

GEOL200

Earth’s Fury: Earthquakes, Volcanoes, and Tsunami

Tuesday, Thursday, 2:00 PM – 3:15 PM, CHE 2110

Spring 2012 Syllabus

Note: This syllabus is preliminary. Every part of it is subject to change until the first day of class

Table of Contents

Instructor 2

Catalogue Description 2

 Lectures: 2

 Discussion session: 2

Class Materials 2

 Text 2

 Website 2

Grading 3

 Discussion and lab reports (30pts) 3

 Midterms (30pts) 3

 Capstone project (40 points) 3

 Extra Credit 3

 Grade calculation: 4

 Appeal of grades 4

 CORE 4

Expectation of students 4

 Prerequisite knowledge 4

 Academic integrity 4

 Readings 5

 Attendance 5

 Electronic devices 5

 Class evaluation 5

Special Needs 6

 Students with Disabilities 6

 Religious Observances 6

Schedule 6

 Procedure for Inclement Weather 6

 Tentative lecture schedule 7

Instructor

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Don't hesitate to send me an email at the address above. It is the most reliable way to contact me.

Catalogue Description

Earthquakes, volcanic eruptions, and tsunamis frequently remind us of the dangers associated with living on a constantly changing planet. How do people prepare for these rare but dramatic events? Students will study the science behind earthquakes and volcanoes, how it guides monitoring, forecasting, prevention, and response, and the cultural and ethical aspects of these events.

Lectures:

Tuesday, Thursday, 2:00 PM – 3:15 PM in CHE 2110

Discussion session:

Weekly discussion sessions are associated with this class; Some will take place in a computer lab on campus. Five sessions will discuss various aspects of natural hazards and humanity, six will feature hands on activities, and the other two will be dedicated to group proposal preparation and evaluation.

Class Materials

Text

No text is required. However, the following books contain material of interest for the class and are recommended. Relevant chapters will be available on ELMS through the course reserve system.

- *The Earth in Turmoil: Earthquakes, Volcanoes, and Their Impact on Humankind*, by Kerry Sieh and Sifu Simon LeVay, W.H. Freeman, 1999, ISBN 978-0716736516
- *Natural Hazards and Disasters*, by Donald Hyndman and David Hyndman Thomson Brooks/Cole, 2010, ISBN 978-0538737548

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 GEOL200 in your list of classes and access the website that way.

The website will contain lecture synopsis. In general, these synopses are not full lecture notes. If you miss a lecture you must get full notes from a colleague.

You are encouraged to use the social tools of the ELMS website (wiki, blog) to organize and coordinate your research group for the final project.

Grading

Discussion and lab reports (30pts)

Weekly reports on the discussion section or lab activity are requested of all students and will be graded. 10 points will be allocated for participation to discussion. The weekly reports will need to be posted online and will be graded individually.

Midterms (30pts)

Three midterms will be held during lecture, likely during the last class of each month. Each will cover material in lecture up to the week preceding the test.

Capstone project (40 points)

The capstone project is conducted in small groups. Projects consist of a written report and a 15-minute oral presentation on a particular significant event, a cultural aspect of natural hazards, or a discussion of prevention and response. The report may be submitted using ELMS/Blackboard. A project proposal will need to be submitted roughly a month in advance of the project reports, and will be evaluated by other students as well as the staff to provide insight into the workings and value of peer review. In addition to content, conciseness and clarity will be considered when grading. The 40 points come as follow: Proposal: 10 pts; Peer review: 5pts; Written report: 10 pts; Oral presentation: 10 pts; Personal contribution: 5 pts.

Extra Credit

Requests

Occasionally, I may post a request for materials, illustration, quotation, etc., on the class website. The first 5 people who post an acceptable answer will receive 1 point extra credit. You may collect a maximum of 5 extra credit points. Note: there will not be enough opportunities for everyone to collect 5 extra credit points!

Class-wide participation to [CourseEvalUM](#)

Extra credit of 1 point of the semester grade will be added to the final scores of all students in sections achieving greater than 70% rate of response to the university's on-line course evaluations. If the response rate exceeds 80%, and additional 1 extra credit point will be awarded to all students.

Grade calculation:

With diligent work, it is possible for every student to attain an A in this class. Letter grades will be assigned based on the following scale. Standard rounding will be used, with final scores rounded to the nearest integer percentage, such that a 69.4 would be a D+ and a 69.5 a C-.

100-97%	A+	96-94%	A	93-90%	A-
89-87%	B+	86-84%	B	83-80%	B-
79-77%	C+	76-74%	C	73-70%	C-
69-67%	D+	66-64%	D	63-60%	D-
<60%	F				

Appeal of grades

You may appeal your grade on any exam prior to the posting of final course grades. In this as in all college courses, you should retain all graded items until proper grades have been recorded on your transcript.

CORE

You can receive CORE PS credit of this class.

Expectation of students

Prerequisite knowledge

GEOL 100 is an introductory course without college prerequisites, however it is expected that students will possess the standard knowledge expected of a high school graduate, including proficient comprehension of written and spoken English, basic algebra and chemistry, and general knowledge of world geography.

Academic integrity

The Student Honor Council observes that:

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)."

You are expected to take the Student Honor Pledge before each assignment <http://www.studentconduct.umd.edu/aca/honorpledge.html>

I pledge on my honor that I have not given or received any unauthorized assistance on this assignment/examination

Readings

Readings from online material including selected book chapters available through the online course reserve system will be an integral part of the class. Reading should be done before the class so that class time focuses on discussion. Exams will include questions about the reading material, even if it was not discussed in class.

Attendance

Attendance to the lectures is highly recommended, as provided by University Policy: “The University expects each student to take full responsibility for his or her academic work and academic progress. The student, to progress satisfactorily, must meet all of the requirements of each course for which he or she is registered. Students are expected to attend classes regularly, for consistent attendance offers the most effective opportunity open to all students to gain command of the concepts and materials of their courses of study.”

The full attendance policy is available at www.testudo.umd.edu/soc/atedasse.html. It provides several cases for which student absence is excused. Any request to be excused absence must be submitted in writing and with appropriate documentation.

Attendance to exams is mandatory. Only students with written, excused absences are entitled to a make-up exam, and that should be at a time convenient for both the instructor and student. However, as the lowest grades for the various grading opportunities will be dropped, make-up exams will be organized only if the student has valid excuses for missing more than one exam.

Electronic devices

To avoid unnecessary distractions during lectures, use of cell phones, including texting, is allowed only in case of emergency. Usage of computers for note taking is discouraged. If you choose to use a computer, do so in a manner that does not distract other students. You may be asked to stop or change your seat if, for instance, people around you start to look at your screen instead of the lecture.

Class evaluation

Every student is expected to complete a course evaluation using the [CourseEvalUM](#) system. This is YOUR chance to anonymously evaluate this class. Please use it! [CourseEvalUM](#) will likely be open for students to complete their evaluations for Fall 2011 courses in late November. Students can access directly the <http://www.courseevalum.umd.edu> website to complete their evaluations. You will be alerted via your official University 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.

If you feel this course was outstanding, you may want to consider nominating your instructor for *Dean's Award for Excellence in Teaching* in the College of Computer, Mathematical and Physical Sciences. That award is given to one faculty member each year who demonstrates outstanding qualities as a teacher. Candidates are nominated by students. For information, call extension 5-2677.

If you have any issue with the class, please contact me so that we can address it...

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 and no later than the end of the schedule adjustment period. *Do not wait!*

Students with Disabilities

If you have a documented disability, you should contact Disability Support Services at Susquehanna Hall (<http://www.counseling.umd.edu/DSS/>). 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. Please provide evidence of eligibility before the end of February

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 in advance.*

Schedule

Note: the schedule is always subject to change, depending on how each lecture goes, and on possible University closing. A detailed and updated schedule will be posted on the ELMS website, syllabus section. A tentative lecture schedule is appended to this syllabus, subject to modifications. Occasionally, lectures may be replaced by a discussion of paper to be assigned.

Procedure for Inclement Weather

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 a midterm exam, it will be rescheduled to a future lecture time.

Tentative lecture schedule

Spring 2012	Lecture	Labs
26-Jan Th	Overview	No lab
31-Jan Tu L1	Constitution of the Earth	Roundtable: Major events
2-Feb Th L2	Global Tectonics	
7-Feb Tu L3	Faulting	Lab: Global hazards
9-Feb Th L4	Friction and instabilities	
14-Feb Tu L5	Seismic waves	Lab: Waves
16-Feb Th L6	Earthquake characteristics	
21-Feb Tu L7	Probabilities	Roundtable: Major earthquakes
23-Feb Th L8	Hazards and Civilizations	
28-Feb Tu	Midterm 1: L1 To L7	Lab: Earthquake probabilities
3-Mar Th L9	Predicting earthquakes	
6-Mar Tu L10	Earthquake readiness	Project discussion
8-Mar Th L11	Earthquake Engineering	
13-Mar Tu L12	Tsunami generation	Project Preparation
15-Mar Th L13	Tsunami mitigation	
20-Mar Tu	Spring Break	
22-Mar Th	Spring Break	
27-Mar Tu L14	East Coast Earthquakes	Lab: Inundation maps
29-Mar Th	Midterm 2: L8 to L13	
3-Apr Tu L15	Igneous rocks	Proposal Review
5-Apr Th L16	Types of eruption	
10-Apr Tu L17	Types of volcanoes	Lab: igneous rocks
12-Apr Th L18	Volcanic Hazards	
17-Apr Tu L19	Eruption readiness	Roundtable: Major eruptions
19-Apr Th L20	Volcano and climate	
24-Apr Tu L21	Hazards and Extinctions	Group Work
26-Apr Th	Midterm 3: L14 to L20	
1-May Th	Group reports 1-3	Roundtable: Disasters in popular media
3-May Tu	Group reports 4-6	
8-May Tu	Group reports 7-9	Roundtable: Living with hazards
10-May Th	Group reports 10-12	

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