INTRODUCTION TO OCEANOGRAPHY
GEOL 309 /EVPP 309/BIOL 309 Fall 2020
Mode of Delivery: Online

COURSE INFORMATION

Instructors are available to meet typically directly after class or by appointment. All official communication with instructors must be via GMU email.

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Required Text: Trujillo, A.P. and H.V. Thurman. 2020. Essentials of Oceanography. 13th edition, **ISBN:** 13: 978013489152-1

COURSE OBJECTIVES AND OUTCOMES

Goal: To introduce the physical, chemical, geological, and biological aspects of the ocean environment. The approach is primarily descriptive, with emphasis on causative factors and interrelationships among physico-chemical and biotic factors.

Prerequisites: Two of the following lab science courses are required for a total of 8 credits (pick two of the following): [Geol 101 or 102], [Evpp 110 or 111 or 210], [Biol 103 or 213], Chem 211, [Phys 160 and 161 or 243 and 244].

Course requirements: Attendance at lectures, reading of textbook chapters, completion of three written examinations, completion of online quizzes.

Method of instruction: Lectures presented by course instructors will include textbook material supplemented by information from peer-review and online resources. Students are expected to read textbook chapters and review lecture slides outside of class. Students are encouraged to ask questions about the covered material.

Methods of evaluation: Three written tests are given. Questions may include multiple choice, matching, fill-in the blanks, definitions, and essay-type questions. Each of the three written tests is worth 25% of your grade. The final exam may include comprehensive questions. Also, eight online performance quizzes will be given during the course of the semester, as well as various graded online participation quizzes.

Lecture exams may include all textbook and lecture material (including; text readings, PowerPoint slides, videos, handouts, etc.). All exams must be taken as scheduled. **Make-ups will not be given**, unless for exceptional circumstances and only if scheduled **PRIOR** to the exam date with a legitimate excuse (e.g., signed doctor's excuse). Make-ups exams will be all essay. Otherwise, any missed exams will be scored a **zero**.

***Online performance quizzes*:** Eight performance quizzes will be given throughout the semester. They will cover previously covered information to make sure you are up to date with course materials. The two lowest quiz grades will be dropped per student; therefore, **no make-up quizzes** will be allowed. Any missed performance quiz will be scored a "zero". The average score of performance quizzes will be worth 15% of your final grade.

Online participation questions: These questions will be asked during the online sessions at random moments. Grading will be based on participation only, not on the correctness of your answer***. Thus, the more you attend the online sessions, the more you help your grade and vice versa.*** The total participation in these questions will be worth 10% of your final grade.

Online resources: A web page is dedicated to this class that can help you learn concepts, study for tests, and further explore the world of oceanography. The web address is **www.masteringoceanography.com** and for each textbook chapter it includes study-assistance on the following topics: 1) chapter objectives, 2) multiple-choice questions (*Understanding the Concepts*), 3) interactive maps and figures (*Visualizing Oceanography*), 4) fill-in the blank questions, 5) web essays, and 6) hot links to important oceanographic sites (*Destinations [research sites] vs. General Links*). ***Note: If you have access to this website through the purchase of your textbook, we strongly recommend using this resource on a weekly basis and as an additional aid for preparing for tests. But, use of this resource is not mandatory.***

GRADING POLICY

GRADED MATERIAL	% of FINAL GRADE
Three Lecture Exams (25% each)	75%
Average score of performance quizzes (highest 6 out of 8)	15%
Total score of online participation questions (random questions asked during online sessions)	10%

Final grade will be assigned based on the following scale, with no exceptions:

FINAL GRADE SCALE:

A+ = 97-100%
A = 93 - 96%
A- = 90 - 92%
B+ = 87 - 89%
B = 83 - 86%
B- = 80 - 82%
C+ = 77 - 79%
C = 73 - 76%
C- = 70 - 72%
D = 60 - 69%
F = 0 - 59%

GENERAL COURSE POLICIES

Attendance to online session: mandatory. Attending the online sessions is the best strategy for success.

Email: GMU email is the official way of communicating with students. Make sure that your ***GMU email*** is set up properly and working. Also, please make sure to include a "subject line" in any sent emails (e.g., GEOL 309 or EVPP 309 or BIOL 309).

Disability Statement: If you have a documented learning disability or other condition that may affect academic performance you should: 1) make sure this documentation is on file with the Office of Disability Services (SUB I, Rm. 2500; 3-4306) to determine the accommodations you need; and 2) give copies of your disability documentation to your instructors so we may discuss your accommodation needs.

Honor Code: GMU students, faculty and staff are bound by the GMU honor code. Adherence to the *GMU Honor Code* is expected of all students, specifically:

Members of the George Mason University community pledge not to cheat, plagiarize, steal, or lie in matters related to academic work.

In all assignments and communications, plagiarism will not be tolerated. This applies equally to oral and written communications in the context of any evaluated (graded) course assignments. As stated in the Honor Code, infractions may result in invalidated credit for dishonorable work and lowered grade, including failure from the class, suspension or dismissal. Inquiries for clarification from the professor are welcome. For more information see the complete honor code in the university catalog.

Studying for Success: To achieve best results, for each hour of lecture, expect to spend a minimum of two hours of studying on your own. Spread that time throughout the week. Do not get behind with the *readings; trying to catch up with mega-study session is not very effective, it results in a terrible* headache and in memory black outs at exam time. If you have questions, please do not hesitate to ask. There are no dumb questions, only ignorance as a result of failure to seek an answer.

Introduction to Oceanography – Tentative Lecture Schedule

Date	Lecture Topic	Text Chapter
Aug 25 **(D)**	Introduction to Planet "Earth"	1
Aug 27 **(R)**	Plate Tectonics & the Ocean Floor	2
Sep 1 **(R)**	Plate Tectonics & the Ocean Floor (continued)	2
Sep 3 **(R)**	Marine Provinces	3
Sep 8 **(R)**	Marine Sediments	4
Sep 9 **(R)**	Marine Sediments (continued)	4
Sep 15 **(D)**	Properties of Water	5
Sep 17 **(D)**	Chemistry of Seawater	5
Sep 22	**Exam I**	
Sep 24 **(R)**	Air-sea Interaction	6
Sep 29 **(R)**	Ocean Circulation, Horizontal & Vertical	7
Oct 1 **(R)**	Global Ocean Circulation	7
Oct 6 **(R)**	Global Ocean Circulation	7
Oct 8 **(R)**	Waves and Water Dynamics	8
Oct 13	**NO CLASS, MONDAY CLASSES MEET TUESDAY**	
Oct 15 **(R)**	Waves and Water Dynamics	8
Oct 20 **(R)**	Tides	9
Oct 22 **(R)**	Tides	9
Oct 27	**Exam II**	
Oct 29 **(D)**	Beaches & the Coastal Ocean	10
Nov 3 **(D)**	Marine Pollution	11
Nov 5 **(D)**	Marine Life and the Marine Environment	12
Nov 10 **(D)**	Biological Productivity and Energy Transfer	13
Nov 12 **(D)**	The Plankton: Drifters of the Sea	13
Nov 17 **(D)**	Animals of the Pelagic Environment	14
Nov 19 **(D)**	Marine Mammals	14
Nov 24 **(D)**	Animals of the Benthic Environment (Intertidal & Coral Reefs)	15
Nov 26	**NO CLASS, HAPPY THANKSGIVING**	
Dec 1 **(D)**	Animals of the Benthic Environments (Hydrothermal vents)	15
Dec 3 **(D)**	Oceans & Climate Change	16
Dec 8	**NO CLASS, READING DAY**	
Dec 10	**FINAL EXAM 1:30 – 4:15 p.m.!! (No exceptions)**	