GLG 140: Intro to Oceanography

Instructor: Dr. Nan Schmidt

Contact Info: Office hours: Tues/Thurs after or before class or by appointment.
nan.schmidt@pima.edu, 206-7140, or leave message at Math & Science Office, 206-6031, 2nd floor of the Tortolita Building. Website address: http://dtc.pima.edu/~nschmidt


GLG 140 Intro to Oceanography Lab Manual and Notes

Course Description: Survey of geological, chemical, physical, and biological aspects of the ocean, with emphasis on marine ecology.

Instructional Delivery: One connected lecture and lab session per week. Most sessions will contain both lecture and lab activities; lab is designed to support or teach content—it is not a separate entity. Exams will cover both lecture and lab content.

Attendance: You are expected to come to class on time and stay for the entire class period.

Acceptable Behavior: You are expected to abide by the College's Student Rights and Responsibilities (http://www.pima.edu/~coadmissions/studresp.htm). Breaches in scholastic ethic (e.g. cheating and plagiarism [see attachment]) will be dealt with severely. You are expected to do your own work, be honest, and not be disruptive or disrespectful of others.

Please be courteous in class; turn off cellular phones, beepers, headphones, etc.

Evaluation: In order to determine whether this course is meeting its objectives, a variety of classroom assessment techniques will be used. These may include but are not limited to multiple choice, short answer, or essay tests regarding your comprehension of the material presented in class, group or individual oral reports, discussions, brainstorming, demonstrations of laboratory techniques, and group or individual written reports.

Because this course fulfills a general education requirement, I also will use assessment techniques to determine whether your skills have improved in at least one of the following areas: oral and written communication, critical inquiry, or global awareness.

Grades: Grades are calculated on the standard scale (A=90-100%, B=80-89%; C=70-79%; D=60-69%; F=<60%). A Grade Tracking Sheet is provided.

Posting of Grades: Grades will be posted anonymously using a personal identification number (PIN) supplied by the student. Posting grades allows students to track their grade throughout the semester (and to double-check my bookkeeping). If you do not wish your grades to be posted in this manner, please inform the instructor.

Lab Policies: In keeping with state regulations for laboratory safety, you must wear approved safety goggles when it is called for in your laboratory (we will provide these), you must keep the lab space free of food and drinks, and you must dispose of all sharp
instruments, glassware, and chemicals in the prescribed manner. Only registered students are allowed to attend classes.

**Make-up and Late Assignment Policy:** Tests are given in the first 30 minutes of class and cannot be made up. Unless otherwise stated, late assignments are penalized 25% of the grade and only will be accepted **within one week past the due date** of the assignment.

**Americans with Disabilities Act:** Pima Community College District strives to comply with the provisions of Title III of the Americans with Disabilities Act of 1990 and Section 504 of the Rehabilitation Act of 1973. Students with disabilities requiring special accommodations are strongly encouraged to notify the instructor at the beginning of the semester so that appropriate verification and identification of reasonable accommodations may be made in a timely manner. Accommodations cannot be made without verification of need. One or more field trips are planned tentatively during the course. A reasonable accommodation will be provided unless it creates an undue hardship or is not possible. Total participation may be denied for education and safety reasons, and an alternative activity will be provided.

**Official Withdrawal (W):** November 5 is the last day to change to "Audit" or to withdraw with a grade of "W." Students who fail to attend 3 consecutive classes without notifying the instructor may be withdrawn.

**Special Withdrawal (Y):** Y grades may be given at the instructor's discretion following a written request by the student on the approved form. I generally do not give out Y grades. A Y grade may have no immediate effect on your grade point average, but may affect 1) your financial aid and/or veteran's certification status and 2) your admission into limited enrollment programs at other institutions.

**Incomplete (I):** Incompletes are given at the instructor's discretion only if the student has averaged a "C" grade or better for the course and has completed at least 3/4ths of the coursework.

**Course Objectives:**

Upon completion of the course, the student will be able to do the following:

1. Discuss the history and significance of oceanography.
2. Describe how scientists study the oceans.
3. Discuss the relationship of plate tectonic theory to ocean basins.
4. Compare and contrast marine sediments, their origins, and their relationship to ocean basins.
5. Discuss the roles of salinity, density, and dissolved gases in the ocean.
6. Describe and contrast wind-driven ocean currents and thermohaline circulation.
7. Discuss the types and motions of waves in the ocean.
8. Identify the models of and types of tides on Earth.
9. Compare and contrast nearshore environments and human impacts on them.
10. Identify the basic biological habitats in the ocean, their associated biota, and their role in ocean productivity.
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<thead>
<tr>
<th>DATE</th>
<th>TOPIC</th>
<th>READING ASSIGNMENTS</th>
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<tbody>
<tr>
<td>Tues. Aug. 24</td>
<td>Course Introduction, History, Earth Structure, Physiography</td>
<td>Ch 1, 2</td>
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<td>Of Ocean Floor, Continents vs. Oceans</td>
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<td>Thur. Aug. 26</td>
<td>Test 1, Lab 1: Scientific Method</td>
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<td>Tues. Aug. 30</td>
<td>Continental Drift, Sea-Floor Spreading, Plate Tectonics</td>
<td>Ch 3</td>
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<td>Thur. Sep. 2</td>
<td>Test 2, Lab 2: Sea-Floor Mapping</td>
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<tr>
<td>Tues. Sep. 7</td>
<td>Sediments, Sedimentation, Water, Salinity, Temperature, Density, Gases</td>
<td>Ch 4, 5</td>
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<td>Thur. Sep. 9</td>
<td>Test 3, Lab 3: Sediment Analysis, part 1</td>
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<td>Tues. Sep. 14</td>
<td>Atmospheric Processes, Surface Currents, Deep Ocean Circ.</td>
<td>Ch 6</td>
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<td>Thur. Sep. 16</td>
<td>Test 4, Lab 4: Sediment Analysis, part 2, Controversy Report Question due</td>
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<td>Tues. Sep. 21</td>
<td>Waves, Tides</td>
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<td>Thur. Sep. 23</td>
<td>Test 5, Lab 5: Where am I, Again? Ecobeaker: Sick Fish</td>
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<td>Tues. Sep. 28</td>
<td>Ocean Habitats, Kingdoms of Life, Ecology, Adaptive Strategies</td>
<td>Ch 9</td>
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<td>Thur. Sep. 30</td>
<td>Test 6, Lab 6: Survey of Organisms</td>
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<td>Tues. Oct. 5</td>
<td>Food Webs, Trophic Dynamics, Productivity, Upwelling</td>
<td>Ch 10</td>
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<td>Thur. Oct. 7</td>
<td>Test 7, Lab 7: Food Webs and Trophic Dynamics, Ecobeaker: Islands and Natural Selection, Controversy Report due, Jeopardy Questions due</td>
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<td>Tues. Oct. 12</td>
<td>Coasts—Water Movement, Beaches, Dunes, Barrier Islands</td>
<td>Ch 7, 8</td>
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<td>Cliffs, Deltas, People and Coasts</td>
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<td>Thur. Oct. 14</td>
<td>Test 8, Lab 8: Jeopardy</td>
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<td>Tues. Oct. 19</td>
<td>Coastal Habitats—Estuaries, Lagoons, Salt Marshes, Mangroves, Coral Reefs</td>
<td>Ch 12</td>
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<td>Thur. Oct. 21</td>
<td>Test 9, Lab 9: Ecobeaker: Island Biogeography, Revised Controversy Report due</td>
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<td>Tues. Oct. 26</td>
<td>Ocean Habitats—Continental Shelf, Open Ocean, Deep Sea</td>
<td>Ch 13</td>
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<td>Thur. Oct. 28</td>
<td>Test 10, Lab 10: Ecobeaker: Oil Spills</td>
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<td>Tues. Nov. 2</td>
<td>Resources, Law of the Sea, Minerals, Living Resources</td>
<td>Ch 14</td>
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<td>Thur. Nov. 4</td>
<td>Test 11, Lab 11: Habitat Lab, Part 1, Presentation Outline due</td>
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<td>Tues. Nov. 9</td>
<td>Humans and Ocean—Pollution, Overfishing, Climate Change</td>
<td>Ch 15</td>
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<td>Thur. Nov. 11</td>
<td>NO CLASS. VETERANS DAY HOLIDAY</td>
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<td>Thur. Nov 11-Sun Nov 14</td>
<td>Optional CEDO/Pinacates Fieldtrip</td>
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<td>Tues. Nov. 16</td>
<td>Test 12, Lab 12: Habitat Lab, Part 2</td>
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<td>Thur. Nov. 18</td>
<td>Finish Habitat Lab, if necessary, work on Final Presentations,</td>
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<td>Tues. Nov. 23</td>
<td>Lab 13: Fisheries</td>
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<td>Thur. Nov. 25</td>
<td>NO CLASS. THANKSGIVING</td>
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<td>Tues. Nov. 29</td>
<td>Final Presentations</td>
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<td>Thur. Dec. 2</td>
<td>Final Presentations, continued</td>
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<td>Tues. Dec. 7</td>
<td>Review for Optional Comprehensive Final</td>
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<td>Thur. Dec. 9</td>
<td>Optional Comprehensive Final</td>
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Introduction to Oceanography

Fall 2004

Tests/Assignments: 11 (out of 12 offered) @ 40 pts each = 440 pts.

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<th>Test 1</th>
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<th>Test 9</th>
<th>Test 10</th>
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<th>Test 12</th>
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Laboratories and other work: 157 pts.

Laboratories = 120 pts.

12 (out of 13 offered) @ 10 pts. = 120 pts.

- Scientific Method
- Sea-Floor Mapping
- Sediment Analysis Part 1
- Sediment Analysis Part 2
- Where am I?
- Survey of Invertebrates
- Ecobeaeker: Sick Fish and Islands and Natural Selection
- Food Webs and Trophic Dynamics
- Jeopardy Game
- Ecobeaeker: Island Biogeography and Oil Spills
- Habitat Lab Part 1
- Habitat Lab Part 2
- Fisheries Lab & Ecobeaeker: Go Fish

Controversy Report and Presentation = 37 pts

- Controversy Report (20 pts)
- Presentation Outline (2 pts)
- Presentation (15 pts):

Optional Comprehensive Final Exam

Any points above 70 on the final will be added to your total exam points

Final Grade:

Total points earned ___/597 total points possible = ___ * 100 = _____%
HOW TO CITE SOURCES

See Plagiarism section of syllabus for importance of citing sources

CITING SOURCES IN THE BODY OF PAPER

a) Jones and Smith (2001) found that research is fun.
b) Research is fun (Smith and Jones 2001). Notice: the period goes after the parentheses.
c) "Man-eating plants are a significant global problem" (Smith and Jones 2001, p. 64). Notice: the period goes after the parentheses and the citation includes the page number of the quoted material.

CITING SOURCES IN LITERATURE CITED SECTION OF A PAPER (ALPHABETIZE!).

Book format:

Author lastname, First initial. Middle initial. Year published. Title of book. Publisher, City.


Journal article format (with volume numbers)

Author lastname, First initial. Middle initial. Year published. Title of article. Journal Name volume number:start page-end page number.


Magazine article format (with dates)

Author lastname, First initial. Middle initial. Year published. Title of article. Magazine Name date of publication:start page-end page number.


Newspaper article format:

Author lastname, First initial. Middle initial. Year published. Title of article. Newspaper. Date:Section page.

Internet Format—for a website

Author lastname, First initial. Middle initial. Date last updated. Title of web page. Accessed at [internet address (e.g., http://www... .)] on [date accessed].

Note: often the “author” will simply be the name of the organization.

Internet Format—for an e-magazine, journal, or newspaper article

Author lastname, First initial. Middle initial. Year published. Title of article. Journal Name volume number. Accessed at [internet address (e.g., http://www... .)] on [date accessed].


Author lastname, First initial. Middle initial. Year published. Title of article. Newspaper. Date:Section page. Accessed at [internet address (e.g., http://www... .)] on [date accessed].


Interview Format

Author lastname, First initial. Middle initial. Individual’s job position/title. Type of interview (face-to-face, telephone, letter, etc.) on date interview took place.

HOW TO FIND INFORMATION

a) Personal Observation.
b) Internet (access in academic computing center, libraries, and elsewhere).
c) Literature from the library.
   1. types: Books, Periodicals (especially peer-reviewed), Government Documents
   2. How to find pertinent references; best to look at all of the following:
      a. Card catalog (books) and Computer (very incomplete).
      b. Indices for Periodicals, General Science Index (one of the best for science), Biological Abstracts (very complete for biology), Reader’s Guide to Periodical Literature (mostly layperson magazines), and Government Documents Index.
      c. Use Science Citation Index to find references that have cited the reference that you have cited.

PLAGIARISM

Plagiarism is the use of someone else’s writing or ideas as your own and is a criminal act. J.C. Hodges and M.E. Whitten, in the 8th edition (1977, p. 372) of the Harbrace College Handbook (Harcourt Brace Jovanovich, Inc.), describe plagiarism in the following manner:

“If you fail to acknowledge borrowed material, then you are plagiarizing. Plagiarism is literary theft. When you copy the words of another, be sure to put those words inside quotation marks and to acknowledge the source with a footnote [or, in our case, a citation]. When you paraphrase the words of another, use your own words and your own sentence structure, and be sure to give a footnote [citation] citing the source of the idea. A plagiarist often merely changes a few words or rearranges the words in the source. As you take notes and as you write your paper, be especially careful to avoid plagiarism.”

Unless you are quoting directly, avoid entirely the sentence patterns of the source.”

I want to emphasize the major points given in the above quotes:

TYPE 1 PLAGIARISM: NOT USING QUOTATION MARKS

When you someone else’s words, always put them in quotation marks and cite the source in the body of the text and in the literature cited sections.
If you include a quote, you must use the exact words of the author or it is a misquote.
Use quotations only when it is absolutely essential for the read to know exactly what that particular person said word for word.
TYPE 2 PLAGIARISM: NOT CITING THE SOURCE OF INFORMATION

All information/ideas that are not part of general knowledge must be cited (in the body of the text and in the literature cited sections) even if you used your own words.
This is taken seriously in science (scientists are always skeptical of information).

TYPE 3 PLAGIARISM: PARAPHRASING IS TOO SIMILAR TO SOURCE

I want you to read your sources of information, synthesize the material in your head, and then write what you know in your own unique way. Don’t worry about having to use technical words; remember, I’ve asked you to write as if you are writing to your classmates. You and your classmates must know what everything means in your report.
It is plagiarism to use someone else’s sequence of sentences and just change a few words or their position in each sentence.
If you find yourself with the source of information in one hand while you are writing your report with your other hand, then there is a good chance you are plagiarizing.