

NATURAL DISASTERS COURSE OUTLINE

ERTH2415 – Winter 2021

- INSTRUCTOR** Dr. Jason Mah (jason.mah@carleton.ca)
- I will reply to emails within 1 business day.
 - I will not address questions related to course material, these should be posted on the forum for all students to see and learn from.
 - Please email me if you wish to meet. I am available at any time.
- TAs** To be announced.
- TAs will be available via weekly office hours, email, and will answer all questions posted to the online Forums on CuLearn.

COURSE DESCRIPTION

This course is designed to give the student an overview of geologic catastrophes such as earthquakes, volcanoes, and weather related events. For each type of natural disaster, the lecture will explain (1) the science and physics leading to the event, (2) how the events impact human behaviour, and (3) how we attempt to reduce the damage caused by such events. The theory of plate tectonics will be reviewed as it provides a framework to understand the occurrences of catastrophic events.

Note: a prerequisite for this course is knowledge of high school level math and science.

COURSE LEARNING OBJECTIVES

By participating in and completing this course, you should be able to:

1. Demonstrate a comprehension of Earth's geologic, hydrologic and atmospheric processes;
2. Explain the energy sources associated with natural disasters;
3. Identify the cause and effect relationships between earth processes and natural disasters;
4. Assess the associated risks of natural disasters on people and infrastructure.
5. Outline the mitigation strategies used to minimize the impact of natural disasters.

IMPORTANT DETAILS

- All important information will be posted on cuLearn. This includes course information, lecture slides, announcements, quizzes, exams and grades.
- It is the responsibility of the student to check cuLearn and their email to stay up to date with the course.
- The course consists of one 3-hour lecture each week
- Grading will be based on quizzes, two assignments, a midterm, and a final exam
- **The midterm is scheduled for March 4, 6:00PM to 8:00PM. Attendance is mandatory.**

LECTURES

Lectures may be viewed in the following manner:

1. CUOL Web Channel (<https://vod.carleton.ca/stream/web-channel>)
Monday 01:00 – 03:45 PM
Tuesday 01:30 – 04:15 AM
2. Video On Demand (VOD, <https://vod.carleton.ca/>)
You may view the video at any time.
Due to the COVID-19 precautions in place, VOD fees are currently waived.

WEEKLY UPDATES

In addition to the lectures, a brief Monday Morning video will be posted weekly to provide course updates, identify upcoming deadlines or exams, and highlight any current natural disasters. The Midterm and Final Exams may include questions covered in the Monday Morning updates.

TEXTBOOK

The course will closely follow the content in the textbook specified below. The textbook is not mandatory. The textbook is not available in the Library. However, Natural Hazards by Keller and Devecchio is on reserve should you wish to support your learning.

Abbott, P.L. and Samson, C. 2015 (4th Edition). Natural Disasters – Canadian Edition. McGraw Hill Ryerson,

IMPORTANT DATES

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| 1. January 11 | Start of term |
| 2. January 14 | Quiz 1, start of weekly Thursday quiz |
| 3. January 21 | Quiz 2 |
| 4. January 28 | Quiz 3 |
| 5. February 04 | Quiz 4 |
| 6. February 11 | Quiz 5 |
| 7. February 12 | Assignment 1 due |
| 8. February 15 – 19 | Family Day & Winter Break |
| 9. February 25 | Quiz 6 |
| 10. March 04, 6:00PM – 8:00PM | Midterm (attendance mandatory) |
| 11. March 11 | Quiz 7 |
| 12. March 18 | Quiz 8 |
| 13. March 25 | Quiz 9 |
| 14. April 01 | Quiz 10 |
| 15. April 02 | Good Friday |
| 16. April 12 | Assignment 2 due |
| 17. April 14 | Last day of term |
| 18. April 16 – 27 | Final Exam Period (attendance mandatory) |

EVALUATION

The following table presents the course evaluation.

Quizzes	Quiz #1	Covers lectures 1 and 2	2 %
	Quiz #2	Covers lectures 3 and 4	2 %
	Quiz #3	Covers lectures 5 and 6	2 %
	Quiz #4	Covers lectures 7 and 8	2 %
	Quiz #5	Covers lectures 9 and 10	2 %
	Quiz #6	Covers lectures 11	2 %
	Quiz #7	Covers lectures 15 and 16	2 %
	Quiz #8	Covers lectures 17 and 18	2 %
	Quiz #9	Covers lectures 19 and 20	2 %
	Quiz #10	Covers lectures 21 and 22	2 %
Assignments	Assignment #1	Topic to be announced	10%
	Assignment #2	Topic to be announced	10%
Exams	Exam #1	Lectures 1 to 12 inclusive, Monday Morning updates.	40 %
	Exam #2	Lectures 13 to 24 inclusive, Monday Morning updates.	40 %
Total			100 %

QUIZZES

- Each quiz will assess your understanding of the lecture material.
- You are expected to know the lecture material before hand.
- There are 10 quizzes, each worth 2%.
- Each quiz will consist of 10 multiple choice questions and take 15 minutes each.
- Each quiz will take place every **Thursday from 11:00AM to 11:00PM**
- Only one attempt allowed.
- The results will be available Friday, at the earliest.
- Should you experience problems during your Quiz:
 - Note the time.
 - Take a screenshot of the problem.
 - No accommodation will be made to waive or redo a Quiz unless supporting or substantiating documentation is provided.

EXAMS

- Attendance of both exams is mandatory.
- Both exams will take place at a fixed time, not a time range, this is not negotiable.
 - Should you arrive late, no additional time will be given.
- **The Midterm Exam will occur March 04 from 6:00PM to 8:00PM.**
- The Final Exam will be scheduled by Exam Services between April 16 – 27.
- If you miss an the Midterm Exam:
 - A document supporting your absence must be submitted within 3 business days of the exam. Failure to do so may result in 0% in your exam.

- All missed exams must be substantiated with a medical note or other official documents for a deferred exam to be granted.

SCHEDULE

Date	Lecture #	Lecture Topic
Jan 11	1	Introduction
	2	Plate tectonics
Jan 14	Quiz 1 (weekly Thursday quiz)	
Jan 18	3	Disaster and emergency management (guest)
	4	Plate tectonics and earthquakes
Jan 21	Quiz 2	
Jan 25	5	What happens during an earthquake?
	6	Earthquakes, people and infrastructure
Jan 28	Quiz 3	
Feb 01	7	Tsunami
	8	Plate tectonics and volcanoes
Feb 04	Quiz 4	
Feb 08	9	Eruptive style and landforms I
	10	Eruptive style and landforms II
Feb 11	Quiz 5	
Feb 12	Deadline for Assignment 1	
Feb 15	Family Day & Winter Break	
Feb 22	11	Active volcanism now! (guest)
	12	Review before exam #1
Feb 25	Quiz 6	
Mar 01	13	Geomagnetic hazards
	14	Impacts with space objects
March 4, 6:00PM to 8:00PM Midterm Exam		
Mar 08	15	Great Canadian impact tour
	16	Mass movements I
Mar 11	Quiz 7	
Mar 15	17	Mass movements II
	18	Snow avalanches
Mar 18	Quiz 8	
Mar 22	19	Guest lecture: Floods
	20	Guest Lecture: Paleoseismic landslides
Mar 25	Quiz 9	
Mar 29	21	Hurricanes
	22	Floods
Apr 01	Quiz 10	
Apr 05	23	Severe Weather
	24	Review before exam #2
Apr 12	Deadline for Assignment 2	
Final Exam period: April 16 - 27, 2020		

ACADEMIC INTEGRITY

It is your responsibility to review Carleton's policy on Academic Integrity - Section 14 of the Calendar.

<http://calendar.carleton.ca/undergrad/regulations/academicregulationsoftheuniversity/acadregsuniv14/>

Plagiarism

The instructor is required to report all incidents (or suspected incidents) of plagiarism to the Dean. **All work handed in must be your own.** Plagiarism and cheating are viewed as being particularly serious and the sanctions imposed are accordingly severe.

Students are expected to familiarize themselves with and follow the Carleton University Student Academic Integrity Policy. The Policy is strictly enforced and is binding on all students. Plagiarism and cheating – presenting another's ideas, arguments, words or images as your own, using unauthorized material, misrepresentation, fabricating or misrepresenting research data, unauthorized co-operation or collaboration or completing work for another student – weaken the quality of the graduate degree.

Academic dishonesty in any form will not be tolerated. Students who infringe the Policy may be subject to one of several penalties including: expulsion; suspension from all studies at Carleton; suspension from full-time studies; a refusal of permission to continue or to register in a specific degree program; academic probation; or a grade of Failure in the course.

REQUESTS FOR ACADEMIC ACCOMMODATION

Please review the Carleton's Student Guide to Academic Accommodations at <http://carleton.ca/equity/wp-content/uploads/Student-Guide-to-Academic-Accommodation.pdf>, and the websites therein.

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For Students with Disabilities:

“The Paul Menton Centre for Students with Disabilities (PMC) provides services to students with Learning Disabilities (LD), psychiatric/mental health disabilities, Attention Deficit Hyperactivity Disorder (ADHD), Autism Spectrum Disorders (ASD), chronic medical conditions, and impairments in mobility, hearing, and vision. If you have a disability requiring academic accommodations in this course, please contact PMC at 613-520-6608 or pmc@carleton.ca for a formal evaluation. If you are already registered with the PMC, contact your PMC coordinator to send me your **Letter of Accommodation** at the beginning of the term, and no later than two weeks before the first in-class scheduled test or exam requiring accommodation. After requesting accommodation from PMC, meet with me to ensure accommodation arrangements are made. Please consult the PMC website (www.carleton.ca/pmc) for the deadline to request accommodations for the formally-scheduled exam . “

For Religious Observance:

1. As soon as you receive your course syllabus, identify any potential conflicts between

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your religious obligations and course requirements.

2. Make a formal written request to your instructor indicating the nature of the religious obligation and suggest possible alternative dates and/or means of satisfying the academic requirements.

NOTE: Such request should be made during the first two weeks of the term, or as soon as possible after a need for accommodation is known to exist, but in no case later than the second last week of classes for that term.

For detailed information on Religious Obligations please visit our website at: carleton.ca/equity/accommodation/

For Pregnancy or Parental Leave:

A. For final exams. Identify and discuss your needs for final examinations with your professors. When an agreement is reached fill out and submit the online Pregnancy Accommodation Final Exam Request Form at: carleton.ca/equity/accommodation. Equity Services will forward the request to Exam Services to coordinate the accommodation.

B. For in-class accommodations ONLY. If you anticipate you will only require in-class accommodations, discuss them directly with your course instructor. This request should be made in the first two weeks of the academic term. For detailed information on pregnancy and parental leave policies please visit the website at: carleton.ca/equity/accommodation/academic/

Parental leave:

Either parent may request up to three terms of leave, which must be completed within 12 months of the date of birth or custody or request for leave for health-related family responsibilities.

For detailed information on pregnancy and parental leave policies please visit the website at: <https://carleton.ca/equity/policies-procedures/>

Equity and PMC Contact information:

- Department of Equity and Inclusive Communities
613-520-5622
3800 Carleton Technology & Training Centre
equity@carleton.ca
Website: carleton.ca/equity
- Paul Menton Centre for Students with Disabilities
613-520-6608
pmc@carleton.ca
500 University Centre
Website: carleton.ca/pmc