

GEOL200 Earth's Fury: Earthquakes, Volcanoes, and Tsunami

Tuesday, Thursday, 9:30 AM – 10:45 PM, JMZ 0220

Fall 2015 Syllabus

INSTRUCTORS 2

LECTURES: 2

DISCUSSION/LAB SECTIONS 0101, 0102, 0103: 2

DISCUSSION/LAB SECTIONS 0104, 0105, AND 0106: 2

DESCRIPTION 2

ORGANIZATION 2

LECTURES: 2

IN-CLASS ACTIVITIES: 3

DISCUSSION SESSIONS: 4

PROCEDURE FOR INCLEMENT WEATHER..... 4

CLASS MATERIALS 4

TEXTS..... 4

WEBSITE 6

FACEBOOK (OPTIONAL) 6

GRADING 6

LECTURE QUIZZES (15 PTS)..... 7

IN-CLASS EXERCISES (20 PTS) 7

ATTENDANCE TO OTHER CLASS SESSIONS (5 PTS) 7

DISCUSSION (10 PTS) 7

LONG-TERM PROJECT (35 POINTS) 7

FINAL (15 PTS) 10

EXTRA CREDIT..... 10

GRADE CALCULATION:..... 11

APPEAL OF GRADES 11

EXPECTATION OF STUDENTS..... 11

PREREQUISITE KNOWLEDGE..... 11

ACADEMIC INTEGRITY 11

READINGS 12

ATTENDANCE..... 12

ELECTRONIC DEVICES 12

CLASS EVALUATION 12

SPECIAL NEEDS 13

STUDENTS WITH DISABILITIES..... 13

RELIGIOUS OBSERVANCES..... 13

Instructors

Lectures:

Dr. Laurent G. J. Montési
Assistant Professor, Department of Geology

Office: Chemistry 1221B

Tel: 5-7534

email: montesi@umd.edu

Office hours: Most Mondays or Fridays, 12:00 pm to 2:00pm (email to be sure), or upon appointment.

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

Discussion sections 0101, 0102, 0103:

Mr. Joe Schools
Teaching Assistant, Department of Geology
Email: jschools@umd.edu

Discussion sections 0104, 0105, and 0106:

Ms. Kristel Izquierdo Gonzalez
Teaching Assistant, Department of Geology
Email: kig@umd.edu

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.

This class is one of the "I" Courses for Fall 2015: Issues-Inspiration-Imagination;
<http://www.gened.umd.edu/i-series/iseriess.html>

Organization

GEOL 200 is set up as a "flipped" course: pre-recorded lectures are posted online whereas the class time is dedicated to guided exercises, guest lectures, etc., which replace homework. There will be discussion sessions a long-term group project to be done during and after class.

Lectures:

Available on ELMS as pre-recorded videos and accompanying PDF.

The lecture portion of the class is organized in **22 modules**. Each is assigned a due date. Each module contains two or three videos (total run time approximately equivalent to a 75 minutes class), a quiz, and suggested reading assignments from the online textbook and/or external websites.

The **video lectures** are all available on ELMS. Please note that you have the option to increase video resolution on ELMS. Occasionally, external movies imbedded in the video lectures and charts will be also linked directly to the module description.

Even though we will not discuss the entire content of the videos during class time, you are strongly encouraged to **post questions** on discussion boards on ELMS (preferred), the class Facebook group, or directly by email to Professor Montesi. There will be occasional review sessions in class, but you should not hesitate to ask question through any of these avenues at any time.

Many students have found it helpful to **take notes** when viewing the videos. Do consider doing the same!

To make sure you **advance at a good pace** through the modules and you are prepared for the activities that we will do in class, work through at least one module before each class time. It's OK to go ahead, but not to fall behind. Check the due date for each module quiz to see if you are on track or not.

Each module ends with a **quiz** relating to the lectures. You must score at least 80% on the quiz for the module to be considered complete. You have unlimited attempts to achieve this score. **You must complete a module before being allowed to access the next.**

In-class activities:

Tuesday, Thursday, 9:30 AM – 10:45 AM in JMZ 0220

Note: The schedule of activities is always subject to change, depending on how each exercise goes, possible University closings, guest speaker availability, etc. A detailed and updated schedule is always available on the ELMS website, syllabus section and as a class calendar on ELMS. You may want to subscribe to that calendar.

Class time will not feature standard lectures (see lecture sessions above). Instead, activities of various kinds will be scheduled:

- Eight individual or group exercises (seven graded) taking the place of homework.
- Three guest lectures: Visitors from various institutions around D.C. are invited to deliver a presentation of their work on earthquake, volcanoes, and hazard analyses.
- Two movies and one lecture recorded at a professional meeting featuring discussion of earthquakes, volcanic hazards and risk management.

- Three Demonstration: Guided exercises or demonstrations will illustrate the concepts needed for the class
- Four review session: Professor Montesi will be present to answer your questions on the module contents and will guide discussion if there is no question.
- Nine group presentations sessions: Reports on various aspects of the long-term project.

A grade will be assigned to every class time except the review sessions. It may be an individual grade or a group grade or a class participation grade.

Discussion sessions:

Weekly discussion sessions associated with this class take place every Wednesday.

Location	PLS 1168	PLS 1184
3:00 to 3:50 pm	0101	0104
4:00 to 4:50 pm	0102	0105
5:00 to 5:50 pm	0103	0106

Two kinds of activities will take place during these sessions:

- Seven sessions will be dedicated to group work in relation to the long-term project. These sessions provide the opportunity for each group to get together with the teaching assistant to obtain help on the project, pointers to literature, etc.
- The other sessions are consecrated to the discussion of an assigned book chapter and production of a short memo on a question given during the session.

Note: Attendance to the discussion sessions is mandatory. You will receive a grade related to your participation for each non-group work session.

Procedure for Inclement Weather

If the campus is closed for any reason during a scheduled class, the material of that day will either be incorporated with future lectures or left as reading.

Class Materials

Texts

Textbook

- Earth's Fury, a custom textbook, available on ELMS (originally published by McGraw-Hill, ISBN 978112193026)

The textbook is composed of chapters selected from two different textbooks: *Natural Disasters*, by Abbott (2014), and *Exploring Geology*, by Reynolds, Johnson, Morin, and Carter (2013). These chapters were selected as a resource complementing video lectures without requiring you to purchase complete textbook that would have feature a lot of

material irrelevant for the class. Whenever appropriate, lecture modules will indicate the pages in the textbook that contain supporting material

This year, instead of asking you to purchase the textbook, a scanned version is available on ELMS.

Note: in this custom textbook, each page has two page numbers: the one at the bottom refers to the original text whereas the one at the top refers to the custom book. Reading assignments will always refer to the page number of the custom textbook, at the top, on a green background.

Other resources

Reading materials, especially for discussion sessions, may also be assigned from a variety of other books. In that case, a scanned copy of the relevant chapter will be available on ELMS.

Technical Readings

- *Earthquakes 5th Edition*, by Bruce A. Bolt, W.H. Freeman, 2005, ISBN 978-0716775485
- *Volcanoes, Crucibles of Change*, by Richard V. Fisher, Grant Heiken, and Jeffrey B. Hulen, Princeton University Press, 1997, ISBN 0691002495.
- *Volcanoes, 4th edition*, by Robert Decker and Barbara Decker, W.H. Freeman, 2006, ISBN 978-0-7167-8929-1
- *Natural Disasters, 7th Edition*, by Patrick L. Abbott, McGraw Hill, 2009, ISBN 978-0073376691
- *Natural Hazards and Disasters*, by Donald Hyndman and David Hyndman, Thomson Brooks/Cole, 2010, ISBN 978-0538737548
- *Understanding Earth, 6th edition*, by John Grotzinger and Thomas Jordan, W.H. Freeman, 2010, ISBN 978-1-4292-1951-8
- *Essentials of Geology, 3rd edition*, by Stephen Marshak, W.W. Norton, 2009, ISBN 978-0-393-93238-6

Discussion Readings

- *Apocalypse: Earthquakes, Archaeology, and The Wrath of God*, by Amos Nur, Princeton University Press, 2008, ISBN 978-0691016023
- *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
- *Volcanoes, Crucibles of Change*, by Richard V. Fisher, Grant Heiken, and Jeffrey B. Hulen, Princeton University Press, 1997, ISBN 0691002495.
- *Earthquakes in Human History*, by Jelle Zeilinga de Boer and Donald T. Sanders, Princeton University Press, 2005, ISBN 978-0691127866
- *Volcanoes in Human History*, by Jelle Zeilinga de Boer and Donald T. Sanders, Princeton University Press, 2002, ISBN 0691050813

Example websites from which Online material may be assigned:

- The USGS Publication Warehouse <http://pubs.er.usgs.gov/>

- Annenberg Learner *Earth Revealed* Video on demand
<http://www.learner.org/resources/series78.html?pop=yes&pid=317>
- University of Tromsø, Norway
http://ansatte.uit.no/kku000/webgeology/webgeology_files/english/volcanoes.html

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 (allow 24h for the system to update) and access the website that way.

The website will contain video recording of the lectures as well as a copy of the lecture PDF. Because the class will not offer the opportunity to discuss this material in person, it is important that you take advantage of the comment/reply/social media capacities of ELMS to ask questions about the lectures. The instructors will do their best to respond to comments in a timely manner and other students are encouraged to participate to discussion as well.

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.

Facebook (optional)

A Facebook group has been established at <https://www.facebook.com/groups/GEOL200/> for the class. Its purpose is to facilitate informal discussion between all the people involved in the class: post relevant news items, ask questions etc. Participation to this group is entirely voluntary and **does not replace ELMS**.

The Facebook group is closed and moderated by the teaching team. You will need to request access through Facebook. Please remain courteous when posting on the group. Do not post any material that is illegally obtained (like solutions to quizzes) or any hurtful or inconsiderate comments.

Grading

The semester grade will be weighted sum of many components:

- Lecture quizzes: 15 points
- In class exercises: 20 points
- Attendance to guest lectures, movies, demonstrations, and presentations: 5 points
- Report of discussion sessions: 10 points
- Long-term project: 35 points
- Final exam: 15 points

Extra credit will be added to that grade.

Lecture Quizzes (15 pts)

Each lecture module contains a quiz composed of 15 multiple-choice questions related to the material in the video lectures in that module. You have unlimited attempts to answer the quiz but you need to obtain a minimum grade of 80% (12 correct answer out of 15 questions) for the module to be considered completed. You need to complete each module before accessing the next one.

Each module has a due date. You will lose 1 point out of 15 for each class that passes without you completing a module.

In-class exercises (20 pts)

Individual and/or group exercises are planned for 10 class sessions. Students fill a questionnaire for each of these sessions, which will be graded. You do not need a computer for these exercises and will be asked to shut it down if you using one.

Allowance for absence

Attendance is mandatory. However, to accommodate unavoidable issues, the lowest score among the 7 expected reports will be dropped. The final discussion grade will be the average of the remaining 6 reports.

Attendance to other class sessions (5 pts)

Attendance to demonstrations, guest lectures, scheduled movies, etc. is mandatory. We will track attendance individually, typically by asking you written feedback on the activity. That feedback in itself will not be graded but used to improve these activities.

Discussion (10 pts)

At the end of the 6 discussion sessions when a specific book chapter is discussed, students will be asked to produce a short memo answering a question or request related to the material discussed that day. Sufficient time will be given to write a draft, circulate and evaluate it in small group, and revise it. Drafts, comments, and final version will be collected and graded.

Allowance for absence

Attendance is mandatory. However, to accommodate unavoidable issues, the lowest score among the 6 expected reports will be dropped. The final discussion grade will be the average of the remaining 5 reports.

Long-term project (35 points)

Groups of 4 or 5 students will work on a two-part project over the semester. Several discussion sessions are dedicated to the group project to provide a venue for groups to get together, organize, and have a teaching assistant available for help. However, it is expected that students will need to meet outside of class and conduct additional research through use the UMD library and online resources to conduct the project.

Group should be formed as early as possible. Discussion Session #1 will consist of a general discussion in which students should share interests and experience and hopefully form the first nucleus of their groups. Each student is encouraged to use blogs and emails available through ELMS to identify students of related interest in their discussion session to form groups.

Each student must sign up for a group by 09/09 using the group sign-in facility on ELMS.

The project is designed to simulate the work of a scientific team, and is therefore composed of four elements: a written proposal (5 pts), an oral presentation of the proposal (5 pts) a written report (10 pts), a final oral presentation (10 pts). In addition, 5 pts will be distributed to reflect each student's individual contribution to the group. Scores will be tracked to two decimal points. Detailed grading rubrics will be distributed at least one week before the due date for each phase of the project.

The project's objective is to evaluate the suitability of a chosen site to host a research center, the *Geoterp Hazard Center*. The evaluation is conducted in two parts. First, each group proposes a site where a historically significant earthquake or volcanic eruption took place. Second, each group assesses the hazards and risks at the site, and produces a recommendation as to whether the site is appropriate for the research center or not. Detailed instructions and rubrics are available in a separate document on ELMS. A list of suggested sites is also available on ELMS.

There are four evaluation products associated with the project:

Site proposal (5 pts)

Each group must prepare a three to five page proposal summarizing why a certain site should be considered. Motivation should be focused on a specific earthquake or volcanic eruption that affected the site and should include any information learned about the event. Most of this paper should consist of damage reports, historical background, and basic information (location, magnitude, VEI, etc.). The research objectives of the center are not to study this event, so avoid using that as a motivation. The proposal needs to focus on the event itself! Also, you should not yet discuss the risk associated with the location. You will need to search for information in scientific sources, not news reports.

Proposals are due on 09/23, 11:59 pm. They should be submitted electronically through ELMS.

Proposal presentation (5 pts)

Each group will present orally a summary of their site proposal. That presentation will be short (5 minutes) and needs to focus on describing the event. No risk evaluation is expected at this stage. The presentation will be followed by a few questions from the audience.

The presentation should be prepared in powerpoint (preferred) or prezy and uploaded on ELMS by September 28, 11:59pm (same deadline for all the groups). Do not expect to be able to download an email attachment or to copy the presentation from a thumbdrive during class. Any time taken to search or upload the presentation will be taken out of your allotted time. Time limits will be strictly enforced.

Proposals presentations are scheduled for class time on September 29 and October 01 and 03. You will need to upload your presentation on ELMS by September 28, 11:59pm.

Final report (10 pts)

Each group will submit a written report detailing 1) the motivation behind the study of this location, 2) the geological setting of the location, 3) the various types of hazards and how often they are observed, and 4) the risk present at this location. Detailed formatting and length requirements, as well as a rubric, are available on ELMS.

You need to conclude your report with a recommendation to build the research center at the proposed location or not. Successful project will made a convincing, well-supported argument one way or the other. Eventually it does not matter whether or not you think the original location is good one, as long as you have a complete, unbiased, evaluation. It is fully expected that some sites will be seen as unsuitable, and this will not affect your grade one way or the other!

Reports are due on 11/20, 11:59 pm. They should be submitted electronically through ELMS.

Final report presentation (10 pts)

Each group will present orally a 10 minute summary of their group project. During that time, they should remind the audience why the site is considered, present their risk evaluation and conclude whether or not they think the *Geoterp Hazard Center* should be built at this location. The presentation will be followed by a few questions from the audience.

The presentation should be prepared in powerpoint (preferred) or prezy and uploaded on ELMS by November 18, 11:59pm (same deadline for all the groups). Do not expect to be able to download an email attachment or to copy the presentation from a thumbdrive during class. Any time taken to search or upload the presentation will be taken out of your allotted time. Time limits will be strictly enforced.

Proposals presentations are scheduled for class time between November 19 and December 10. You will need to upload your presentation on ELMS by November 18, 11:59pm.

Individual contribution (5 pts)

Individual contribution to the project will be evaluated based on a survey distributed to every group member.

Final (15 pts)

The class features a final exam, administered online through ELMS. The final is composed of two parts: a multiple-choice test (5 pts) and an essay (10 pts).

- The multiple-choice component (5 pts) is timed and limited to 75 minutes.
 - Questions are taken from the test banks used for the module quizzes
 - The test can be started anytime during a 1-week period leading to the final due date. Answers must be submitted at the latest 75 minutes after the test is first accessed. Points will be removed in proportion to the time in excess of 75 minutes spend before submitting them. The timer will not stop under any circumstance, even if the student leaves the test and returns later.
 - Each student is authorized only one submission.
- The essay (10 pts) should answer a question relevant to the class in general
 - The question will be released one week before the final due date. Reading material or a graph may be attached to the essay question.
 - The essay needs to be well argued, take into account material discussed in class and during discussion, yet reflect original thinking, and be well written. Students can discuss ideas but the essay must be written individually. Evidence for plagiarism, with or without intent, will be reference to the Office of Student Conduct.
 - The essay is not timed. It must be submitted, preferentially as a word or PDF file, by the final due date.
- In accordance with the office of the registrar, the final is due on Tuesday, December 15, 10 am. http://registrar.umd.edu/current/registration/exam_tables_fall.html

Extra Credit***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. Extra credit will increase to 2 points if the response rate exceeds 80% and 3 points if it exceeds 90%.

I-series survey

One point extra credit will be awarded individually to students who fill a survey organized by the *Center for Teaching Excellence* concerning the goals of I-series course and whether this offering fulfills these goals. The survey will be accessed through the ELMS website.

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 to the nearest integer will be used, 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.

Expectation of students

Prerequisite knowledge

GEOL 200 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.

Because class time often features hands-on activities and exercises, absence will result in missing grades.

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 during class is discouraged. You do not need your computer for any of the in-class exercises and will be asked to turn it down if you are using it. Many studies have shown that note taking is most effective if done by hand with paper and pen. Therefore, you are strongly encouraged to leave your computer off when taking notes!

Class evaluation

Your participation in the evaluation of courses through [CourseEvalUM](http://www.courseevalum.umd.edu) is a responsibility you hold as a student member of our academic community. Your feedback is confidential and important to the improvement of teaching and learning at the University as well as to the tenure and promotion process. [CourseEvalUM](http://www.courseevalum.umd.edu) will be open for you to complete your evaluations starting about two weeks prior to the last day of the term before exams begin. Please go directly to the website (<http://www.courseevalum.umd.edu>) to complete your evaluations. By completing all of

your evaluations each semester, you will have the privilege of accessing online evaluation reports for the thousands of courses for which 70% or more students submitted their evaluations. You can access results at <http://www.CourseEvalUM.umd.edu>, the same link you use to submit your evaluations. Click View Past Results instead.

Use the CourseEvalUM URL and choose Take Evaluations to discover upcoming evaluation dates: <http://www.CourseEvalUM.umd.edu>

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 September

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.*

- Copyright: © 2015 *Laurent G.J. Montési* as to this syllabus and all lectures. Students are prohibited from copying and selling course materials, from selling lecture notes, and from being paid to take lecture notes without the express written permission of the faculty teaching this course.