

**Introduction to Oceanography
GEOL 108 or ENV S 108
Fall 2019**

Instructor: Nina Whitney, PhD graduate student (Department of Geological and Atmospheric Sciences and Environmental Science)

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Office Hours: By appointment. I am more than happy to meet with you outside of class and am generally free except when this class meets. Please either email me or see me in class to set up an appointment.

Lecture Assistant: Dana Mineart, Senior (Geology)

Class meets: Tuesdays & Thursdays from 2:10 – 3:25 pm in E0164 Lagomarcino Hall

Required Textbook: Oceanography and Marine Biology: An Introduction to Marine Sciences by David W. Townsend

Course Objectives: Through this course, students will develop an understanding of major concepts and fundamental processes in oceanography. These include the formation of the oceans, ocean composition, and ocean circulation. Students will also gain an understanding and appreciation of the interaction between humans and the ocean, including through the natural resources contained within the ocean. Students will learn about the major changes occurring in today's oceans related to human influences. Through the study of the oceans, students will develop skills in scientific reasoning and methods.

Why learn about Oceanography? The oceans cover over 70% of Earth's surface. In part, the world oceans make planet Earth livable. The oceans are intricately linked to global climate, global commerce, and human activity. Approximately 40% of the world's population lives within 100 kilometers of the coast. We currently know more about other aspects of our solar system than we do about the world oceans. Oceanography is one of the most interdisciplinary sciences, incorporating chemistry, physics, biology, and geology.

Canvas: The syllabus, course calendar, grade book, updates, announcements, lecture assignments and assigned readings (found under Modules) will be available through Canvas. Lecture PowerPoint presentations will be posted under the relevant module the morning of class in case you would like to print out the slides we will be covering in class. All students registered in the course will automatically be enrolled into Canvas. Please see me if you do not know how to access Canvas.

Grading: The final course grade will be determined as follows:

Assignments	Weight
Exams (best two of three)	40%
Final exam (50% part cumulative; 50% from the last six classes)	20%
In-class assignments	25%
Weekly Canvas assignments	15%
Total	100%

Grading Scheme (*all number grades are rounded up at 0.5%. Example: 89.6% = 90% = A-)

Number grade	Letter grade	GPA
93 or higher	A	4
90 to 92	A-	3.67
87 to 89	B+	3.33
83 to 86	B	3
80 to 82	B-	2.67
77 to 79	C+	2.33
73 to 76	C	2
70 to 72	C-	1.67
67 to 69	D+	1.33
60 to 66	D	1
59 or below	F	0

In-class assignments: There will be in-class activities every class (including during Dead Week but excluding the first day of class). These will help me measure your understanding in addition to exams. Generally, you will have the option to work in small groups (2-4; please no more than 4 in a group) to complete these assignments/tasks. While you are encouraged to work as a group, please turn in individual assignments with your own work. Please make sure you neatly put your name (Last name, First name) on each assignment in the upper left-hand corner. If we can't read your name, you will not get the credit for the assignment. You will receive 100% on an assignment if you complete it and turn it in during the class period in which it is assigned. If you do not turn in the assignment during the class period in which it is assigned, you will be given a 0. You may not turn this assignment in late as in addition to testing your knowledge of a topic, these in-class assignments also help me to keep track of attendance. You may miss up to 4 of the in-class assignments and still get full credit for this portion of your grade. So if you miss one class, don't worry! If you miss many classes, you should worry as these assignments account for 25% of your final grade (see excused absences below). **Note:** You will not get these back, so please do not take notes on this piece of paper. It is a good idea to take notes on these assignments elsewhere as in-class assignments are fair game for exams. **Excused Absences:** I understand that from time to time, life happens and students need to miss class. As stated above, you are allowed to miss 4 classes without it affecting your in-class assignment grade. However, these absences **include**

excused absences for athletics, illness, family emergencies etc. If you have more than 4 **excused** absences, they will not count against your grade. If, however, you have some excused absences as well as some unexcused absences, those unexcused absences will count towards your grade (if the total of excused and unexcused absences is more than 4). I will determine on a case by case basis what counts as an excused absence so if you are going to miss a class, please email me beforehand (or as soon as possible afterwards in case of emergencies) or see me in a previous class to discuss your situation. In-class assignments will start the second day of class. Again, you cannot turn in in-class assignments late.

Lecture Assignments: There will be two short lecture assignments every week on Canvas, one for each class meeting period (except for the first week, exam weeks, Thanksgiving break and Dead Week; **posted Monday morning, due by Sunday at 11:59 PM**). These assignments will cover material on the readings assigned for that week. Each assignment will be worth 50 points. Your two lowest grades will be dropped. Questions will be multiple choice, fill in the blank, matching and/or short answer. You may also be asked to turn in activities started in class. The purpose of these quizzes is to encourage you to read the assigned reading and engage with the material as well as to make sure you are understanding the material being presented in class. I highly encourage you to do these assignments as soon as possible after the lecture on which they are based. You do not have to finish these assignments in one sitting so if you are confused about something asked in the assignment, you can ask me at the beginning of the following class or come to my office to discuss it. All questions will be based on what is stated in the readings and lectures and are open book/open notes. You may use the internet but I would highly discourage it as the internet is not always correct. If you do use the internet, please cite your source. You may work with others on these assignments but please turn in your own work. Plagiarism of any kind (either from other classmates, from the textbook, or from other sources) will not be tolerated (see below for my policies on academic dishonesty). Note: These questions may appear again on the mid-term or final exams.

Exams: Exams must be taken in a testing center on campus between Monday and Wednesday on the week that they are assigned. We will not have regularly scheduled class on that Tuesday so you will have that entire time period (2:10pm-3:25pm) to take the exam. However, you will be able to take the exam at any point during those three days while the testing center is open. You will have a maximum of 1 hour and 15 minutes to finish the exam. For locations and hours of the testing center, please see: <https://www.testcenter.iastate.edu/>. Note that the testing center doors will lock an half hour before the testing center closes and you will not be able to get in after that so plan accordingly.

There will be three exams in the course. Your best 2 of 3 will count toward your exam score. Exams will consist of 40 multiple choice questions and 4 essay questions (there will be 5 essay questions, out of which you can pick 4 or do all 5 for a maximum of 3 extra credit points). Multiple choice questions will be worth 2 points each. Essay questions will be worth 5 points each. If you are unable to take the exam at the designated

time, please come and talk to me **before** the exam is given. If I do not hear from you until after the exam is due, you will get a 0 for that exam.

Obviously the downside of taking the exam in a testing center is that you cannot ask me questions if you have them as you are taking the exam. If you cannot figure out what I am asking in a question, please email me directly after taking the exam and explain your confusion. I may ask you to meet with me to discuss the question and may award you additional points if I feel that the question warranted further explanation.

Final Exam: The final exam can be taken at any point during finals week (December 16-19) during open hours at one of the ISU testing center locations. The final exam will have the same format as regular exams: 40 multiple choice questions and 5 (pick 4) short answer questions. Half of the questions will cover material we have covered since the 3rd exam and half of the questions will be cumulative from material we have covered throughout the course.

Review Sessions: There will be a review sessions before each exam. Time and location will be announced and posted on Canvas the week before the exam. If you are not able to make one of these review sessions, feel free to stop by during office hours or make an individual appointment with me so that your questions can be answered before the exam.

Course Schedule: Specific textbook pages assigned for each class period can be found on Canvas under Modules.

Week	Day	Date	Topic	Reading
Week 1	Tues	8/27	Intro	Ch. 1 (optional)
	Thurs	8/29	Origins: Earth and Ocean	Ch. 2
Week 2	Tues	9/03	Earth's Structure	Ch. 2
	Thurs	9/05	The Ocean Floor: Continental Drift	Ch. 3
Week 3	Tues	9/10	The Ocean Floor: Tectonic Boundaries	Ch. 3
	Thurs	9/12	Tectonics and the Oceans Activity	Ch. 3
Week 4	Tues	9/17	Exam 1 (Chapters 2 and 3)	
	Thurs	9/19	Activity	
Week 5	Tues	9/24	Water Properties	Ch. 4
	Thurs	9/26	Seawater Properties	Ch. 4
Week 6	Tues	10/01	Atmospheric Circulation	Ch. 5
	Thurs	10/03	Atmospheric Circulation and Intro to Ocean Circulation	Ch. 5

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Week 7	Tues	10/08	Ocean Circulation cont'd	Ch. 5
	Thurs	10/10	Ocean Circulation Activity	Ch. 5
Week 8	Tues	10/15	Exam 2 (Chapters 4 and 5)	
	Thurs	10/17	Activity	
Week 9	Tues	10/22	Waves	Ch. 6
	Thurs	10/24	Tides	Ch. 6
Week 10	Tues	10/29	Life in the Sea	Ch. 7
	Thurs	10/31	Marine Life	Ch. 8 and 9
Week 11 Nina is gone; Dr. Al Wanamaker and Diana Thatcher will lecture	Tues	11/05	Marine Environments	Ch. 12
	Thurs	11/07	Phytoplankton Bloom Activity	Ch. 7
Week 12	Tues	11/12	Exam 3 (Chapters 6, 7, 8, 9, and 12)	
	Thurs	11/14	Activity	
Week 13	Tues	11/19	Fish	Ch. 11
	Thurs	11/21	Fisheries and Aquaculture	Ch. 14
Week 14	Tues	11/26	Thanksgiving Break (no class)	
	Thurs	11/28	Happy Thanksgiving! (no class)	
Week 15	Tues	12/03	Oceans, Climate and Climate Change	Ch. 15
	Thurs	12/05	Oceans, Climate and Climate Change Activity	Ch. 15 and assigned reading
Week 16	Tues	12/10	Human Impacts: Marine Pollution	Ch. 15 and assigned reading
	Thurs	12/12	Final Exam Review	

Statement of Inclusivity: Diversity of all kinds is welcomed and encouraged in this course. Learning and understanding are greatly enhanced when each of us brings our own experiences, shaped by our own diversity, to course discussions and assignments. While I try to draw on a range of perspectives in my teachings, I am limited to some extent by my own personal experiences. I highly encourage you to speak up in class and lend new and diverse perspectives where appropriate. I will strive to make this a safe and inclusive place of learning. Please let me know if there is anything I can do to make you feel more comfortable or included in this course.

For students with learning and/or physical disabilities, please let me know how I can best accommodate your needs in this course. Iowa State University is committed to assuring

that all educational activities are free from discrimination and harassment based on disability status. All students requesting accommodations are required to meet with staff in Student Disability Resources (SDR) to establish eligibility. A Student Academic Accommodation Request (SAAR) form will be provided to eligible students. The provision of reasonable accommodations in this course will be arranged after timely delivery of the SAAR form to the instructor. Students are encouraged to deliver completed SAAR forms as early in the semester as possible. SDR, a unit in the Dean of Students Office, is located in room 1076, Student Services Building or online at www.dso.iastate.edu/dr/. Contact SDR by e-mail at disabilityresources@iastate.edu or by phone at 515-294-7220 for additional information.

Academic Honesty: Cheating (including plagiarism) of any kind will not be tolerated. Given the ease of the Google search engine, it is very easy for me to quickly discover whether you have plagiarized others work. If I catch you cheating once, I will ask you to meet with me. If I catch you cheating a second time, I will report you to the Dean of Students.