General Information
Catalog Number, Section, and Term: ENVR 1112, 21, Spring 2008

Title of Course: Lab: Oceanography

Co-requisites: ENVR 1111, Oceanography

Class Room Meeting Times and Dates: Dickinson Hall Room 5523
Thursdays 8:00 AM – 10:50 AM, January 31, 2008 – May 15, 2008

Instructor: Dr. Marion McClary

Office Location and Office Hours: Dickinson Hall Room 4456, Tuesdays, 10:00 AM –
11:00 AM and 4:00 PM – 5:00 PM and Thursdays, 11:00 AM – 12:00 PM.

Laboratory Location: Dickinson Hall Room 5513

Telephone with voice mail: 201-692-2606

FDU Email Address: mcclary@fdu.edu

Course Description
Lab associated with ENVR 1111 Oceanography.

Text and Materials
Required text: Invitation to Oceanography, Fourth Edition, Paul R. Pinet,

Rules, Regulations, Grades
Attendance and lateness policy: Students are responsible for all material missed due to
absence and or tardiness.

Makeup and missed work policy:
1) Laboratory papers are write-ups of your research projects.
2) Laboratory papers may be handed in on or before the date they are due.
3) Papers not handed in by the last day of the course will become zeros.
4) Only doctor’s notes or other official notes can remove zeros.
Integrity and plagiarism policy:
Students enrolled at Fairleigh Dickinson University are expected to maintain the highest standards of academic honesty. Students have the responsibility to each other to make known the existence of academic dishonesty to their course instructor, and then, if necessary, the department chair, or the academic dean of their college. Course instructors have the added responsibility to state in advance in their syllabi any special policies and procedures concerning examinations and other academic exercises specific to their courses. Students should request this information if not distributed by the instructor.

Academic dishonesty includes, but is not necessarily limited to, the following:
1. **Cheating** - Giving or receiving unauthorized assistance in any academic exercise or examination. Using or attempting to use any unauthorized materials, information, or study aids in an examination or academic exercise.
2. **Plagiarism** - Representing the ideas or language of others as one’s own.
3. **Falsification** - Falsifying or inventing any information, data, or citation in an academic exercise.
4. **Multiple Submission** - Submitting substantial portions of any academic exercise more than once for credit without the prior authorization and approval of the current instructor.
5. **Complicity** - Facilitating any of the above actions or performing work that another student then presents as his or her assignment.
6. **Interference** - Interfering with the ability of a student to perform his or her assignments.

Sanctions: Any student found guilty of academic dishonesty will, for the first offense, receive one or a combination of the following penalties:
1. **No credit (0) or Failure for the academic exercise**
2. **Reduced grade** for the course
3. **A failure in the Course** that is identified on the student’s permanent record card as permanent and cannot be removed.
4. **Recommendation for Academic Probation** to the dean’s office.

In cases of interference and complicity, when the student is not registered in the affected course, the incident may be recorded on the student’s permanent record card. In any case, the incident and penalty will be recorded in the student’s file maintained in the campus office of Enrollment Services.

For a second offense of academic dishonesty, a student will be subject to any combination of the above sanctions, and, with concurrence of the academic dean, one of the following:
1. **Suspension** from the University for one year. Readmission will be contingent upon the approval of the academic dean.
2. **Dismissal** from the University.
Grading policy:
There will be two laboratory exams. Each laboratory exam is worth 10% of your grade. The two laboratory exams are 20% of your grade. There will be laboratory and field exercises. The laboratory and field exercises are 20% of your grade. There will be a laboratory paper. The laboratory paper is 10% of your grade. There will be an oral presentation. The oral presentation is 10% of your grade. There will be four lecture exams. Each lecture exam is worth 10% of your grade. Your final grade will be an average of two laboratory exam grades, the laboratory exercises, a laboratory paper, an oral presentation, and four lecture exam grades. This average will then be placed on the following scale for your grade:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>A</td>
<td>92 - 100</td>
</tr>
<tr>
<td>A-</td>
<td>89 - 91</td>
</tr>
<tr>
<td>B+</td>
<td>86 - 88</td>
</tr>
<tr>
<td>B</td>
<td>82 - 85</td>
</tr>
<tr>
<td>B-</td>
<td>79 - 81</td>
</tr>
<tr>
<td>C+</td>
<td>76 - 78</td>
</tr>
<tr>
<td>C</td>
<td>72 - 75</td>
</tr>
<tr>
<td>C-</td>
<td>69 - 71</td>
</tr>
<tr>
<td>D</td>
<td>60 - 68</td>
</tr>
<tr>
<td>F</td>
<td>0 - 59</td>
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Safety Policy:
Effective with the Fall 2001 semester no student will be permitted into laboratories wearing shorts, halter-tops, open toed sandals, undershirts, tank tops or any other inappropriate attire. All students are to purchase a white laboratory coat which can be used for any Biology or Chemistry class which requires a lab--non-majors or majors.

Course Objectives
The objectives (goals) of this course are for you to become competent in knowledge of: (1) the scientific method; (2) data analysis; (3) the use of scientific equipment; (4) organismic identification; (5) organismic classification; (6) following laboratory/field protocols; (7) writing a scientific paper; and (8) giving a scientific talk.

Teaching Methodologies/Activities
The following will be used to assess student learning:
1. Exams to assess numbers 1-2 above
2. Lab and field exercises, a paper, and an oral presentation to assess numbers 3-7

Modes of instruction that will be used by the instructor:
1. Hands-on Demonstration
## Course Outline

<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan. 31</td>
<td>The Growth of Oceanography</td>
<td>The Scientific Method</td>
</tr>
<tr>
<td>Feb. 07</td>
<td>The Planet Oceanus</td>
<td>Bathymetry Laboratory</td>
</tr>
<tr>
<td></td>
<td>The Origin of Ocean Basins</td>
<td>Sea-Floor Spreading Laboratory</td>
</tr>
<tr>
<td>21</td>
<td>Marine Sedimentation</td>
<td>Field Study 1</td>
</tr>
<tr>
<td>28</td>
<td>The Properties of Seawater &amp; Wind and Ocean Circulation</td>
<td>Exercise 2</td>
</tr>
<tr>
<td>Mar. 06</td>
<td>EXAM I</td>
<td></td>
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<td></td>
<td>13* Tides</td>
<td>Exercise 2</td>
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<td></td>
<td>20* Spring Recess</td>
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<td></td>
<td>27* Marine Ecology</td>
<td>Exercises 3 and 8-11</td>
</tr>
<tr>
<td>Apr. 03*</td>
<td>Biological Productivity in the Ocean</td>
<td>Feeding Study</td>
</tr>
<tr>
<td>10</td>
<td>The Dynamic Shoreline: FIELD TRIP</td>
<td>Erosion Study</td>
</tr>
<tr>
<td>17</td>
<td>Coastal Habitats: FIELD TRIP</td>
<td>Salt Marsh Study</td>
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<tr>
<td>24</td>
<td>Ocean Habitats and Their Biota</td>
<td>Exercises 3 and 8-11</td>
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<tr>
<td>May 01</td>
<td>EXAM II</td>
<td></td>
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<tr>
<td>08</td>
<td>ORAL PRESENTATIONS AND PAPERS DUE</td>
<td></td>
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<tr>
<td></td>
<td>15 Lecture Only</td>
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</tbody>
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* Days that Dr. McClary may be in the Dominican Republic. Special arrangements TBA.

## Other Information
(Please see the next two pages)
Papers:
You will be responsible for a paper. It must be typed and will be graded based on its organization, content, grammar, punctuation, and spelling. It is to be written in scientific format (avoid using “my”, “our”, “I”, or “we”).

Title Page
State the title of your work, your name, school address, and the date.

Abstract
Write a few sentences of the introduction, methods, results, and discussion. If you get information from other authors, you must cite them. You cite them by writing their last name followed by a comma and the year of publication in parentheses (not in abstract).

Introduction
Start by giving the background of the topic and end by stating the purpose of the study.

Materials and Methods (written in past tense)
Explain how you did the study. As you explain how you did the study, include the materials that you used in paragraph form. No lists.

Results
Start by saying what you found and end by showing what you found. You show the reader what you found by referring to tables or figures (graphs or diagrams). You refer to them by number (like Table 1 or Fig. 1). You must number your tables and figures. For tables or figures you must provide a key or legend to explain the meaning of any signs or symbols that you use. For graphs you must also label the x axis and the y axis and state the units (moles or grams, #, or %).

Discussion
Start by briefly telling the reader what you found and end by telling them what you think the results mean and why. If the study did not turn out as you thought it should, state the reasons why. How do you think these reasons gave you the results that you got? You can include your mistakes here but you must explain how you think these mistakes gave you the results that you got. At the very end of this section you should conclude by making a statement about whether the purpose of this study was accomplished or not, and what it means in a general sense.

Hints for writing papers
1. Keep a detailed record of what you used to do the study and how you did the study
2. Write the materials and methods section using this information
3. Look at your tables and figures and state what you got
4. Write the results section using these data
5. Decide what you think the results mean and why
6. Write the discussion using these ideas, conclude (general) by relating to the purpose
7. Decide what information the reader needs to know to understand the discussion
8. Write the introduction using this information, state study purpose, and write abstract.
Papers:
You will be responsible for a paper. It must be typed and will be graded based on its organization, content, grammar, punctuation, and spelling. It is to be written in scientific format (avoid using “my”, “our”, “I”, or “we”).

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Introduction
Start by giving the background of the topic and end by stating the purpose of the study.

Materials and Methods (written in past tense)
Explain how you did the study. As you explain how you did the study, include the materials that you used or will use in paragraph form. No lists.

Results
Start by saying what you found and end by showing what you found. You show the reader what you found by referring to tables or figures (graphs or diagrams). You refer to them by number (like Table 1 or Fig. 1). You must number your tables and figures. For tables or figures you must provide a key or legend to explain the meaning of any signs or symbols that you use. For graphs you must also label the x axis and the y axis and state the units (moles or grams, #, or %).

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Acknowledgements
Thank everyone that helped you with the project.

Literature cited
Write the author’s last name, a comma, their first initial, and a period before writing the same for the other authors. Next write the year the paper was published, a period, the title, a period, the journal name, volume, and page numbers. Do this for each work cited and put on separate lines. Put in alphabetical order by last name of the first author.