**OC-101**

**Introduction to Ocean Science**

**Spring 2012**

**Dr. Lauren Sahl** M**MA extension:** 393

**Office:** 207 Dirigo **email**: lauren. sahl@mma.edu

**Office hours:** M ,T,Th 1000-1100 and by appointment

**Lecture Textbook:** Recommended- Essentials of Oceanography by Trujillo and Thurman 10th ed.Prentice Hall.

**Lab Materials:** See lab syllabus.

**Course Description:** The earth that you know would be very different if not for the ocean. The ocean has played a role in such profound processes as the creation of an oxygen-rich atmosphere, evolution of life, mass extinctions and major climate changes. Students at Maine Maritime know well the importance of the ocean to our quality of life. We use it for food, oil, metal ores, building materials, transporting cargo, and as a dump for wastes. Our exploitation of the ocean will increase as the Earth’s population continues to grow. Education in the ocean system is needed to make informed decisions about it. Savvy mariners know that it just makes sense to understand your working environment. This class introduces students to the many systems at work in the ocean.

**Course Goal:**  Students should strive to build a conceptual model of the ocean as a system where the chemistry, geology, physics and biology are interdependent. One should leave this course able to describe and explain the fundamental features of this system.

**Assessments: 60 % Three exams\*\* (20% each)**

**20% Laboratory grade**

**20 % Final exam\*\*\***

\*\*The highest three out of four exams will be used to determine this grade, unless students are exempted from taking the final.

\*\*\*Students with a 90% average on the four exams may be exempted from the final exam.

**Attendance:** Expected.

**Make-up exams:** Not allowed.

**Academic Honesty Policy**: Students are expected to maintain the highest level of honesty and integrity in all of their academic pursuits and are encouraged to review the MMA website: <http://www.mma.edu/AcademicHonesty.pdf>.

**Accommodation for Learning Differences**: If you have a disability that may impact your work in this class and for which you may require accommodation, please contact the associate dean’s office (205 Leavitt Hall) for an appointment so that appropriate accommodation can be considered. If the meeting results in an accommodation letter, you will need to meet with the course instructor to discuss the accommodations as soon as possible.

**Missed Class Policy**: Missing a class meeting will result in a grade of 0 for any work done during that meeting. If there are unusual circumstances, notify me in advance for an excused absence. In the case of sudden illness, contact me as soon as possible (at the latest contact me prior to the next class meeting).

When making travel plans for weekends, holidays and other times, keep in mind that attendance for classes is required. Travel plans are not a legitimate reason for an absence. Finals will **not** be individually administered for travel reasons.

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| **Lecture and lab schedule** | | | |
| **Date** | **Lecture topics** | **Chapter in Essentials of Oceanography** | **Lab Schedule**  (labs are on Friday) |
| 1-16 | Introduction  Setting the stage | 1 | **Lab 1- Introduction and chart exploration** |
| 1-18 | The Solid Earth |
| 1-23 | Introduction to plate tectonics | 2 | Lab 2- Interpretation of bathymetric charts |
| 1-25 | Tectonic plate motion |
| 1-30 | The shape of the ocean floor | 3 | Lab 3- The shape of the seafloor  **Laptop required** |
| 2-1 | **Exam 1** |  |
| 2-6 | Marine sediments | 4 | Lab 4- Temperature, salinity and density of water |
| 2-8 | Marine sediments |  |
| 2-13 | Water and salinity | 5 | **Lab 5- A salinity section of Castine Harbor**  **Laptop required** |
| 2-15 | Heat and seasons | 6 |
| 2-20 | **Exam 2** |  | Waves in the Ocean |
| 2-22 | Class cancelled |  |
| 2-27 | Coriolis effect and global winds | 6 | **Lab 6 – Light in the ocean** |
| 2-29 | Layering in the Oceans |  |
| Spring Break | | | |
| 3-12 | Layering in the Oceans |  | Lab 7- Tides. Use and interpretation of tide tables |
| 3-14 | Surface currents | 7 |
| 3-19 | Thermohaline circulation |  | **Lab 8- Tidal current measurement.**  **Laptop required** |
| 3-21 | Waves | 8 |
| 3-26 | **Exam 3** |  | **Lab 9- Plankton** |
| 3-28 | Tides | 9 |
| 4-2 | Coasts | 10 | Lab 10- Invasive species in the marine environment |
| 4-4 | The Coastal Ocean | 11 |
| 4-9 | Constraints on life | 12 | **Lab 11- Collecting marine organisms** |
| 4-11 | Primary productivity | 13 |
| 4-16 | **Exam 4** |  | Lab 12- Identifying marine organisms |
| 4-18 | Pelagic biology | 14 |
| 4-23 | Benthic biology | 15 | Lab 13- Make up lab |
| 4-25 | Climate change and the oceans | 16 |
| TBA | Final Exam |  |  |

MMA has adopted outcomes assessment as a tool to measure and improve learning. Your mastery of course material will be assessed in many ways. The table lists examples.

