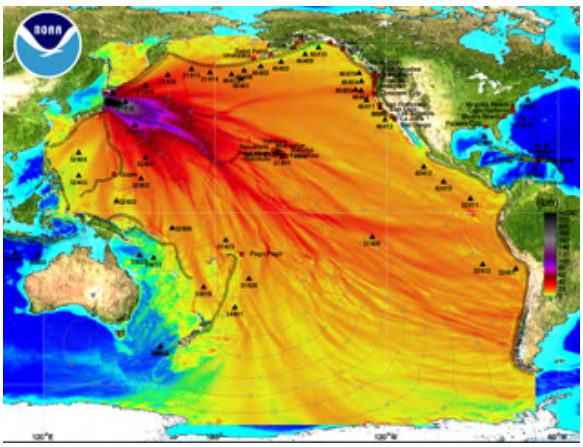
Environmental Geology: GEOS-2310

Fall, 2014



Maximum wave amplitude, Tohoku Tsunami, March 11, 2011

Tsunami! Earthquake! Volcano! Flood! Landslide! Pollution!

You've seen them in the movies, and in the news. Now discover the truth about these environmental phenomena and earn general science credits.

1 Course Description

A practical course examining the interactions of people and our physical environment. Natural hazards, including landslides, flooding, tsunamis, volcanoes, earthquakes, erosion and sea-level change. Air, soil, fresh and ocean water pollution problems and solutions including greenhouse gases, ozone depletion, acid rain, aquifer depletion, toxic wastes and contamination. Energy supplies and the environment, including radioactive waste problems. Global climate change and man's impacts on climate. Designed to fulfill the general education science requirement.

1.1 Prerequisites

This course has no prerequisites, students are assumed to have fulfilled the math and science requirements for admission to UTD.

1.2 Meeting Times & Places

Day	Time	Call Number	Professor	Phone	E-mail
MWF	MWF 10-11am	86194	Dr. Tom Brikowski	x6242	brikowi@utdallas.edu

Class meets in FO 3.616 (see campus map). Professor's office hours are 11:00am-12:00pm MW in ROC 2.301D. Teaching assistant is Inoka Peiris.

1.3 Textbook and Other References

Required Text Keller, E. A., Introduction to Environmental Geology, p. 792, Prentice Hall, Upper Saddle River, NJ, 2011. 5th Ed., ISBN 9780321727510, (Publishers description)

Optional the publisher maintains a companion for the textbook that contains lots of supplemental information, sample quizzes, etc. See the inside front cover of your textbook.

1.4 Google Earth

An important goal of this class is to give the student a visceral feel for the nature of each topic studied. The easy browsing of the Earth's surface in Google Earth allows you to do this in the comfort of your own home without field trip fees! Students are encouraged to download and use this free software. Links to Google-Earth-based lecture materials are available in eLearning, and intermittently on this website.

2 Lecture and Test Schedule

Course grade will be based on 4 during-semester tests, with an optional final exam. Generally a test review will be given during the lecture prior to each testing date (see last column in Table 1). Most tested material will be

Table 1: Lecture and testing schedule. The course content is divided into 4 parts, or "units". One exam is given over each unit, exam dates highlighted by "⇒" in first column.

Unit	Text Chapter	Topic	Test Date
1	1	Philosophy & Fundamental Concepts	
	2	Plate Tectonics	
	3	Minerals & Rocks	
	4	Ecology & Geology	
⇒	5	Intro. to Natural Hazards	Fri. Sept. 19th
2	6	Earthquakes	
	7	Tsunami	
	8	Volcanoes	
	9	Rivers & Flooding	
⇒	10	Slope Processes, Landslides, Subsidence	Fri. Oct. 17th
3	11	Coastal Hazards	
	12	Extraterrestrial Objects	
	–	Class Cancelled	10/20-22
	13	Water Use, Supply	
	14	Water Pollution	
⇒	15	Mineral Resources	Fri. Nov. 14th
4	16	Energy & the Environment	
	17	Soils & Environment	
	18	Global Climate Change	
⇒	19	Geology, Society & the Future	Fri. Dec. 10th
"5"	All	Comprehensive, Optional Final Exam	TBN

from the textbook, but up to 25% will come from lecture. So, while lecture attendance isn't required, it is highly recommended.

3 Test Preparation:

Study the assignments in the syllabus (Table 1) thoroughly. The "Learning Objectives" will help you understand the goal of each textbook chapter. You are responsible for **all** material in the textbook. *Pay particular attention to boxed text, graphs and diagrams as these help to explain the text material. Terms in boldface type in the textbook will often appear in test questions. You should thoroughly understand the concepts presented in the "Summary" the end of each chapter.* Online versions of the lecture notes, with supplementary materials are available through eLearning and the class website. The practice exams offered through the publisher's previous textbook edition companion website are useful study guides, although not guaranteed to be accurate! Approximately 80% of the test questions will be taken from the textbook. Additional questions will generally be based on local or current examples allowing practical application of the concepts given in the textbook. Test review sessions will be offered approximately every other Friday (see Table 1), at which time the instructors will be available to clarify any questions raised by the class.

Test Procedure: Unit tests will be given on the designated days (usually Fridays) in Testing Center (9am-9pm). If you are unable to attend these sessions you must notify us *in advance*, and a single makeup session can be given. See the Testing Center webpage for requirements; you'll need to have a photo ID, the tests are given in eLearning, no outside materials allowed.

Final Exam: An optional comprehensive final exam may be taken during the regularly scheduled final exam period (scheduled for TBN). This exam is strictly for extra credit

Grade Determination: Each of the unit exams will comprise 25% of your grade, with the optional final counted as a 10% extra credit.

3.1 Rules and Regulations

- **All official communication with you will be posted on this Website in the "Late Breaking News" section (sec. 5); you are responsible for all posted information.** Additional information (help aids) about some of the course material is posted on the website as well.

- Cell phones and other communication devices are prohibited in the testing room. Please turn these off prior to starting your test. Cell phones used during any test are subject to confiscation by the testing room monitor.

- All electronic communication (e-mail) with the professor or teaching assistants **MUST** be done from a UTD account. In general this will be most easily done via eLearning. E-mail may not be received by instructors if sent from a non-UTD account, and instructors are prohibited from sending personal or grading information to non-UTD addresses.

- The last day for dropping this course without WP/WF is Sept. 10th; students dropping from Sept. 10th to Oct. 30th will receive a grade of WP or WF. After Oct. 30th you may only drop for non-academic reasons (see UTD Drop/Add Policy).

- **Incompletes are not given** in this class unless a valid, documented major medical or similar excuse is provided. Procrastination does not constitute an acceptable excuse.

4 Online Resources

4.1 Lecture Notes

PDF files of lecture notes are available in eLearning, or at the links below (which can only be accessed from UTD IP addresses). Off campus access is available through eLearning, or by using VPN.

Chapter	Topic
1	Introduction to Environmental Geology
2	Earth Structure/Plate Tectonics
3	Minerals & Rocks
4	Ecology & Geology
5	Intro. to Natural Hazards
6	Earthquakes
7	Tsunamis
8	Volcanoes
9	Rivers and Flooding
10	Landslides
11	Coastal Hazards
12	Extraterrestrial Objects
13	Water Resources
14	Water Pollution and Treatment
15	Mineral Resources
16	Energy
17	Soils & Environment
18	Global Climate Change
19	Geology, Society & the Future
–	Hazard Map Review

5 Late-Breaking News

Any information that changes during the semester will be discussed in this section.

First Meeting Our first meeting will be in FO 3.616 (see campus map), and will consist of an introduction to the class. Course grade will be based on 4 during-semester tests, with an optional final exam.

Library Copy of Textbook A copy of the textbook has been placed on 2-hr reserve at the UTD Library.

Makeup Exams The makeup exams will be held in ROC 2.103 at noon, the first Tue. after the regular exam. Please notify the TA (Inoka Peiris) if you'll be attending the makeup.

Extra Credit Because good citizens of the planet must also vote, 1% extra credit will be offered to students who can prove current voter registration in time for the Federal election. To do this:

1. Get registered by Oct. 6th. See procedures for Collin or Dallas Counties
2. Show your registration card to the TA, (bring it the original or print the online version from Collin or Dallas County or similar links)
3. students who have a valid reason for being unable to register can receive the extra credit (e.g. non-citizens). Please notify the professor or TA.

References

Keller, E. A., 2012, Introduction to Environmental Geology. Prentice Hall, fifth edn., ISBN 9780321727510.