

Biological Oceanography Sonoma State University

**Biology 312
Spring 2006**

Lecture: Tuesdays & Thursdays: 8:00 – 9:15 am; Salazar 2019

Instructor: Karina Nielsen

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Office Hours: T 2:30-3:30 & W 11:00-12:00; sign-up sheet in Biology Office

Prerequisites: BIOL 110 or 115 or 121/122.

Course Description:

This course provides an overview of the essentials of biological oceanography. We will cover some topics in geological, chemical and physical oceanography as they relate to understanding life in the ocean. We will explore the extraordinary diversity of marine life including plankton, algae, plants and animals. We will also discuss how organisms interact with their environment and each other. We'll conclude by focusing on how humans interact with and impact the ocean environment. Through required student contributions, we'll also look at how the ocean is represented in art, music, literature and current events.

Required Text:

Oceanography: An Invitation to Marine Science (5th Edition), by Tom Garrison.

Including a WebCT access code

Assignments

Points	Assignment
50	Exams – 2 midterms & 1 final (not cumulative)
20	Ocean Research Assignment
15	WebCT Homework
15	Quick-Writes (in class)

Grading: Final grades will be based on the percentage of total points (100) earned on the assignments listed below. Letter-grade ranges will be as follows: A = 90-100%; B = 80-89%; C = 70-79%; D = 60-69%; and F = 59% or below.

I take this opportunity to remind my students that they share responsibility with the instructor for their own learning. Please ask questions when concepts, explanations or examples do not make sense. I am available during office hours to meet with you individually or in small groups. Sign-up sheet is available in the Biology Office.

Expectations for out of class work: From the SSU catalogue: “A minimum of two hours preparation for each hour of regular class work should be expected; in upper-division and graduate-level courses, additional time may be required.”

Attendance: Regular attendance at lecture will help you to learn the material we’ll cover in this class. The exams will emphasize concepts and topics we focus on during lecture.

From the SSU catalogue: “Students should not miss classes except for valid reasons, such as illness, accidents, or participation in officially approved University activities. When students are absent from classes, it is their responsibility to inform the instructor of the reason for absence and to arrange to make up missed assignments and class work. Students should be cautioned that even though absences may be for valid reasons, such absences can impair performance and result in a lower grade.”

Make-up & Exam Policy: Exams can only be made-up for *documented* circumstances beyond the student’s control (e.g., illness, death in the family). If you have a legitimate emergency, please notify me as soon as possible by email or phone.

During exams students: 1) are not permitted to use cell phones, ipods or other electronic devices; 2) may not have any books or papers out; and 3) are not permitted to leave and re-enter the room without the permission of the instructor. Once the first person has completed their exam and left the room no additional exams will be given out.

Learning Accommodations: If you are a student with a disability and you think you may require accommodations you must register with the campus office of Disabled Student Services, located in Salazar Hall, room 1049, phone 664-2677. DSS will provide you with written confirmation of your verified disability and authorize recommended accommodations. This authorization must be presented to the instructor before any accommodations can be made.

Academic dishonesty will not be tolerated. **SSU Policy on Cheating and Plagiarism:** (<http://www.sonoma.edu/uaffairs/policies/cheatingpolicy.htm>)

It is the policy of Sonoma State University to be pro-active in dealing with issues of cheating and plagiarism. Faculty are encouraged to discuss with students academic ethics and the formulation of one’s own intellectual material. It is also the policy of Sonoma State University to impose sanctions on students who cheat or plagiarize. Students are expected to be honest in meeting the requirements of the courses in which they are enrolled. Cheating or plagiarism is dishonest, undermines the necessary trust upon which relations between students and faculty are based, and is unacceptable conduct. Students who engage in cheating or plagiarism will be subject to academic sanctions, including a lowered or failing grade in a course; and the possibility of an additional administrative sanction, including probation, suspension, or expulsion. Students suspected or accused of cheating will be dealt with in accordance with Sonoma State University policy.

Lecture Schedule (subject to modification)

Date			Topic	Chapter
31-Jan	T	1	Course Introduction	
2-Feb	Th		Knowing the Ocean World	1
7-Feb	T	2	Origins	2
9-Feb	Th		Water and Ocean Structure	6
14-Feb	T	3	Water and Ocean Structure	6
16-Feb	Th		Seawater Chemistry	7
21-Feb	T	4	Seawater Chemistry	7
23-Feb	Th		Circulation of the Atmosphere	8
28-Feb	T	5	Circulation of the Atmosphere and Ocean	8/9
2-Mar	Th		Circulation of the Ocean	9
7-Mar	T	6	Mid Term 1	
9-Mar	Th		Waves	10
14-Mar	T	7	Waves	10
16-Mar	Th		Tides	11
21-Mar	T	8	Tides	11
23-Mar	Th		Life in the Ocean	13
28-Mar	T	9	Life in the Ocean	13
30-Mar	Th		Plankton, Algae and Plants	14
4-Apr	T	10	Plankton, Algae and Plants	14
6-Apr	Th		Marine Animals	15
11-Apr	T	11	Attend special guest lecture in lieu of class today	
13-Apr	Th		Mid Term 2	
			SPRING BREAK	
25-Apr	T	12	Marine Animals	15
27-Apr	Th		Marine Communities	16
2-May	T	13	Marine Communities	16
4-May	Th		Marine Resources	17
9-May	T	14	Marine Resources	17
11-May	Th		Environmental Concerns	18
16-May	T	15	Environmental Concerns	18
18-May	Th		Catch – up Day	
23-May	T	16	Final Exam	

Ocean Research Assignment

Most of the best scientists I know are multi-talented people who not only enjoy art and music, among other things, but often are also artists, musicians and writers in their spare time. I started my undergraduate degree studying photography and film making, and grew up in a household supported by my mother's paintings. Although people may not generally appreciate that science is a creative endeavor, I would argue that great science is fueled by creative inspiration. With that in mind, I've designed this assignment so that you may begin to explore how the ocean and the creatures that live there have inspired others in spheres that occasionally intersect, but do not necessarily encompass science.

Assignment Description: Find a work of art, a piece of music, a newspaper article and a piece of literature that somehow relates to the ocean. I give you wide latitude to interpret what relating to the ocean means. Attend a library workshop to help you search for appropriate examples. Then write a reflection on why you chose the particular examples you did. You will turn the assignment in by emailing it to me **from within the WebCT email link**. *Do not send it to my university email address as it will get lost among the 50-100+ emails I receive every day.* As everything is to be in digital form you will be able to attach all the items to the email as a single package.

- 1) Attend a library workshop, "Finding Books" OR "Finding Articles" for help with how to find newspaper articles, books, etc. and get an attendance record to attach to your assignment. See this page for schedule of drop-in workshops:
<http://library.sonoma.edu/research/workshops.html>
- 2) Artwork (in digital format). A painting, photograph (but not a "Hallmark" type image), sculptures, etc. If you are an artist, you may submit your own artwork, but please turn in a digital photo of the work, not the original.
- 3) Music (digital format). Any genre or style is acceptable. If you are a musician you may submit your own work.
- 4) News (digital format). Any newspaper or magazine article published within the last 6 months.
- 5) Literature (digital format – type up your passage or poem). Fiction, non-fiction and poetry are all acceptable. If it is a book, pick a passage of approximately 1-2 paragraphs that you especially like. If you are a writer you may share your own work.
- 6) Your written reflection should address all of the following points:
 - How your examples relate to the ocean
 - Why you chose the particular examples you're submitting
 - What scientific question (s) you might be inclined or inspired to ask as a result of reflecting on each of the examples (1 question per example minimum).

Format & length: Your reflection should be 1-2 pages long (10 or 12 point font, double spaced is appropriate) and include your name, the date you turn it in and citation/source information for your article, artwork, etc. If in doubt about citation information to include or formatting please consult this web page: <http://libweb.sonoma.edu/assistance/citestyles.html> and the examples provided below.

- 7) Turn the assignment in by emailing it to me **from within the WebCT email link**. *Do not send it to my university email address as it will get lost among the 50-100+ emails I receive every day.* As everything is to be in digital form you will be able to attach all the items to the email as a single package. **Assignments turned in any other way or to any other location will not receive any credit.**
- 8) Due dates & points: There are flexible/rolling due dates for this assignment with extra credit being awarded the sooner you turn it in. **Assignments turned in after May 1, 2006 will not receive any credit.**

Failure to comply with these instructions will result in a loss of points. Follow these instructions carefully!!

Due Dates & Points:

February	30 (+10 points!)
March	25 (+ 5 points!)
1 April – 14 April	23 (+ 3 points!)
15 April – 1 May	20 (full credit only/no extra points)
May 2 – and on	0 (past due – no credit, no exceptions)

Example of how to format your assignment:

Your Name Here
Ocean Research Assignment
Biology 312
February 22, 2005

Your statement goes here.

Works Cited:Artwork:

The Wave. František Kupka. 1903. Oil on canvas, 100 x 145 cm.
Bouillon, Jean Paul. *Art Nouveau 1870-191*. New York: Skira/Rizzoli, 1985.

News:

Dillmon, T. *Abundance of Fish on Area Reefs Delights, Puzzles Divers*. Newport News-Times, 17 August 2002: 1

Literature:

Steinbeck, John. 1941. *The Log from the Sea of Cortez*. Penguin Books, NY.

Music:

Lennon, John & Paul McCartney. "Octopus's Garden." Abbey Road. Apple Records, 1969.

If the composer and performer are different:

Guthrie, Woody. Pete Seeger Sings Woody Guthrie. Perf. Pete Seeger. Audiocassette. Folkways, 1968.

If you are finding sources on the internet please cite them appropriately. For example, a graphic from a web page would be cited like this:

Zhou ZH. A-capsid of Herpes Simplex Virus I, as solved by cryo-electron microscopy and image reconstruction. In: Garry Lab. Big picture book of viruses. Available from: http://www.virology.net/Big_Virology/BVDNAherpes.html#alpha via the INTERNET. Accessed 2001 Aug 21.

The library has a web page with additional citation formatting information that may also be helpful: <http://library.sonoma.edu/research/citationstyles.html>

Any standard scholarly citation format that includes all the appropriate source information is OK for this assignment.