

# Course Syllabus and Outline (Revised)

## Natural Disasters - EARTH 2415

### Summer 2022

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- I will reply to emails within 1 business day and can arrange meetings with students via zoom, when it is necessary.
- All questions relating to this course should be sent to the course forum, not my email, so that everyone can benefit from the responses. I will not respond to emails asking questions about the course/lectures/announcements/deadlines, etc.

**TA:** 1 Ramy Saadeldin ([ramysaadeldin@cmail.carleton.ca](mailto:ramysaadeldin@cmail.carleton.ca))

TAs will operate office hours to attend to genuine students' needs and requests.

#### **COURSE DESCRIPTION**

A natural disaster is a catastrophic event resulting from Earth's natural process. They sometimes lead to the loss of lives, properties, and some irreplaceable priceless assets, and the deformation of the earth's surface. Examples of natural disasters include earthquakes, volcanic eruptions, tsunamis, firestorms, and Tornadoes. Others are floods, storms/firestorms, landslides, dust storms, and extreme weather conditions. These natural disasters are caused by geological, solar, meteorological, and hydrological processes that humans may experience from time to time and place to place.

Seismologists, volcanologists, hydrologists, and meteorologists have observed and studied these events to explain the candidate mechanisms leading to these natural disasters and made attempts to predict future occurrences of some disasters – e.g., floods, wildfires, and hurricanes. However, the predictions of when and where disasters such as earthquakes and volcanic eruptions would occur are not yet accurate. Interestingly, mitigation strategies that include engineering, architecture, communication, and emergency responses can be put in place to reduce the impact of any kind of natural disaster.

This course – EARTH2415 will start off with Plate Tectonics and explain why some countries are more prone to some natural disasters than others, and go on to explain different natural disasters, drawing examples from and outside of Canada. The course will focus on:

- (1) the science and process leading to the events of natural disasters,
- (ii) how they impact human communities, infrastructure, lives, and properties, and
- (iii) the strategies to mitigate the consequences of natural disasters.

#### **THE COURSE LEARNING OUTCOMES INCLUDE THE FOLLOWING:**

Understand the process leading to different natural disasters  
Know the impacts of natural disasters

Understand the cause-effect relationship between earth process and natural disasters  
Know strategies and safety practices that can be used to mitigate the impacts of natural disasters  
Understand the associated risks of natural disasters on people, communities, and infrastructure.

### **COURSE DELIVERY:**

The course will be delivered in-person (with some online components- Assignments, Quizzes). Lectures will hold on Wednesdays and Fridays at 10:05 – 11:25 in Theatre B Southern Hall. Attendance at lectures and class participation will constitute about 10% of the total point. Classes start by July 4<sup>th</sup> and run through to August.

### **IMPORTANT DETAILS**

- All important information will be posted on Brightspace. This includes course information, lecture slides, announcements, quizzes, exams, and grades.
- It is the responsibility of the student to check Brightspace and the class forum to stay up to date with the course.
- Grading will be based on quizzes, assignments, class participation & attendance, a midterm, and a final exam
- It is students' responsibility to refer regularly to the course website for lecture topics, quizzes, assignments, announcements. Students should regularly log on to Brightspace to check for announcements, course
- Attendance in lectures is mandatory. It is required that required email the instructor to advise of absences due to illness or emergencies within **two days** of missing a deadline or an exam. More details will be provided during the lectures.

### **QUIZZES, ASSIGNMENTS, and EXAMS**

Exams and quizzes will be conducted outside the normal class schedules, exam would be in-person digital, some quizzes would be online/virtual and in-person as the situation permits.

- Each quiz, exam, and assignment will assess your understanding of the course.
- You are expected to know the lecture material beforehand and prepare for each class
- There would be at least 5 quizzes worth 20%
- Each quiz will consist of 10 multiple choice questions and take 15 minutes.
- Each quiz will take place during outside of lectures on dates
- The results will be available few days later.
- Should you experience problems during your Quiz:
  - o Note the time, take a screenshot of the problem showing your computer time, and send an email to the TAs within 5 minutes
  - o No accommodation will be made to waive or redo a Quiz unless supporting or substantiating documentation is provided
- Attendance of both exams is mandatory.
- Both exams will take place at a fixed time, not a time range.
  - o No additional time will be given for later arrival. Start and finish times are fixed
- The Midterm Exam will occur as shown in the schedule
- The Final Exam will be scheduled by Exam Services in August
- If you miss the Midterm or final exam:
  - o [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.

## TEXTBOOK

The following textbooks are recommended:

1. Abbott, P.L. and Samson, C. 2015 (4th Edition). Natural Disasters – Canadian Edition. McGraw Hill Ryerson.
2. Abbot Patrick L. Natural Disasters, 12 Edition, Mc Graw Hill
3. Natural Hazards, DeVecchio, Duane E; Keller, Edward A 2016
4. Natural Hazards: Earth's Processes as Hazards, Disasters, and Catastrophes Keller, Edward A DeVecchio, Duane E.

Textbooks 3, 4 and more are available in the University Library.

## LECTURE SCHEDULE

Lectures will hold two times in a week on Wednesdays and Fridays from 10:00 – 11:25 each day starting from 4<sup>th</sup> July 2022 through to August in Theatre B, Southam Hall.

S/No	Date	Lecture #	Lecture topic
<b>WK1</b>	July 6 2022	Lecture #1	Introduction
		Lecture #2	Disaster and emergency management
	July 8 2022	Lecture #3	Plate tectonic and earthquakes I
<b>Wk2</b>	July 13 2022	Lecture #4	Plate tectonics and earthquakes II
		Lecture #5	Earthquakes, people, and infrastructure
	July 15 2022	Lecture #6	What happened during an earthquake
<b>Wk3</b>	July 20 2022	Lecture #7	Plate tectonics and Volcanoes
	July 22 2022	Lecture #8	Tsunami
		Reviews	Review
	<b>July 23 2022</b>	<b>Mid term Exam</b>	<b>Covers lecture 1-8 (in-person digital)</b>
<b>Wk4</b>	July 27 2022	Lecture #9	Mass movement I
		Lecture #10	Mass movement II
	July 29 2022	Lecture #11	Snow Avalanche
<b>Wk5</b>	August 3 2022	Lecture #12	Severe weather
		Lecture #13	Eruptive style and landform I
	August 5 2022	Lecture #14	Eruptive style and landform ii
<b>Wk6</b>	August 10 2022	Lecture #15	Floods
	August 12 2022	Lecture #16	Hurricanes
	August 13 2022	Reviews	Reviews
	<b>August</b>	<b>Final Exam</b>	<b>Covers lecture 9-16 (in-person digital)</b>

**QUIZZ, ASSIGNMENT, AND EXAM SCHEDULES:** each quiz will last for about 15 minutes with the range of 9:00 -9:15 am every Wednesday beginning from 13<sup>th</sup> July 2022. Students have the freedom to choose their best time between 9:00 -9:15 am to attempt the quiz

S/No	Date	Task	Description of the task
1	Wednesday July 13	Quiz 1 (9:00 – 10:15 am)	Covers lectures 1-3
2	<b>July 15</b>	<b>Assignment 1 is due</b>	
3	Wednesday July 20	Quiz 2 ((9:00 – 10:15 am)	Covers lectures 4-6
4	<b>Sat July 23</b>	<b>Mid-term exam</b>	<b>Covers 1-8 and Assignment 1</b>
5	Wednesday July27	Quiz 3(9:00 – 10:15 am)	Covers lectures 7 & 8
6	<b>July 30</b>	<b>Assignment 2 is due</b>	
7	Monday August 3rd	Quiz 4 (9:00 – 10:15 am)	Covers lecture 9 -11
8	Monday August 10	Quiz 5 (9:00 – 10:15 am)	Covers lectures 12 -14
9	<b>August 13</b>	<b>Assignment 3 is due</b>	
10	Monday August 15	Quiz 6 (9:00 – 10:15 am)	Covers lectures 15 & 16
11	<b>To be fixed by CU</b>	<b>Final exam</b>	<b>Covers lecture 9-16 + assignment</b>

### Grading Scheme:

Quizzes - 15% (best 5 of the 6 quizzes multiplied by 3 equal 15)

Assignments – 15%

Attendance and class participation – 10%

Mid terms exam - 30%

Final exam – 30%

Total – 100%

### ACADEMIC INTEGRITY

It is your responsibility to review Carleton’s policy on Academic Integrity - Section 14 of the Calendar and obey them. Ignorance is not an excuse

<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.

**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](mailto: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/classes, and no later than two weeks before the scheduled test or exam requiring accommodation. After requesting accommodation from PMC, please follow up with me to ensure accommodation arrangements are made. Please consult the PMC website ([www.carleton.ca/pmc](http://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. Such request should be made during the first two weeks of the term, or as soon as the need for accommodation is known to exist, but in no case later than the second to last week of classes for the term. For detailed information on Religious Obligations please visit our website at: [carleton.ca/equity/accommodation/](http://carleton.ca/equity/accommodation/)

**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](http://carleton.ca/equity/accommodation). Equity Services will forward the request to Exam Services to coordinate the accommodation. For detailed information on pregnancy and parental leave policies please visit the website at: [carleton.ca/equity/accommodation/academic/](http://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](mailto:equity@carleton.ca)  
Website: [carleton.ca/equity](http://carleton.ca/equity)
- Paul Menton Centre for Students with Disabilities  
613-520-6608  
[pmc@carleton.ca](mailto:pmc@carleton.ca)  
500 University Centre  
Website: [carleton.ca/pmc](http://carleton.ca/pmc)