Biol/Chem/GSCI 288: Oceanography, Syllabus
SUNY Geneseo
Fall 2019
MWF 9:30-10:20, ISC 136
August 20 2019, Version 1

Instructor: Logan Peoples
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Office hours: Monday, Wednesday, Friday 12:00-1:00 PM or by appointment

Course Description and Objectives

This course broadly focuses on the biological, chemical, and physical aspects of the ocean and its systems. By the end of the course students will be able to explain the patterns and drivers of circulation in the ocean. Topics will include seawater properties, water mass formation and identification, large-scale processes such as El Niño-Southern Oscillation and climate change, biological diversity, and using oceanographic observations to evaluate hypotheses.

Course Materials

Course material will largely be made available through lecture slides, notes, and scientific papers on Canvas. Supplemental reading can be found in the textbooks *Introduction to Physical Oceanography* by Robert H. Stewart and *Ocean Circulation* by Angela Colling.

Grading

Activities	In class & homework, 6x	30%
Participation	Labs, discussions, topic of interest	10%
Mid-Term	Friday, October 11	20%
Poster Presentation	Monday, December 9	20%
Final Exam	Monday, December 16	20%

Course Policies

Attendance is expected. Many of the class periods will be in-class laboratory exercises. Late assignments will be accepted only with extenuating circumstances and on a case-by-case basis. If you have an emergency or a scheduling conflict please contact me as soon as possible to discuss.

The course will make use of computers almost every week. If you do not have access to a functioning laptop computer that you can bring to class, please let the instructor know as soon as possible so we can make alternative accommodations. For assistance with your computer or mobile device, visit the CIT HelpDesk in Milne Library. CIT provides self help guides on a range of computer issues, including access to the campus network, Canvas, printing, software guides, and other resources. The CIT Self Help Guides at wiki.geneseo.edu/display/cit/CIT+Self+Help can be helpful in finding quick solutions to basic technology issues.

Plagiarism & Academic Honesty

Because of the nature of scientific exploration and the layout of the course, students are expected to work together when in class and can discuss ideas and topics. However, each student must submit their own original work.

Academic dishonesty includes cheating, knowingly providing false information, plagiarizing, and any other form of academic misrepresentation. College policies and procedures regarding academic dishonesty are available at www.geneseo.edu/handbook/academic-dishonesty-policy. Milne Library offers frequent workshops to help students understand how to paraphrase, quote, and cite outside sources properly. These sessions are meant to educate about the importance of using original ideas and language, and how to incorporate paraphrases and quotes into writing. The complete list of library workshops can be found at www.geneseo.edu/library/library-workshops.

Bias-Related Incidents

SUNY Geneseo strives to provide a space where everyone feels welcome to learn and grow in their identities as well as in their role as students, faculty, and staff. If in the unfortunate instance you experience an incident of bias, we encourage you to reach out to the Chief Diversity Officer (routenberg@geneseo.edu) and/or our University Police Department. In trying to create an environment that facilitates growth through diverse thoughts and ideas, reporting incidents of bias - including threats, vandalism, and microaggressive behaviors - can help bring a better understanding of our campus climate as well as provide opportunities for learning and restoring harm.

Disability Accommodations

SUNY Geneseo will make reasonable accommodations for persons with documented physical, emotional, or cognitive disabilities. Accommodations will be made for medical conditions related to pregnancy or parenting. Requests for accommodations including letters or review of existing accommodations should be directed to the Office of Disability Services in Erwin Hall 22 or disabilityservices@geneseo.edu or 585-245-5112. Students with letters of accommodations should submit a letter to each faculty member at the beginning of the semester

and discuss specific arrangements. Additional information on the Office of Disability Services is available at www.geneseo.edu/dean_office/disability_services.

Well-Being and Mental Health

Concerns about academic performance, health situations, family health and wellness (including the loss of a loved one), interpersonal relationships and commitments, and other factors can contribute to stress. Students may experience a range of challenges that can impact your mental health and thus impact your learning; common examples include increased anxiety, shifts in mood, strained relationships, difficulties related to substance use, trouble concentrating, and lack of motivation, among many others.

Students are strongly encouraged to communicate their needs to faculty and staff and seek support if they are experiencing unmanageable stress or are having difficulties with daily functioning. SUNY Geneseo offers free, confidential counseling for students at the Lauderdale Center for Student Health and Counseling The Dean of Students (585-245-5706) can assist and provide direction to appropriate campus resources. For more information, see health.geneseo.edu and www.geneseo.edu/dean_students.

Food Security for SUNY Geneseo Students

SUNY Geneseo students who find themselves in a position of food insecurity and do not have the financial resources to support their food and nutrition needs can access the Geneseo Groveland Food Pantry located at the First Presbyterian Church, 31 Center Street in Geneseo. Students can utilize the pantry once with no referral or contact with the College. At this visit they will be provided items that will address their basic needs for several days. If a student continues to face difficulties providing for their own nutritional needs beyond their first visit to the pantry they should connect with Susan Romano, Director of Financial Aid to receive a brief letter that they will present to the staff at the pantry that verifies their need. If students do not have a FAFSA on file for any reason they should contact Dr. Leonard Sancilio, Dean of Students, to discuss their particular situation and options. The Geneseo Groveland Food Pantry is open on the following days and times: Tuesday: 10 AM - 2 PM, Wednesday: 4 PM - 6:30 PM, Thursday: 10 AM - 2 PM.

Class Schedule

Week 1		
Aug. 26	Introduction to Oceanography	Colling Ch. 1, Stewart Ch. 2
Aug. 28	Exploring Earth's seas lab, *Activity 1, laptop needed*	
Aug. 30	History and methods of oceanographic research	
Week 2		
Sep. 2	No Class	
Sep. 4	Density lab	
	Activity 1 due	
Sep. 6	Seawater properties	Stewart Ch. 6
Week 3		
Sep. 9	Temperature, salinity, density distributions	
Sep. 11	Ocean observation methods lab, *Activity 2, laptop needed*	
Sep. 13	Water budget	Colling Ch. 6.1-6.2, Stewart Ch. 5
Week 4		
Sep. 16	Water budget, heat transport	
Sep. 18	Using R for oceanography lab, *Activity 3, laptop needed*	
	Activity 2 due	
Sep. 20	Thermohaline circulation	Colling 6.3
Week 5		
Sep. 23	Water masses, formation and identification	
Sep. 25	Thermohaline circulation lab	
Sep. 27	Tracers of deep-ocean circulation	Stewart Ch. 13
Week 6		
Sep. 30	Surface currents, winds, Coriolis force	Colling Ch. 2, Stewart Ch. 7
Oct. 2	Visualizing oceanographic data lab, *laptop needed*	
	Activity 3 due	
Oct. 4	Ekman transport	Colling Ch. 2, Stewart Ch. 11
Week 7		
Oct. 7	Geostrophic currents	Colling Ch. 3.3
Oct 9	Paper discussion, mid-term review	
	Paper discussion question due	
Oct. 11	*Mid-term exam*	
Week 8		
Oct. 14	No class	
Oct. 16	Gyres, eddies, upwelling	
Oct. 18	Gyres, eddies, upwelling lab, *Activity 4*	

Week 9			
	Oct. 21	Equatorial circulation, ENSO	Colling 3.5, 4.1, 5.1, 5.4
	Oct. 23	Biological pump and nutrient cycling	
	Oct. 25	Pelagic biology	
Week 10			
	Oct. 28	Pelagic biology lab, *Activity 5*	
	Oct. 30	Biomes, dispersal, MPAs	
		Activity 4 due	
	Nov. 1	Waves and tidal cycles	Stewart Ch. 16
Week 11			
	Nov. 4	Ocean-atmosphere interactions	
	Nov. 6	***Special topic presentations***	
	Nov. 8	Paleoclimate reconstruction	
Week 12			
	Nov. 11	Climate change lab, *Activity 6*	Colling 6.6
	Nov. 13	Climate change	
		Activity 5 due	
	Nov. 15	Climate change impacts on biology	
Week 13			
	Nov. 18	Place tectonics	
	Nov. 20	Magnetic anomaly lab	
	Nov. 22	Plate tectonics II	
Week 14			
	Nov. 25	Deep-ocean biology	
		Activity 6 due	
	Nov. 27	No class	
	Nov. 29	No class	
Week 15			
	Dec. 2	Marine sediments	
	Dec. 4	Oceans on other planetary bodies	
	Dec. 6	Exploring earth's seas lab, round 2	
Week 16			
	Dec. 9	***Poster presentations***	
	Dec. 10	No class; extended office hours	
Week 17			
	Dec. 16	***Final exam***; 12-2:30 PM	