

GEOL 455 Marine Geophysics Syllabus

Instructor

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The best way to contact me is by email (wzhu@geol.umd.edu). I will response ASAP.

Office hours

Location: CHEM 1210A
Time: Wednesday, 3:00-4:00 PM

Lectures

Location: PLS 1158
Time: Wednesday, 12:00 – 3:00 PM

Class description and outline

An introduction to modern geophysics. Topics include: Plate tectonics, earthquake and faulting, isostasy and gravity, heat and mantle dynamics, ocean ridges and transform faults, hydrothermal vents, trenches and oceanic islands, subduction zones, accretionary and erosion wedges, sedimentary basins and continental rifts. Exploration of the oceans using geophysical methods.

Reference Books

1. The Solid Earth, 2nd Edition, by C. M. R. Fowler, ISBN 0521893070, Cambridge University Press.
2. Global Tectonics, by P. Kearey, K.A. Klepeis and F.J. Vine, 3rd Edition, ISBN 978-1-4051-0777-8, Wiley-Blackwell.

Expectation of students

General knowledge in geological sciences (GEOL 100 or GEOL 120 or equivalent) and one year of college calculus are required for GEOL 455/655. For physics, math, engineering students who do not have any geological background, special permission can be granted on individual basis.

Academic integrity

The University of Maryland, College Park has a nationally recognized Code of Academic Integrity, administered by the Student Honor Council. This Code sets standards for academic integrity at Maryland for all undergraduate and graduate students. As a student you are responsible for upholding these standards for this course. It is very important for

you to be aware of the consequences of cheating, fabrication, facilitation, and plagiarism. For more information on the Code of Academic Integrity or the Student Honor Council, please visit <http://www.shc.umd.edu>.

To further exhibit your commitment to academic integrity, remember to sign the Honor Pledge on all examinations and assignments: "*I pledge on my honor that I have not given or received any unauthorized assistance on this examination (assignment).*"

Textbook and online resources

Readings from the textbook or scientific journals will be assigned. Students are expected to follow the assignments to familiarize the material to ensure better class discussions.

Attendance

Students are expected to attend classes regularly. University Policy, www.testudo.umd.edu/soc/atedasse.html, provides several cases for which student absence is excused. Note that the student must request to be excused in writing and supply appropriate documentation.

Posted web notes are intended as a synopsis of lecture material only. If you miss a lecture you must get full notes from a colleague. Only students with written, excused absences are entitled to a make-up exam, and that should be at a time convenient for the instructor and student.

If the campus is closed for any reason during a scheduled lecture, the material of that day will either be incorporated with future lectures or left as reading in the textbook. If the campus is closed for any reason during the midterm exam, it will be rescheduled to a future lecture time.

Special needs

I will make every possible effort to accommodate your request for special accommodations, when justified. However, any requests must be submitted as soon as possible but **no later than Feb. 5, 2013**. *Do not wait!*

Students with disabilities

If you have a documented disability, you should contact Disability Support Services 0126 Shoemaker Hall. Each semester students with documented disabilities should apply to DSS for accommodation request forms, which you can provide to your professors as proof of your eligibility for accommodations. The rules for eligibility and the types of accommodations a student may request can be reviewed on the DSS web site.

Religious observances

The University System of Maryland policy provides that students should not be penalized because of observances of their religious beliefs, students shall be given an opportunity, whenever feasible, to make up within a reasonable time any academic assignment that is missed due to individual participation in religious observances. *It is the responsibility of the student to inform the instructor of any intended absences for religious observances by Feb. 5, 2013.*

Grading

The final grade will be based on homework sets (40%), a midterm oral presentation (30%) and a final take home exam (30%):

Homework assignments will be given out approximately every 4 weeks.

Midterm oral presentation will take place on Wednesday, March 13, from 12:00 to 3:00 pm, in PLS 1158. Students are expected to give a 15-minute powerpoint presentation on an assigned topic. There will be a discussion (Q&A) session after each presentation. Students are graded based on presentation (50%), question handling (30%) and participation in discussion (20%).

A take-home exam will take place in lieu of the final exam. The exam is due on Wednesday, May 8.

Website

A website for the class is available through the University ELMS/blackboard system.

Follow the link to <https://elms.umd.edu/>, enter your directory ID and password.

If you are registered, you should be able to see GEOL 455/655 in your list of classes.

Course evaluation

CourseEvalUM will be open for students to complete their evaluations for Spring 2013 courses between Thursday, April 25, and Friday, May 10. Students can go directly to the "<http://www.courseevalum.umd.edu>" website to complete their evaluations, beginning April 25. You will be alerted about these dates and provided more information closer to that time, and students will be alerted via their official university e-mail account.

Students who complete evaluations for all of their courses in the previous semester (excluding summer), can access the posted results via Testudo's CourseEvalUM, reporting link for any course on campus that has at least a 70% response rate. You can find more information, including periodic updates, at the "https://www.irpa.umd.edu/Assessment/CourseEval/fac_faq.shtml" course evaluation website.

The expectation is that all students will complete these. This is YOUR chance to anonymously evaluate this class: please use this opportunity!

Schedule

Note: this schedule is subject to change. Depending on how each lecture goes, and on possible University closing, updates will be posted in the website.

Date	Lectures	Remarks
01/23/13	1. Overview	HW #1
01/30/13	2. Plate boundaries/Plate motion	
02/06/13	3. Magnetic field/Past plate motion	
02/13/13	4. Earthquake/Seismology	HW#1 due, HW #2
02/20/13	5. Isostasy/ Flexure and rebound	
02/27/13	6. Heat flow/Hydrothermal vent	
03/06/13	7. Internal structure of Earth	HW#2 due, HW#3
03/13/13	8. Student presentations (midterm)	
03/20/13	<i>Spring Break</i>	
03/27/13	9. Mid Ocean Ridges	HW#3 due, HW#4
04/03/13	10. Continental Rifts	
04/10/13	11. Transform fault/Fracture zone	
04/17/13	12. Subduction zone I	HW#4 due
04/24/13	13. Subduction zone II	
05/01/13	14. Orogenic Belts	Take-home Exam
05/08/13	15. Mechanism of Plate Tectonics	Exam due
05/08/13	Take-home Exam Due	