Course title and number  OCNG 252 Section 501
Term  Fall 2014
Meeting times and location  Room 208, 10:00-12:00 Monday

Course Description and Prerequisites

This course is a lab based introduction to oceanography topics. There are no prerequisites for this course, but a general understanding of basic math is needed and some familiarity with Microsoft Excel is useful. While this class complements the oceanography 251 lecture course, OCNG 251 and 252 do NOT need to be at the same time. OCNG 252 may be taken as a standalone course.

Learning Outcomes

After successfully completing the Introduction to Oceanography lab, students will be able to:

1) Describe the bathymetric variability of the seafloor and how to contour it.
2) Discuss the deposition and transport of sediments in the ocean.
3) Evaluate the different methods for determining salinity and assess which method is more accurate and precise.
4) Investigate how physical factors affect seawater density through experimentation.
5) Describe how density is determined and the role it plays in ocean circulation.
6) Give examples of how climate change impacts the ocean.
7) Describe how waves travel through the water.
8) Describe the effects of seasonal variability on the surface ocean and the organisms in it.
9) Manage and organize laboratory experiments as part of a pair or group of peers.

Core Objectives

Students will develop critical thinking skills, communication skills, empirical and quantitative skills and teamwork throughout the semester through the following activities:

• Students demonstrate teamwork each week as they work in pairs or groups of four to make the necessary measurements for each lab

• They develop empirical and quantitative skills as they individually perform calculations to answer the problems assigned for the lab

• Students hone critical thinking skills as they use the data and calculations to draw conclusions and answer the text questions.

• Communication skills are fostered as they write up their answers for the lab reports (forms) and communicate with the peers in their group as they make the measurements necessary for the lab.
Instructor/TA Information

TA Name: XXXXXXXX
TA Telephone number: 979-XXX-XXXXXX
Email address: xxxxxxxxx@neo.tamu.edu
Office hours: (1 hour per section)
Office location: XXX, O&M Eller Building

Lab Supervisor: Dr. Shari Yvon-Lewis
TA Telephone number: 979-458-1816
Email address: syvon-lewis@ocean.tamu.edu
Office location: 412, O&M Eller Building

Textbook and/or Resource Material

REQUIRED: Experiments in Oceanography by Dr. John H. Wormuth, ONLINE EDITION, 2011. It is only available online via WebCom. Can be purchased online at http://webcom.gritxle.com/oceanography

Grading Policies

A total grade for each of the 11 labs will be composed by the following:

10% PreLab Online Assignments (completed through Webcom)
40% PostLab Online Assignments (completed through Webcom)
40% Forms and Participation
10% In class quizzes

Students will work in pairs or groups of 4 for each lab performing measurements, however all calculations and written lab reports will be done individually.

If you miss a lab without a university excuse or fail to do make-up work when allowed, you will receive a zero for that lab. Nothing will be accepted late and it is your responsibility to watch due dates for online assignments.

Tardiness:
At the beginning of each class a brief presentation will be given to inform you of any necessary procedural changes, equipment instructions or vital background information. You MUST be on time for this presentation. If you miss any part of this presentation, credit may be deducted from your participation. Whether or not you are present, you are responsible for knowing the information presented. If you are late on a day when a quiz is being administered, you will receive a zero for the quiz. If you are late, it is your responsibility to sign in on the attendance sheet or be marked as absent for the day.

Attendance policy:
If you miss a lab without documentation of a university excused absence, all associated assignments (online or forms) will be marked as zero even if completed.
University Excused Absences – http://student-rules.tamu.edu (under the “attendance” section)
NOTE: You must notify the instructor BEFORE you miss class that you will be absent or she is
under no obligation to adhere to the university approved excuse. It is your responsibility to
contact the instructor to make up the lab IF you have an excuse. You must turn in the
appropriate excuse forms to the instructor before you make up the lab. You are responsible for
getting any assignment due in that lab to the instructor before you make up the lab.

Make up labs:
If you miss a lab and have a University Approved Excuse, you will be allowed to make up the
lab. Due to the nature of the lab schedule, you will ONLY be able to make up a lab DURING
the SAME week you missed. The labs are scheduled every two hours with the first one
beginning at 8 am morning and the last one beginning at 6 pm (on Fridays the last lab begins
at noon). You may not simply attend whichever lab you choose, and must set up a makeup
time through me.

If you do not make up the lab during the same week missed, the total lab grade will be
averaged into your final class grade as a zero (no online assignments related to that lab will be
counted).

Safety:
In order to enable a safe learning environment, there are 18 cubbies available at the front of
the room. ALL personal belongs must be stowed there for the duration of all labs. This
includes cell phones, ipods, purses, book bags, etc. Since we are in a laboratory setting,
everyone must wear closed toed shoes for every meeting of this course, and food and drinks
are never to be brought into the lab. For the labs where simple chemicals (weak acid, silver
nitrate) are used, safety goggles, gloves and aprons are provided and must be used. These
are kept in the lab, so you are welcome to use them at any other time you would like. The
location of other safety equipment (fire extinguisher, broken glass container, eye wash, etc.)
found in the lab will be brought to your attention by the Teaching Assistant.

PreLab and PostLab Assignments:
All PreLab and PostLab Assignments are short, online assignments completed through the
Emanual: Experiments in Oceanography (see above under “textbook” for WebCOM website).
The PreLab assignments are to be completed AFTER reading the chapter of the Emanual and
BEFORE coming to class for that topic. The PostLab assignments are to be completed
AFTER performing the in class exercises for each topic.

Forms and Participation:
Each week while conducting your exercises you will be required to complete a form. This will
include data collected during your exercises as well as answers to questions based upon the
exercises. Participation will be lost for various reasons including, but not limited to: tardiness,
lack of attentiveness, lack of preparation, and lack of participation in group activities.

Quizzes:
In class quizzes will be administered without warning and will generally be based on the
required reading for that day, though they may contain information learned from previous labs.
# Grading Scale

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<thead>
<tr>
<th>Grade</th>
<th>Percentage Range</th>
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<tbody>
<tr>
<td>A</td>
<td>100-90%</td>
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<tr>
<td>B</td>
<td>89.99 - 80%</td>
</tr>
<tr>
<td>C</td>
<td>79.99 - 70%</td>
</tr>
<tr>
<td>D</td>
<td>69.99 - 60%</td>
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<tr>
<td>F</td>
<td>59.99% and below</td>
</tr>
</tbody>
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There will be no rounding. There will be no curve.

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## Course Topics, Calendar of Activities, Major Assignment Dates

### Dates | Topic Summary | Required Reading (WebCom)
---|---|---
8/25-8/29 | **Syllabus**  
The expectations and requirements for this course will be discussed, and students will be introduced to WebCom (required).  
**Safety:** no special Personal Protective Equipment (PPE) required. | Bathymetry |
9/1-9/5 | **Bathymetry**  
Simple box models and computers show how dynamic the seafloor surface can be.  
**Safety:** no special Personal Protective Equipment (PPE) required. | Bathymetry |
9/8-9/12 | **Isostasy and Rock Density**  
Using simple materials of various densities, the principles behind plate tectonics are revealed.  
**Safety:** no special Personal Protective Equipment (PPE) required | Isostasy and Rock Density |
9/15-9/19 | **Sedimentation**  
Deep-sea underwater sediment flows are recreated in lab using saltwater solutions with food coloring to distinguish censity.  
**Safety:** no special Personal Protective Equipment (PPE) required | Sedimentation |
9/22-9/26 | **Albedo and Solar Radiation**  
The light energy from the sun warms surface waters and is reflected by ice, but only a fraction reaches depths.  
Simple globes, tubes of water and earth surface samples provide exercises to study the sun's effects on the ocean.  
**Safety:** no special Personal Protective Equipment (PPE) required | Albedo and Solar Radiation |
9/29-10/3 | **Salinity**  
This fundamental property is measured for almost any study involving the ocean. Here the advantages and disadvantages of common methods will be reviewed.  
**Safety:** Silver Nitrate is used for a chemical titration - use caution and wear work clothes in addition to the required provided Personal Protective Equipment (PPE) | Salinity |
Density
Salinity and temperature control density, which in turn, drives the major circulation patterns in the ocean. This lab demonstrates this intrinsic physical property.
Safety: Dry ice is used – use the Personal Protective Equipment (PPE) provided.

Climate Change
10/13-10/17
Weak acids demonstrate how carbon dioxide in the air affects the organism in the ocean.
Safety: Use the Personal Protective Equipment (PPE) provided.

Waves
10/20-10/24
From tides to tsunamis, the properties and speeds of different wave types are investigated.
Safety: no special Personal Protective Equipment (PPE) required

Plankton
10/27-11/31
Although this group is small in size, almost all life in the oceans depends upon planktonic organisms. Various types will be identified by microscope, drawn or counted.
Safety: no special Personal Protective Equipment (PPE) required

Seasonality
11/3-11/7
The tilt of the earth that causes our seasons also effects the ocean. Simple statistics and color maps clarify how.
Safety: no special Personal Protective Equipment (PPE) required

Nekton/Benthos
11/10-11/14
A wide variety of species inhabit the ocean; videos and preserved samples show a fraction of them and their behaviors.
Safety: Specimens are in jars of Formalin or alcohol – be careful not to drop them - no special Personal Protective Equipment (PPE) required

11/17-11/21
Thanksgiving Break – NO LABS
11/24-11/28
Lab Finals (Section Dependent)

Americans with Disabilities Act (ADA)
The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact Disability Services, in Cain Hall, Room B118, or call 845-1637. For additional information visit http://disability.tamu.edu

Academic Integrity
For additional information please visit: http://aggiehonor.tamu.edu/

"An Aggie does not lie, cheat, or steal, or tolerate those who do."
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