BI 361: INTRODUCTION TO MARINE BIOLOGY LAB

TA: James Powell (powell3@pdx.edu)
Time and Location: Tues or Thurs 2-4:50pm, SRTC 257
Office Hours:

Learning Objectives and Skills Development:
In this course you will use applied methods in a laboratory setting to
- become more familiar with the chemical and biological processes in the marine environment,
- learn to critically evaluate current scientific literature,
- better understand some of the important issues facing our ocean’s health today.

Required Lab Manual:

Expectations:
- Students will read through the assigned laboratory exercise before coming to lab
- Students will come to lab on time, and will remain in the lab until the experiments are finished and all materials are cleaned up.
- Students will work in a collaborative setting, and participate in all experiments.
- Students will be respectful of all preserved and live animal and plant specimens.
- Students will pay close attention to all safety precautions given in the text and by the laboratory instructor.
- Students will follow all standard lab safety guidelines, including:
  - Closed toes shoes must be worn
  - No food or drinks

For non-majors: Please realize that this course has a pre-requisite: completion of 2-3 terms of the principles of biology (or similar) series. If you have not taken any college-level general biology courses, and are taking this class to fulfill your science requirement, you must discuss your participation in this class with me directly as soon as possible. If you choose to stay in the course, please be aware that you will be responsible for obtaining any background knowledge not covered in the course.

Grades:
Grades will be determined by class participation, paper discussions, and lab reports
<table>
<thead>
<tr>
<th>Component</th>
<th>Points</th>
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</thead>
<tbody>
<tr>
<td>Lab exercise (9 total, only 8 count, 20 pts each)</td>
<td>160 pts</td>
</tr>
<tr>
<td>Paper Presentation</td>
<td>20 pts</td>
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<tr>
<td>Participation (in discussions, lab exercises)</td>
<td>10 pts</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>190 pts</strong></td>
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</table>

Grading scale:
- A: 92.5% + 87.0 – 89.4%
- A-: 89.5-92.4%
- B+: 82.5 – 86.9%
- B: 79.5-82.4%
- B-: 72.5 – 76.9%
- C+: 77.0-79.4
- C: 68.5 – 72.4
- D+: 66.0-68.4
- D: 62.0-65.9
- D-: 60.0 – 61.9

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Lab Reports
Each lab report will be worth 20 points: the lowest grade will be dropped, for a total of 160 points available. **As only 8 of 9 lab reports contribute to your grade, no make-up labs will be available.** If a problem arises where multiple labs will be missed, you must discuss this with Erin ahead of time.

All lab reports will be typed, using standard type and formatting. Include your name, and lab section at the top of each page. Make sure to spell check. Points will be taken off for reports that are not spell-checked, do not use complete sentences when necessary, or are very poorly written. Drawings can be included in the lab report packet as a separate, well labeled sheet of paper.

Lab reports will be due within 1 week of completing a lab, and can be handed in to Erin at the beginning of the next lab section. Students who have lab on Tuesdays will turn in their reports the following Tuesday; students with lab on Thursday will turn their reports in the following Thursday. The last report of the quarter will be due the Tue or Th of finals week.

**Lab Report Grading (out of 20 points):**
- 5 pts. Introduction. Give a brief, 1 paragraph, concise overview of the general concepts tested, the types of experiments conducted, and why they are relevant to studying the concepts at hand (cannot be paraphrased from the manual).
- 5 pts. Completed all required drawings, tables, etc. correctly
- 8 pts. Answered all questions at the end of each lab exercise.
- 2 pts. Good use of grammar, spell check, etc.

**Paper Discussions (20 points)**
A major part of the lab will be peer led discussions of important primary research (scientific papers) in the field. These papers will reflect and reinforce the material covered in lecture and will illustrate how biology is actually studied in the marine environment. Each week 2 students will present a research paper on something related to the lecture topic. More details on how presentations are structured and graded is available in the “Presentation Guidelines.” Non-presenters need to participate in these discussions to receive the “class participation” points for this course.

**In-class participation**
Students will be evaluated for their participation in paper discussions and in laboratory exercises. Students who participate in discussion sessions actively (yes, I will keep track of who is talking), participate in lab, stay until the laboratory session is complete and all materials are put away on a weekly basis will receive full points. This portion of your grade is not meant to be significant, but to give additional credit to those students who contribute to the quality of the course.

**Schedule**

<table>
<thead>
<tr>
<th>Week</th>
<th>Dates</th>
<th>Topic</th>
<th>Lab#</th>
<th>Discussion Paper</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>9/28 or 10/1</td>
<td>Principles of Oceanography</td>
<td>4</td>
<td></td>
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<tr>
<td>2</td>
<td>10/6 or 10/8</td>
<td>Ocean Acidification</td>
<td>5</td>
<td></td>
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<tr>
<td>Week</td>
<td>Date(s)</td>
<td>topic</td>
<td>Week</td>
<td>assignment</td>
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<tr>
<td>3</td>
<td>10/13 or 10/15</td>
<td>Marine Microbes</td>
<td>7</td>
<td>Nitrogen fixation paper</td>
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<tr>
<td>4</td>
<td>10/20 or 10/22</td>
<td>Attached Marine Plants</td>
<td>9</td>
<td>TBA</td>
</tr>
<tr>
<td>5</td>
<td>10/27 or 10/29</td>
<td>Marine Mammal necropsy with Dr. Duffield</td>
<td>TBA</td>
<td>TBA</td>
</tr>
<tr>
<td>6</td>
<td>11/3 or 11/5</td>
<td>Marine Mammal and Reptile Movements</td>
<td>12</td>
<td>TBA</td>
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<tr>
<td>7</td>
<td>11/10 or 11/12</td>
<td>Fishing down the food chain</td>
<td>15</td>
<td>TBA</td>
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<tr>
<td>8</td>
<td>11/17 or 11/19</td>
<td>Plastics</td>
<td>18</td>
<td>Plastics in birds</td>
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<tr>
<td>9</td>
<td></td>
<td>Thanksgiving – no labs</td>
<td></td>
<td></td>
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<tr>
<td>10</td>
<td>12/1 or 12/3</td>
<td>Zoos</td>
<td>17</td>
<td>TBA</td>
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**Potential quizzes:**
Preparation is essential for a productive and safe experiment. If it becomes obvious to the instructor that students are not reading ahead for upcoming laboratory exercises, weekly quizzes to encourage preparation will be given. These quizzes will be closed book, and worth 5 points each. Again, it is not expected that quizzes will be a part of weekly lab sections, unless student preparation is poor.

**Accommodations:** Accommodations are collaborative efforts between students, faculty and the Disability Resource Center (DRC). Students with accommodations approved through the DRC are responsible for contacting the faculty member in charge of the course prior to or during the first week of the term to discuss accommodations. Students who believe they are eligible for accommodations but who have not yet obtained approval through the DRC should contact the DRC immediately at 503-725-4150.

**Academic honesty and code of conduct:** it is each student’s responsibility to follow the PSU Student Code of Conduct which can be found at: [http://www.pdx.edu/dos/psu-student-code-conduct](http://www.pdx.edu/dos/psu-student-code-conduct).