Course Guide, Fall 2005
Geosciences 103

INTRODUCTORY OCEANOGRAPHY

TuTh 11:15-12:30
Thompson 104

INSTRUCTOR:
Professor Richard Yuretich

Office:
Morrill 138
Phone 545-0538
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Office Hours:
Mon, Thurs. 1:30-2:30
and by appointment

TEACHING ASSISTANT:
Jia Chen

Office:
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Office Hours:
Tues. 3:00-4:00
And by appointment

REQUIRED BOOKS:


The ocean covers more than 70% of our home planet. Although there are many aspects of the ocean that remain unknown, we have learned a great deal through scientific study about how it keeps the Earth in a liveable state.
Course Goals -- During the coming semester we will explore many different aspects of the ocean environment, with the following goals in mind:

- Assess the impact that the ocean has upon our own lives;
- Decide upon effective management of marine and coastal resources;
- Discover the process of scientific inquiry as applied to the ocean;
- Work collaboratively to solve problems related to the ocean;
- Interpret charts, maps, and graphs as part of the investigative process.

WebCT -- This is a WebCT course and everyone must have a computer account with UMass OIT (Office of Information Technology). WebCT will be used for several major functions: preparation for class, posting of grades, and class notes. In addition, we will use WebCT to update the syllabus, post announcements and keep a course calendar. It will also allow you to communicate with the instructional team. **There will be weekly questions and assignments posted on WebCT. You will be expected to answer the questions during the allotted time period.** These questions will constitute 10% of your final grade.

Class Meetings -- Our class meetings will all be interactive. Although some traditional lectures will be used to convey the basic information necessary to understand the topic being addressed, much of the time will be spent doing exercises and interpreting data, so that you can learn by doing.

The classes meet for **75 minutes** and we will need all of that time to consider the subject of the day. Be prompt, but if you are unavoidably delayed or must leave early please use the back entrances to the auditorium **only** and move as quietly as possible.

Text and Readings -- Keep current in your readings and you will get more out of the course, and you'll also have an easier time preparing for the exams. The book we have written contains many of the in-class exercises and homework that you will do this semester. **You must bring this book to every class! On most days, you will hand in a completed sheet from this book at the end of class.**

Attendance -- is mandatory, and you are expected to have read the appropriate parts of the book before class. During class we will not be simply reviewing the text, but emphasizing specific applications of the topic, discussing current events and discoveries, and clarifying questions you may have. Over the years there has always been an excellent correlation between class attendance and grades. If you miss a class, we try to simplify things by putting summaries of the class on our WebCT site.

In-class investigations and homework -- We will do some collaborative investigation in almost every class. Scientific inquiry involves learning by doing and solving problems, not just listening and reading, and that is the goal of these assignments. These will usually be collected and will constitute 10% of your final grade. **Note: Homeworks or in-class exercises will not be accepted after the due date.**

Examinations -- **Five** examinations will be given during the semester. The first four exams will be given during
regularly-scheduled class meetings. The fifth and final exam will be given during finals week as scheduled by the University, and this will be a CUMULATIVE EXAM.

The exams will be done in two stages. You will take the exam in the traditional manner during the first half of the class. Then, you will take the exam a second time allowing open notes and discussions with other students in the class.

The highest three grades from the first four exams will be counted in your final average. In other words, you can miss an exam with no penalty and no questions asked, and make-up exams will not be administered if you miss one exam! If you miss two exams because of reasons beyond your control, we will allow you to make up one of them (our choice) on Make-up Marathon Morning, which is the first day of Reading Period. Everyone is required to take the final exam.

Grades -- Grades will be calculated on the following basis:
- Your Best 3 In-Class Exams: 55%
- Final Exam: 25%
- Investigations: 10%
- WebCT Class Preparation: 10%
You will be able to see your grades on exams and assignments by logging on to the WebCT site.

Grading – There is no curve or scale for this class. Your letter grade will be based on your numerical score as follows:
- 95 and above = A
- 90-94 = A-
- 87-89 = B+

84-86 = B
80-83 = B-
77-79 = C+
74-76 = C
70-73 = C-
65-69 = D
Below 65 = F

Academic Honesty -- Cheating is a burden upon everyone; a betrayal of your fellow students as well as your own accomplishments and an insult to true learning and curiosity. Instructors and proctors will monitor exams vigilantly and will remove the exams from anyone suspected of cheating. Don’t expect to pass this course if you cheat during an exam!

To summarize: what you can expect

A. You will get an introduction to the science of oceanography: the scientific principles upon which it is based, and the importance of the ocean in our daily lives.

B. Class meetings will be interactive, with numerous in-class investigations.

What I expect from you

A. Regular attendance, completion of the on-line assignments, keeping up with the readings, and active participation during class.

B. Courtesy during class! This means arriving promptly, and not disturbing others in class with rude and noisy behavior. Cell phones and other electronic devices are to be turned off during class time.
First Assignment:

1. Activate your WebCT account. You may do this directly from the UMass OIT web site (http://www.oit.umass.edu/accounts/) or you can go to Room A109 Lederle GRC for further assistance.

2. Once your account is activated, go to https://webct.oit.umass.edu log on with your NetID and password. Complete the student contract, which will be found under the “Assignments” section.

3. You must complete the student contract by the end of add-drop (September 20) or else you will face withdrawal from the course.
### Geosciences 103

**INTRODUCTORY OCEANOGRAPHY**

Fall, 2005             Prof. Richard F. Yuretich

### PROJECTED SCHEDULE

<table>
<thead>
<tr>
<th>Date</th>
<th>Planned Topic</th>
<th>Investigating</th>
<th>Fundamentals</th>
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<tbody>
<tr>
<td></td>
<td><strong>PART 1: EARTH, THE WATER PLANET</strong></td>
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<td>Sept. 8</td>
<td>Introduction; Exploring the Ocean</td>
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<td>13</td>
<td>Navigation and Scientific Investigation</td>
<td>p. 88-89</td>
<td>p. 2-21; 29-33; 38-41; 315-316</td>
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<td>15</td>
<td>Probing the Sea Floor: Earth’s Interior</td>
<td>p. 100-101; 94-95</td>
<td>p. 77-84; 43-4</td>
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<td>Continents &amp; Ocean Basins</td>
<td>p. 98-99</td>
<td>p. 43-65</td>
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<td>22</td>
<td>Shifting Continents &amp; Sea-floor Spreading</td>
<td>p. 96-97; 100-107</td>
<td>p. 66-75</td>
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<td>27</td>
<td><strong>FIRST EXAM</strong></td>
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<td><strong>PART 2: SEDIMENTS, SEA WATER AND GLOBAL TEMPERATURE</strong></td>
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<td>6</td>
<td>Properties of water and energy transfer</td>
<td>p. 110-113</td>
<td>p. 100-108; 122-126</td>
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<td>11</td>
<td>Wind Patterns and Ocean Currents</td>
<td>p. 124-133</td>
<td>p. 133-150; 162-174</td>
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<td>The Ocean and Climate Control</td>
<td>p. 134-137</td>
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<td><strong>SECOND EXAM</strong></td>
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<td><strong>PART 3: MOVING WATER AND SHORELINES</strong></td>
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<td>20</td>
<td>Upwelling and Density Currents</td>
<td>p. 138-141</td>
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<td>Waves</td>
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<td>Tides</td>
<td>p. 144-145</td>
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<td>Nov. 1</td>
<td>Coastlines and Beaches</td>
<td>p. 168-177</td>
<td>p. 209-223</td>
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<td>Living on the Coast</td>
<td>p. 178-183</td>
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<td><strong>THIRD EXAM</strong></td>
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PART 4: ECOLOGY OF THE OCEANS

Nov. 10  Productivity and Food Chains   p. 152-159   p. 239-256
15     The Marine Realm           p. 146-148   p. 236-239
17     Life in the Open Ocean      p. 164-165   p. 258-270
22     Life in the Deep Sea        p. 270-283
24     Thanksgiving Holiday – No Class

29     FOURTH EXAM

PART 5: LIVING IN HARMONY WITH THE SEA

6       Coral Reef Environments       p. 166-167   p. 302-307
8       Food resources and overfishing p. 184       p. 283-287;
                                           307-310
13      Solutions to Pollution?       p. 228-235

FINAL EXAM DURING FINALS WEEK: Date to be announced