpreted in the modern ocean using basic oceanographic principles and first order testable hypotheses
9. Evaluate the scientific evidence for both natural and human-induced climate change and evaluate the pros and cons of climate change on ocean systems with respect to society
ASSIGMENTS, EXAMS, AND COURSE GRADING

This course includes the following means of evaluating student performance and comprehension of the material:

1. **Exams**: There are four exams: three lecture exams and one final exam, each worth 100 points. Exams consist of multiple choice, short answer, and short essay questions designed to evaluate student understanding of terminology, key concepts and scientific principles, and applications of these as covered in lecture and the textbook. The highest three scores of these four 100 point exams will be used to calculate your final grade. **300 points total.**

   ★ No makeup EXAMS will be available. ABSOLUTELY NO EXCEPTIONS. If you miss a single exam, you will receive a score of 0; this will be the lowest exam score that will be dropped when calculating your final grade. ★

2. **Quizzes & Participation**: In-class Attendance Quizzes will be used not only to monitor attendance, but also to evaluate student comprehension of key oceanography concepts presented in prior lectures. They are designed so that students demonstrate their knowledge as well as ability to interpret and apply the class material. You are expected to keep up with the readings in advance of class and be prepared for these quizzes. You will receive a 0 for any missed quizzes unless you have a written excuse for a university-sanctioned reason. Illness, accidents, and other unfortunate incidents do not qualify you to receive points for a missed quiz. **25 points total** (possibly more/less).

3. **Five Critical Thinking/Writing Assignments**: These short assignments will require students to reflect on a documentary video or topic discussed in class that focuses on the interaction between oceans and society. These assignments are to be typed and turned in on Blackboard by the due date listed on the syllabus calendar. Due dates for these assignments may be extended by one class day only in the situations of excused, university-authorized absences. Late points will be deducted for late submissions. The fifth “Writing Assignment” includes the Position Paper Outline and Sources list (see below). 5 Writing Assignments, **75 pts. total** (possibly more/less).

4. **Controversial Topic/Position Paper**: Controversial issues relating to the influence of humans on the ocean environment abound in marine science. You will select a topic or issue of your choice and write a Position Paper with supporting references. The paper should present the issue’s development, underlying evidence and theories to support your stance, discuss and refute misconceptions and other arguments, and present possible solutions. More information and guidance will be provided when the paper is assigned (see schedule). **100 points total.** This paper is not optional and cannot be used as a replacement for an exam. An Outline and Sources List is required earlier in the semester and will count as a Writing Assignment.

5. **In-Class and Homework Activities**: To truly and deeply learn information, students must actively engage with it by doing activities beyond just listening – activities involving higher-level thinking skills and guided tasks. At various times throughout the semester we will do in-class or homework activities which provide you an opportunity to reinforce and apply what you have just learned to better understand it. These activities will total **100 points.** They are not optional and cannot be used as a replacement for an exam.
6. **Bonus points and Extra Credit:**
   - **Bonus Points:** These points may come from bonus questions on attendance quizzes and additional bonus point opportunities that may be provided throughout the course (special in-class or outside activity, quiz questions, etc.).
   - **Extra Credit:** I will offer the opportunity for you to do Extra Credit assignments in order to bring grades up and to expose you to additional topics relating to marine science. Examples of extra credit projects include reading a marine science related article or watching a documentary and writing a thoughtful, informed summary and reflection about it, doing an art project accompanied with a write-up explaining your project’s significance and relation to marine science, and many others. Talk to me about what sort of project may be done for extra credit if you have other ideas.

   Assignments or projects average ~4-8 points depending on assignment point value and quality of work. Each student that is eligible (based on attendance, see below) is allowed to submit up to 3 extra credit assignments. In total, extra credit points can contribute up to (but no more than) 3.5% added to your final average (approx. 20 extra points). We will discuss Extra Credit opportunities in more detail later in the semester.

7. **To calculate your course grade:** A total of 600 possible points can be achieved for this course (not including bonus or extra credit points). Final course grade is calculated by:

   **Maximum possible**
   
   \[
   \begin{array}{ll}
   \text{Exam} & 100 \\
   + \text{Exam} & 100 \\
   + \text{Exam} & 100 \\
   + \text{Writing Assignments (5) including} & 75± \\
   \hspace{1cm} \text{Position Paper Topic/Outline} & \\
   + \text{Attendance Quiz Points} & 25± \\
   + \text{In-Class/Homework Activities (6)} & 100 \\
   + \text{Position Paper} & 100 \\
   \hline
   \text{Total} & 600 \\
   \end{array}
   \]

   \[
   \text{Final Average} \% = \frac{(\text{Total Points} \times 100)}{600}
   \]

8. Final grades will be assigned based on the following distribution:
   - 90-100 = A
   - 86-89.9 = B+
   - 80-85.9 = B
   - 76-79.9 = C+
   - 70-75.9 = C
   - 66-69.9 = D+
   - 60-65.9 = D
   - <60 = F
ATTENDANCE

- **Class attendance is mandatory.** The USC Bulletin for Undergraduate Studies states that absences of more than 10% of the scheduled class sessions are excessive – and both excused and unexcused absences count into this 10%. If you miss more than 10% of class, I reserve the right to deduct half a letter grade from your final average. If you know you are going to miss class for a university-sanctioned (excused) reason you MUST contact me a minimum of 2 weeks before class to request accommodation for any assignments.

- Along with taking roll, I give unannounced Attendance quizzes regularly during the course, discussed above. To be eligible for any Extra Credit opportunities (see below), you cannot miss more than two (2) of these quizzes or roll checks. This means if you miss 3 quizzes or roll checks you cannot receive points for extra credit projects or assignments, no matter how well you may do on them. **Missing an In-Class Activity will also count as a missed Attendance quiz.**

HONOR CODE AND CHEATING

- **USC HONOR CODE:** It is the responsibility of every student at the University of South Carolina Columbia to adhere steadfastly to truthfulness and to avoid dishonesty, fraud, or deceit of any type in connection with any academic program. Any student who violates this Honor Code or who knowingly assists another to violate this Honor Code shall be subject to discipline. **By signing your name to a quiz or test you are acknowledging that you will adhere to the Honor Code at USC.**

- Any suspected violation of the University of South Carolina Honor Code will be reported to the Office of Academic Integrity to be dealt with accordingly. If, after an investigation by the Office of Academic Integrity a student is found to have violated the Honor Code, a **minimum** academic penalty of an “F” on the assignment may be assigned in addition to any sanctions handed down by the Office of Academic Integrity.

- If you are caught cheating on an exam, you will be reported to OAI and you will be assigned an **F** for the exam if you are found to have violated the Honor Code.

- If I find you plagiarized another’s work on writing assignments or an extra credit project or assignment, you will be reported to OAI and assigned an **F** for that assignment if you are found to have violated the Honor Code.

ADDITIONAL AND IMPORTANT COURSE INFORMATION

- Reading assignments are listed in the syllabus. The textbook is mandatory; you can buy or rent it at the bookstore (or online). Please buy/rent only the 7th edition – earlier editions are now out-of-date regarding marine science issues and topics. Occasionally, **additional reading assignments** will be provided depending on the topic. These reading assignments are required reading as well, as they will supplement certain topics lacking in your textbook.

- **Class time** will involve lectures using PowerPoint presentations, short videos, DVD documentaries, in-class group or pair-work assignments and other interactive activities. PowerPoint lectures will be posted on Blackboard prior to class. I will add substantially to each topic with additional information given in class that is not in the textbook. You MUST be in class to obtain solid and complete notes! Make sure you pay attention in lecture and supplement the PowerPoints with notes you take during class. You will also be responsible for
taking notes concerning videos and DVDs, so come to class, pay attention, and participate in the discussion of this supplementary information in class.

- **Student Conduct**: I expect you to be respectful during class, to me and to other students around you. Absolutely NO sleeping, NO music-playing devices or technology, and NO cell phones should be in use by any student during class. Be sure that all ringers on cell phones, smart phones, and beepers are TURNED OFF during lecture. If you are repeatedly texting, web-surfing, using social media, or anything else deemed as disruptive or disrespectful to me or others, *I reserve the right to confiscate the offending electronics for the remainder of the class period*. If this becomes a recurring problem, I will report you to Student Conduct.

- **Diversity and Inclusivity**: In order to learn, we must be open to the views of people different that ourselves. In our small “community” of this class, please honor the uniqueness of your fellow classmates and appreciate the opportunity we have to learn from one another. Please respect each other’s opinions and refrain from personal attacks or demeaning comments of any kind. Finally, remember to keep confidential all issues of a personal or professional nature that are discussed in class.

- **Accommodating Disabilities**: Reasonable accommodations are available for students with a documented disability. If you have a disability and may need accommodations to fully participate in this class, contact the Office of Student Disability Services: 777-6142, TDD 777-6744, email sasds@mailbox.sc.edu, or stop by LeConte College, Room 112A. All accommodations must be approved through the Office of Student Disability Services.

- **Students MUST become familiar with and regularly access the Blackboard course page.** Regular announcements, resources, and other information will be posted on Blackboard for your benefit and use. Posting of questions, comments and discussion threads in the Discussion Groups section is encouraged. These discussion boards will be moderated – any disrespectful or disruptive comments will be deleted and if considered offensive, harassing, or discriminatory, will be reported to the Office of Equal Opportunity Programs (EOP) or Office of Academic Integrity (OAI).


![Smiley](attachment:smiley.png) With all that said, I sincerely hope that you enjoy this class! I encourage you to ask questions and start discussions about any concepts, misconceptions, preconceptions, current events, or anything you’ve encountered related to marine science. Please feel free to contact me with any questions you may have. I am extremely approachable and welcome the opportunity to talk with you! I strive to provide you with an interesting and enlightening course concerning the marine environment and our impacts on it.
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<thead>
<tr>
<th>Day</th>
<th>Date</th>
<th>Topic</th>
<th>Required Readings</th>
<th>Assignment</th>
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<tbody>
<tr>
<td>1</td>
<td>M, 1/9</td>
<td>Introductions, Class Details and Syllabus Stuff</td>
<td>(Chapter 1)</td>
<td>Introductory email</td>
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<td>The Scientific Method</td>
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<td>2</td>
<td>W, 1/11</td>
<td>A Big Bang and a Little Astronomy</td>
<td>Chapter 1, Chapter 2</td>
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<td>Origin of the Earth and Ocean</td>
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<td>A (very brief) History of Marine Science</td>
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<td>M, 1/16</td>
<td>Dr. Martin Luther King, Jr. Day – no classes</td>
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<td><em>This schedule is highly subject to change!</em></td>
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<td>Tues, 1/17</td>
<td>Last day to drop/add without “W” being recorded</td>
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<td>3</td>
<td>W, 1/18</td>
<td>History of Marine Science (cont.) Earth’s Inner “M&amp;M”</td>
<td>Chapter 2, Chapter 3</td>
<td>Writing Assignment 1</td>
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<td>Blue Planet Documentary: Ocean World</td>
<td>Assigned Reading</td>
<td>(BPD Homework)</td>
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<td>4</td>
<td>M, 1/23</td>
<td>Seafloor Spreading and Plate Tectonics</td>
<td>Chapter 3</td>
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<td>Plate Tectonics: Earth’s Mover and Shaker</td>
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<td>5</td>
<td>W, 1/25</td>
<td>Plate Tectonics: Earth’s Mover and Shaker Google Earth Activity*</td>
<td>Chapter 3</td>
<td>Writing Assignment 1 DUE</td>
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<td>Google Earth Activity*</td>
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<td>In-Class Activity 1</td>
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<td>6</td>
<td>M, 1/30</td>
<td>Plate Tectonics: Earth’s Mover and Shaker (Google Earth Activity cont. if necessary) Mountains, Canyons, and Plains of the Ocean</td>
<td>Chapter 3, Chapter 4</td>
<td>In-Class Activity 1 cont.</td>
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<tr>
<td>7</td>
<td>W, 2/1</td>
<td>Mountains, Canyons, and Plains of the Ocean: Seafloor Features</td>
<td>Chapter 4, Chapter 5</td>
<td>In-Class Activity 2</td>
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<td>The Ocean Drilling Program if time</td>
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<td>8</td>
<td>M, 2/6</td>
<td>EXAM 1 (Chapters 1 – 4, Readings)</td>
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<td>9</td>
<td>W, 2/8</td>
<td>Ocean Sediments and the Stories They Tell Us</td>
<td>Assigned Reading</td>
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<td>The Ocean Drilling Program</td>
<td>Chapter 5</td>
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<td>10</td>
<td>M, 2/13</td>
<td>Why Water is Weird, Seawater is Salty, and the Ocean Has Layers</td>
<td>Chapter 6</td>
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<td>11</td>
<td>W, 2/15</td>
<td>Characteristics of Seawater (cont.) Solar and Atmospheric Influences on Oceans</td>
<td>Chapter 6, Chapter 7</td>
<td>In-Class Activity 3</td>
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<td>12</td>
<td>M, 2/20</td>
<td>Winds and Currents</td>
<td>Chapter 7</td>
<td>Position Paper Assigned</td>
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<td>How to Make a Hurricane</td>
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<td>13</td>
<td>W, 2/22</td>
<td>Ocean Circulation</td>
<td>Chapter 8</td>
<td>Writing Assignment 2</td>
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<td>El Niño Southern Oscillation</td>
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<td>14</td>
<td>M, 2/27</td>
<td>Waves &amp; Tsunamis (?)</td>
<td>Chapter 9 (?)</td>
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<td>15</td>
<td>W, 3/1</td>
<td>EXAM 2 (Chapters 5 – 8, 9?)</td>
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<td>Thurs, 3/2</td>
<td>Semester midpoint – Last day to drop course without “WF” being recorded</td>
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<td>16</td>
<td>M, 3/6</td>
<td>Waves &amp; Tsunamis (?)</td>
<td>Chapter 9 (?)</td>
<td>Writing Assignment 3</td>
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<td>W 3/8</td>
<td>Spring Break – no classes</td>
<td>Chapter 10 Assigned Reading</td>
<td>(BPD Homework)</td>
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<td>Blue Planet Documentary: Tidal Seas (?)</td>
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<td>Date</td>
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<td>Assignment</td>
<td>Chapter(s)</td>
<td>Due Date</td>
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| 17 W, 3/15 | Tides (cont.)  
Coasts Are Much More Than Beaches | Chapter 10  
Chapter 11 | Position Paper Topic Description | DUE |
| 18 M, 3/20 | Coasts Are Much More Than Beaches  
The South Carolina Coastline | Chapter 11 | Writing Assignment 3  
In-Class Activity 4 (Take-home) | DUE |
| 19 W, 3/22 | Why Primary Producers Are So Tiny and Whales are So Big (Food Webs) | Chapter 12 |  |
| 20 M, 3/27 | Natural Selection and Adaptation: How Ocean Organisms Live in a Liquid | Chapter 12  
ICA 4 Due |  |
| 21 W, 3/29 | Benthic Communities: Sandy vs. Rocky Shores, Coral Reefs, and Hydrothermal Vents | Chapter 14  
Videos |  |
| 22 M, 4/3 | EXAM 3 (Chapters 9 – 12, 14?) |  |  |
| 23 W, 4/5 | Pelagic Communities: Phytoplankton, Zooplankton, and Fishes | Chapter 14  
Chapter 13 | In-Class Activity 5  
Position Paper Outline & Sources DUE |  |
| 24 M, 4/10 | Pelagic Communities (cont.): Fishes, Sharks, and Deep-sea Weirdness | Chapter 13  
Videos | Extra Credit Opportunities Handout |  |
| 25 W, 4/12 | Pelagic Communities (cont.): Mammals, a.k.a. “Charismatic Megafauna”  
Documentary: The Cove | Chapter 13 | ICA 5 Due  
Writing Assignment 4 (Cove Homework)  
Any PP Drafts DUE |  |
| 26 M, 4/17 | Uses and Abuses of the Ocean: Resources Used, Fisheries Abused | Chapter 15, Assigned Readings |  |
| 27 W, 4/19 | Ocean Pollution  
Uses and Abuses: The Ocean-Climate Connection | Chapter 15, Assigned Readings | Writing Assignment 4 DUE |  |
| 28 M, 4/24 | Oceans and Climate Change: What We Know, How We Know It, & What the Future Holds  
Last Day of Class | Assigned Readings | Position Paper DUE  
In-Class Activity 6 |  |
| Tues, 4/25 | Reading Day |  |  |
| ??? | SC Aquarium Field Trip |  |  |
| Fri. Apr 28 | EXAM 4 “Final” (Chapters 13 – 15 and readings): 4:00 - 6:30 p.m. |  |  |