

University of Toronto Scarborough
Department of Physical and Environmental Sciences
EESB18H3 F - Natural Hazards
2015 Outline

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Lecture time: Tuesday 6 pm to 9 pm
Location: SW 143

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Required textbook: Keller, E.A., DeVecchio, D.E., and Clague, J.J. 2015. Natural Hazards Earth's Processes as Hazards, Disasters, and Catastrophes, 3rd Canadian Edition. Pearson Canada Inc. pp. 488

The course textbook is available from the UTSC Bookstore. The textbook includes Mastering Geology with Pearson eText and Access Card Package.

Description: This course is an investigation of the geological background and possible solutions to major hazards in the environment. Environmental hazards to be studied include: landslides, erosion, earthquakes, volcanic eruptions, asteroid impacts, flooding, glaciation, future climate change, subsidence, and the disposal of toxic wastes. This may be of interest to a wide range of students in the life, social, and physical sciences and an opportunity for the non-specialist to understand headline-making geological events of topical interest. No prior knowledge of the Earth Sciences is required.

Learning Objectives: By the end of the course students will have developed an understanding of natural hazards. The course aims to give learners a clear conceptualization of the basic issues surrounding the causes, effect and possible management of environmental hazards.

Marking Scheme:

| Grade Distribution Summary (percentage of total) | |
|--|-----|
| In Class Quizzes x 5 | 10 |
| Term Paper | 20 |
| Assignment 1 | 5 |
| Assignment 2 | 5 |
| Midterm Exam | 25 |
| Final Exam | 35 |
| Total Grade Possible | 100 |

The midterm is based on material covered in lectures and readings up to and including the class before the midterm exam. The midterm will consist of multiple choice and short answers.

The final exam will be based on all term material (including readings and lectures). The midterm will consist of multiple choice and short answers.

Tentative Course Schedule and Readings: Readings are from your course textbook: Keller, DeVecchio, and Clague (2015).

Students should note that topics may span more than one lecture period.

Week 1: September 08

An overview of the course, expectations, and objectives
A quick look at the textbook

Introduction to Natural Disasters

Ch.1

Week 2: September 15

Plate Tectonics

Ch. 2

Week 3: September 22

Quiz 1 (carried out at the start of class)

Earthquakes

Ch. 3

Week 4: September 29

Due Start of Class: Assignment 1

Volcanoes and Tectonics

Ch.5

Week 5: October 06

Quiz 2 (carried out at the start of class)

Mass Wasting

Ch. 6

October 13: Reading Week – No Class

Week 6: October 20

Midterm Test – during class time

Week 7: October 27 (Ms. Athena Masson)

Due Start of Class: Term Paper

Severe Weather and Hurricane

Chs. 10, 11

Week 8: November 03

Quiz 3 (carried out at the start of class)

Tsunamis

Ch.4

Week 9: November 10

Floods

Ch. 9

Week 10: November 17

Due Start of Class: Assignment 2

Quiz 4 (carried out at the start of class)

Coastal erosion

Ch. 12

Week 11: November 24

Climate change

Chs.10, 13, 14

Week 12: December 01

Quiz 5 (carried out at the start of class)

Subsidence and soil expansion/contraction

Ch.8

Asteroids and mass extinction

Ch.15

Assignments:

General Information about Assignments

The term assignments have been designed to encourage students to perform literature research and communicate findings in writing.

Term Paper - Due: 6pm on October 27. You will submit a digital copy of your paper in Blackboard and will hand in a hardcopy at the START of class.

You have two project options for your term paper:

Option A

The objectives of this project are to research the particular hazards/disaster topic you choose based mainly on existing library and web-based resources (i.e., articles from reputable newspapers and magazines) and to compose a reasonably complete written review/summary of the topic. You can either select a topic from the list provided (*see the course Blackboard for a suggested list of topics and additional guidance for writing the term paper*), or choose your own topic which will require my approval BEFORE you start your paper. Your review/summary should be well organized, well referenced with a complete list of sourced materials, and about 5-6 pages long (typed, double-spaced). Take care to proofread your paper in order to correct any faulty grammar and punctuation. Marking will be based on scientific merit/content, style, and organization.

Consider elements such as the scope of the hazard, the geologic setting, possible methods used to reduce impact, and any framework used to implement hazard management. Which countries appear to be more proactive in their approach to hazards management and response? What do you think is successful or positive about the various management methods/approaches, and what is not? Your paper must include a critical/analytical component as well as descriptive elements.

Option B

You will watch a documentary or a 'popular' Hollywood film that deals with the topic of natural hazards/disasters and write a review of the scientific merit of the film. You can either select a film from the list provided (*see the course Blackboard for a suggested list*), or choose your own film which will require the TA's approval BEFORE you start your paper. Your review should be well organized and devoted to the quality of the science, validity of presentation of hazard/disaster, and the feasibility of the consequences illustrated and/or suggested in the movie. Your paper should be well organized, well referenced with a complete list of source materials, and about 5-6 pages long (typed, double spaced, not including tables/figures /references). Please ensure that you proofread your paper in order to correct any faulty grammar and punctuation. Marking will be based on scientific merit/content, style, and organization. The following can help you compose an organized and complete review:

- Note the geological/environmental significance, interesting geological/ environmental features, a geological/ environmental topic or subplots you notice in the film.
- You may find additional details about filming locations and situations using movie official pages on the web.

- Note any geological or scientific errors you observe. If in your research you find such observations made by other people be sure to give proper credit.
- Cite all internet URLs.
- Do not copy any previous reviews.

General paper submission requirements:

Your paper should be no longer than 5-6 pages, typed, double-spaced, excluding title page, reference list, and any figures or tables you wish to include.

- Do not use plastic covers or any form of binder.
- Do not use a paper clip; just staple your paper.
- Use the APA reference format (all sources, including Internet material must be properly referenced).
- There must be a minimum of 3 refereed journal articles used.
- Present your paper in a research paper format.
- The use of section headings is suggested. For example: Introduction; Discussion; Conclusion. Each section may in turn have subheadings. For example the subheadings: *Case Study Area*; and *Management Methods* can appear in the Discussion section.
- Your paper must have a plain title page with the title of your assignment, your name, course number, the date, your student number, and the professor's name. Staple your assignment in the upper left corner; do not use folders, cover slips, or binders.
- You are responsible for making sure that your paper is received properly. Students who mail assignments in, place work on the floor outside an office, or slip assignments under a door, do so at their own risk.

Assignments 1 and 2 - Due: 6pm on Sept 29 and Nov 17.

Will be made available on the course Blackboard. You will submit your assignments on Blackboard and will hand in a hardcopy at the START of class.

General Information about Your Term Work

Grading: Evaluation of papers takes into account organization and structure, style and presentation, as well as research and content. Writing quality and content are both considered in grading. Your work will be graded by a teaching

assistant (TA). If you have a question or problem with the grade you receive, consult the TA. Your grade may be revised up or down based on the review.

Late assignments: The late penalty is as follows:

1 day 10%, 2 day 20%, 3 day 30%, 4 day 40%, 5 day 50%, 6 day and after 100%

Absences: If you need to miss a practical or term test for any legitimate reason, you must submit appropriate documentation within **three** business days of your absence. If the reason for your absence is medical, an official UTSC medical note must be completed by a doctor who examined you while you were ill/injured (i.e. not after the fact). The medical note can be downloaded at: http://www.utsc.utoronto.ca/~registrar/resources/pdf_general/UTSCmedicalcertificate.pdf. Note that conditions ranked as mild or negligible will not be considered a valid excuse.

Missed term work: If a legitimate reason prevents you from submitting a piece of term work by its posted deadline, you must submit appropriate documentation within **three** business days of your absence. If the reason is medical, an official UTSC medical note must be completed by a doctor who examined you while you were ill/injured (i.e. not after the fact). The medical note can be downloaded at: http://www.utsc.utoronto.ca/~registrar/resources/pdf_general/UTSCmedicalcertificate.pdf. Note that conditions ranked as mild or negligible will not be considered a valid excuse.

Extensions: Requests for an extension on an assignment must be tendered in writing in advance of the due date. In instances of illness, an official UTSC medical note must be completed by a physician (see above). Other notes are not acceptable. Extensions are granted at the discretion of the Professor (and the TA), and may be granted for other significant emergencies.

Academic Misconduct and Academic Dishonesty will not be tolerated. Students engaging in misconduct or dishonest practices on exams, quizzes, or other assignments will be dealt with according to the guidelines established by the university.

Plagiarism: Please consult the University Calendar for a discussion and outline of the policy on plagiarism and academic integrity (also see proceeding section below). The sanctions can be severe. If, after reviewing the University policy, you are uncertain about what constitutes plagiarism, talk to your course instructor.

Academic Integrity: Academic integrity is essential to the pursuit of learning and scholarship in a university, and to ensuring that a degree from the University of Toronto is a strong signal of each student's individual academic achievement. As a result, the University treats cases of cheating and plagiarism very seriously. The University of Toronto's Code of Behaviour on Academic Matters (<http://www.governingcouncil.utoronto.ca/policies/behaveac.htm>) outlines the

behaviours that constitute academic dishonesty and the processes for addressing academic offences. Potential offences include, but are not limited to:

In papers and assignments:

- Using someone else's ideas or words without appropriate acknowledgement.
- Submitting your own work in more than one course without the permission of the instructor.
- Making up sources or facts.
- Obtaining or providing unauthorized assistance on any assignment.

On tests and exams:

- Using or possessing unauthorized aids.
- Looking at someone else's answers during an exam or test.
- Misrepresenting your identity.

In academic work:

- Falsifying institutional documents or grades.
- Falsifying or altering any documentation required by the University, including (but not limited to) doctor's notes.

All suspected cases of academic dishonesty will be investigated following procedures outlined in the Code of Behaviour on Academic Matters. If you have questions or concerns about what constitutes appropriate academic behaviour or appropriate research and citation methods, you are expected to seek out additional information on academic integrity from your instructor or from other institutional resources (see <http://www.utoronto.ca/academicintegrity/>).

Please consult the University Calendar for information about grade distribution and academic conduct.

Accessibility: Students with diverse learning styles and needs are welcome in this course. In particular, if you have a disability/health consideration that may require accommodation, please feel free to approach me and/or the AccessAbility Services Office as soon as possible. I will work with you and AccessAbility Services to ensure you can achieve your learning goals in this course. Enquiries are confidential. The UTSC AccessAbility Services staff (located in S302) are available by appointment to assess specific needs, provide referrals and arrange appropriate accommodations (416) 287-7560 or ability@utsc.utoronto.ca.

Students are encouraged to review the Calendar for information regarding all services available on campus.