

ERTH 2415 – Natural Disasters Course Outline

Winter 2020

Instructor: Samuel Morton
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Office hours: Thursdays 10:00-11:00 in HP2125

Teaching Assistants: To be announced

Course Description:

This course is designed to give the student an overview of geologic catastrophes (i.e., earthquakes, tsunamis, volcanoes, climate change etc.), with an emphasis on (1) understanding why and how these processes occur from a physical science standpoint, and (2) developing an ability to understand how these hazards affect us in everyday life.

The course also explores how we are trying to prevent, predict, and remedy catastrophes. After an introduction to natural disasters we will start by discussing the Grand Unifying Theory in Geology – *Plate Tectonics* – as it provides the framework to understand occurrences of major catastrophes.

Learning Outcomes:

By participating in and completing this course, students will 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 cause and effect relationships between earth processes and natural hazards
4. Assess the associated risks of natural disasters on human societies and identify when a hazard becomes a catastrophe
5. Discuss if and how geological catastrophes can be predicted, mitigated, and avoided

Prerequisites: None; knowledge from high school level math and science is expected, and relevant earth sciences materials will be reviewed in introductory lectures.

Grade Breakdown:	Quizzes	20%	(4 quizzes, 5% each)
	Midterm Exam	40%	(Lectures 1-5)
	Final Exam	40%	(Lectures 6-11)

Important Details:

- This course is a (mostly) online course with in-person midterm and final exams.
- The course consists of weekly lectures, four quizzes, a midterm and a final exam.
- All course information, announcements, lecture slides, quizzes and grades will be made available on **CuLearn**.
- The lectures themselves consist of pre-recorded video lectures by Dr. Mareike Adams. All video lectures are accessed through **CUOL**.
- Despite this being an online class, lectures still occur at a fixed time.

Important Dates:

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|---|---|
| 1. January 20 th to 24 th | Quiz 1 |
| 2. February 3 rd to 7 th | Quiz 2 |
| 4. February 29 th | Midterm Exam (2:30 – 4:30 PM) |
| 3. March 2 nd to 6 th | Quiz 3 |
| 5. March 16 th to 20 th | Quiz 4 |
| 6. April 13 th to 25 th | Final Exam Period (Date & Time of Exam - TBD) |

Textbook: *Natural Hazards: Earth's processes as hazards, disasters, and catastrophes*, 5th or 4th Edition
Edward A. Keller & Duane E. Devecchio

Or

Natural Disasters – Canadian Edition, 4th edition
Abbott, P.L. and Samson, C. 2015

(copies on Permanent Reserve in library)

The textbook is *suggested*, it is not mandatory to purchase. The lecture notes will follow the first book listed closely, however the second book is an excellent resource as well. *All material on quizzes and exams will be taken from in-class topics only.*

Video Lectures: ****Three ways to watch the lectures for this class****

1. CUOL Web Channel

The CUOL Web Channel will play a recorded video of the lecture on their web channel:

<https://vod.cuol.ca/stream/web-channel>

Lecture Time: Mondays 1:00-3:45 PM EST

(Lectures are repeated on Tuesday mornings from 1:30-4:15 AM EST)

2. Video on Demand (VOD)

For a \$50 subscription fee, you can access the recorded videos of the lectures at any time. You can also rent individual lectures for \$6 each.

<https://vod.cuol.ca/vod>

3. CUOL Student Centre (Loeb D299)

The CUOL Student Centre has kiosks available to view each lecture for free, available 24 hours a day, 7 days a week.

Lectures can also be freely viewed on campus using computer terminals, such as those found at the MacOdrum Library.

Information and Assistance Regarding Video Lectures

CUOL website: www.carleton.ca/cuol

Video On Demand login page: <https://vod.cuol.ca/vod>

CUOL Student Centre: D299 Loeb, 613-520-4055

Email: cuol@carleton.ca (general information)

Email: vod@carleton.ca (Video On Demand support and questions)

Quizzes

There are 4 open-book quizzes to be taken via CuLearn. Each quiz is worth 5% of your final grade, and will take approximately 30 minutes to 1 hour to complete. Quiz questions are multiple choice and will be based on lecture material only.

Quizzes will be open on CuLearn for 4 days (96 hours); they will open on Monday afternoon and will close the same time Friday afternoon.

It is your responsibility to check CuLearn for the quiz and complete it on time, as quizzes will become unavailable after the due date.

Study groups can be helpful in examining the course material and group learning is generally encouraged. However, quizzes are each to be done individually. You are responsible for understanding the course material, and going through the process of completing each quiz on your own is intended to help familiarize you with the material and prepare you for the exams. Please do not discuss the quiz questions with other students until after the quiz becomes unavailable.

These open-book quizzes will gauge your understanding of the material and help you prepare for exams, but please be aware that exam questions are often more challenging than quiz questions.

Regarding Quiz Attempts:

- You will have only ONE attempt, and only the allotted time from start to finish to complete each quiz. Doing the quizzes is a good way to test what you have learned and if you know where to find the necessary information.
- Once you have started a quiz it will be open only for the allotted time; closing the browser will not stop the clock!
- After you finish a quiz you will immediately see your score, but not what you got right or wrong.
- After the deadline for a quiz has passed, you will be able to check the evaluation of your responses in the Gradebook.

If 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

Midterm and Final Exams

- There are two exams, each worth 40%, with entirely multiple-choice questions.
- Exams are non-cumulative:
 - Midterm Exam will test material from Lectures 1 to 5
 - Final Exam will test material from Lectures 6 to 11.
- Study guides will be released more than two weeks before each exam, giving you lots of time to study and prepare yourselves.
- Attendance of both exams is mandatory.
 - Local students living within 100km of Carleton will write their exams on campus.
 - Distance students living over 100km from campus will write exams at either a Carleton University Test Centre or may apply to write the exam at distance with a proctor. ****Distance students must apply through CUOL before January 18th.****
- If you miss an exam:
 - A document supporting your absence must be submitted within 3 business days of the exam. Failure to do so will result in a 0% grade for your exam.
 - All missed exams must be substantiated with a medical note or other official documents for a deferred exam to be granted.

****Note: NO questions/emails regarding exams will be answered on the exam date.****

Course Timeline

Date	Lecture #	Lecture Topic
Jan. 6 th	1	a) Introduction b) Internal structure & plate tectonics
Jan. 13 th	2	a) Plate tectonics b) Earthquakes 1
Jan. 20 th	3	a) Earthquakes 2 b) Tsunamis
Jan. 20 th -24 th	Quiz 1 : Lectures 1-3	
Jan. 27 th	4	Volcanoes
Feb. 3 rd	5	a) Mass wasting b) Floods
Feb. 3 rd -7 th	Quiz 2 : Lectures 4-5	
Feb. 10 th	6	Atmospheric pressure & severe weather
Feb. 17 th -21 st	----- Winter Reading Week; No Classes Scheduled -----	
Feb. 24 th	7	Hurricanes
Feb. 29 th	Midterm Exam (6:00 – 8:00 pm) : Lectures 1-5	

Mar. 2 nd -6 th	Quiz 3 : Lectures 6-7	
Mar. 2 nd	8	Coastal Processes
Mar. 9 th	9	Floods
Mar. 16 th	10	Impacts & the great Canadian impact tour
Mar. 16 th -20 th	Quiz 4 : Lectures 8-10	
Mar. 23 rd	11	Climate & climate change
Mar. 30 th	12	Review
Apr. 13 th -25 th	Final Exam Period (Date/Time to be announced)	

ACADEMIC INTEGRITY

It is your responsibility to review Carleton's policy on Academic Integrity

<https://carleton.ca/senate/wp-content/uploads/Academic-Integrity-Policy1.pdf>

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.

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 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

Pregnancy:

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.

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
Email: equity@carleton.ca
Website: carleton.ca/equity
- Paul Menton Centre for Students with Disabilities
613-520-6608
TTY: 613-520-3937
500 University Centre
Website: carleton.ca/pmc