

University of Guelph  
Department of Geography, Environment & Geomatics  
**GEOG\*1350 – EARTH: Hazards and Global Change, 0.5 credits**  
**Winter 2021 – Monday, Wednesday, Friday**  
**Time 11:30am-12:20pm – Virtual Class Meetings Using Zoom – Refer to CourseLink**

**Instructor:** Dr. Jaclyn Cockburn (pronouns: she/her)

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Office Hours: Wednesdays 1-3pm – held virtually – see CourseLink for the Office Hours Zoom link

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### **General Description**

Of the ten deadliest disasters in the past century, six were due to or related to earthquakes; massive flooding and storms caused the remaining four. Over the last century more than 50 million deaths have been caused by natural disasters. What does this mean? Why does this happen and how are agencies working towards preparedness? This course investigates physical aspects of natural hazards that affect people and society. We will focus on the natural systems and processes that cause floods, earthquakes, volcanoes, landslides, hurricanes, tornadoes and other natural disasters. The course includes a discussion of major events in the geologic and historical record as well as future hazard potential and how Geographers are working toward understanding these issues and developing strategies for mitigation and adaptation. We look at the risks humans face in different regions, including local hazards, our contribution to geologic hazards, and how we can minimize and cope with future events. In addition to our classroom discussions and lectures we will evaluate hazards that have developed or may develop in southwestern Ontario. Although the probability of the ‘made for a movie’ types of hazards (e.g., earthquakes, volcanic eruptions) is low, there are other types of hazards that need to be taken into consideration with respect to individual and community preparedness in Ontario and other parts of Canada. We will also spend time discussing and analyzing the ways in which risk is assessed and managed by insurance companies and emergency response agencies.

### **Calendar Description**

This course investigates physical aspects of natural hazards that affect people and society and will focus on the natural systems and processes that cause climate variability and change, floods, earthquakes, volcanoes, landslides, hurricanes, tornadoes and other natural disasters. There are no prerequisites, co-requisites or restrictions for this course.

### **Territorial Acknowledgement**

Acknowledging the territory on which we learn and work honours the relationship between lands/waters and the Indigenous ancestors and stewards of them. This acknowledgement is adapted from the University of Guelph Indigenous Resource Centre and Student Life.

The University of Guelph rests on the traditional territory of the Attawanderon people. We therefore acknowledge the Attawanderon people and offer our respect to Anishinaabe, Haudenosaunee and Métis neighbours as the university and community strive to strengthen our relationships with them. We also recognize the significance of the Dish with One Spoon Covenant to this land. The Dish with One Spoon

Covenant is a peace agreement made between Indigenous nations before the Europeans arrived. It characterizes our collective responsibility to each other and Mother Earth -we should take only what we need, leave enough for others and keep the dish clean.

### **Statement on Expectations for Inclusivity**

Different perspectives and lived experiences shape who we are and make our communities stronger. I want everyone in our class to feel safe, feel that they belong and that their ideas, perspectives, and lived experiences are important. It is my intent that students from all diverse backgrounds and perspectives be well served by this course, that students' learning needs be addressed both in and out of class, and that the diversity that students bring to this class be viewed as a resource, strength and benefit. It is my intent to present materials and activities that are respectful of diversity: gender, sexuality, disability, age, socioeconomic status, ethnicity, race, and culture. Your suggestions are encouraged and appreciated. Please let me know ways to improve the effectiveness of the course for you personally or for other students or student groups.

### **Learning Outcomes**

This course aims to introduce and enhance the learning outcomes identified by the University of Guelph and Department of Geography, Environment & Geomatics. Specifically, in this course students will:

- Develop a comprehensive *breadth of understanding* of the core concepts and principles that dictate Earth hazards. Students will evaluate the Earth as an integrated system by examining dynamic flows, interactions and exchanges at different spatial and temporal scales.
- Critically and *independently* recognize, synthesize and evaluate diverse sources of knowledge, arguments and approaches pertinent to exploring elements of geoscientific problems
- Appreciate and begin to reflect critically on the importance of holistic, integrative human-environment perspectives.
- Investigate complex real-world challenges using appropriate concepts, methods, and tools from the geographical sub-disciplines.
- Recognize and identify the societal relevance of geographical knowledge and apply it to real world human-environment issues.
- Value respectful, responsible, and just community engagement and demonstrate active citizenship when addressing human-environment issues.

### **Overview of Course Content and Organization**

Our course is scheduled such that there are 3 lectures each week. Given the changes to the semester due to concerns about COVID-19 and Public Health regulations, in-person, on-campus lectures and office hours are not planned. Using tools like Zoom we will have synchronous activities/meetings during the scheduled lecture, as well materials will be posted to CourseLink. Please check with the schedule on CourseLink to ensure you do not miss any 'live' (synchronous) course activities. Lectures will include in-class activities, multi-media presentations, group discussions and in-class assignments. Each week students will complete an online quiz based on the lecture and assigned readings for that week, students are responsible for preparing and completing these quizzes in the timeframe stipulated. There are two assignments during the term. Please refer to the materials related to these assignments for more details and deadlines.

Course Content Includes:

- Plate Tectonics, Earthquakes and Volcanoes
- Tsunamis
- Severe Weather: Thunderstorms, Tornadoes and Hurricanes
- Climate Change: past, present and future
- Rivers and Flooding
- Slope Stability and Mass Movements, Subsidence
- Coastal Erosion and Processes
- BIG EVENTS → Meteoroid Influx & Mass Extinction Events

### Learning Services for First Year Courses

Although many of you may not be first year students, because this course is designated as a first-year course there are additional resources available to you. Learning resources for first-year students at the Library and Learning Commons. They offer free services to help you succeed in first year courses at the University of Guelph.

These opportunities include:

- meeting with a peer helper to talk about study strategies or your writing assignments
- attending Supported Learning Groups
- getting assistance finding journal articles and books
- registering for academic workshops

For more information please visit the Library website or ask me to direct you to someone at the Library and Learning Commons. Library website → [www.lib.uoguelph.ca](http://www.lib.uoguelph.ca)

### Textbook

Natural Disasters, 2020, 11<sup>th</sup> Edition, International Edition, P.L. Abbott, McGraw-Hill Education, New York, p511.

There are e-book options and hard-copy book options of this text available to you through the UofG Bookstore at this link: [\(e-book\)](#)

I believe you can also purchase the book directly from the [publisher](#).

You can likely make do with any introductory Natural Hazards (disasters) textbook (**ideally a CANADIAN or International edition**) written in the last 5-6 years. BUT ABSOLUTELY YOU NEED A TEXTBOOK. *I urge you to find the most cost effective option and make use of the reserve copies in the library. I will be using Abbott 2020 throughout the semester and will refer to it frequently.*

### CourseLink Page and UofG Email/ID

There is a course webpage on CourseLink. To access this resource, use your central account ID and password. This is the same login ID and password that is used to access your University of Guelph email and WebAdvisor. CourseLink can be accessed from the University's homepage.

In order to attend lectures you must have a Zoom account (free) setup with your UofG email address, this is a security feature that has been instituted by the university for the Winter 2021 semester. If you've used/accessed Zoom lectures using a non-UofG email in the past, that will not work in W21 for GEOG\*1350.

### **Evaluation (select the scheme that works for you by the end of February (just after the midterm))**

#### **Scheme A (if you do not select a scheme by Feb 28, this is the scheme you will be evaluated on):**

The final grade will be assessed from weekly review quizzes (10%), two assignments (15% each, 30% total), and two tests spaced throughout the term (60%). Quizzes and tests are based on information presented and discussed in lectures, assigned readings and assignments. The first test (25%) is in week 6 and the final test (35%, cumulative) is scheduled during the university exam period. In summary:

Weekly Review Quizzes	10%
Assignments	30%
Tests	60%

#### **Scheme B:**

The final grade will be assessed from two assignments (15% each, 30% total), and two tests spaced throughout the term (70%). You will still have access, and are encouraged to complete the weekly review quizzes, but the score on the quizzes will not count toward your final grade, thus the test section of your evaluation is weighted more heavily. Weekly review quizzes and tests are based on information presented and discussed in lectures, assigned readings and assignments. The first test is in week 6 (30%), and the final test (40%, cumulative) is scheduled during the university exam period. In summary:

Assignments	30%
Tests	70%

Students with a **documented conflict** for any test need to see me **at least two weeks** prior to arrange an alternative time, there is no guarantee that this will be accommodated, but ensuring that you address the issue several weeks in advance will certainly assist the process.

#### ***Weekly Review Quizzes – worth 10% in the default evaluation scheme***

The weekly review quizzes are an incredible opportunity for students to review and 'test' themselves on the relevant material at a relatively frequent pace. The quizzes in total are worth 10% of the final grade in the class (default scheme). The quizzes are used to incentivize engagement with the course material one more time. So, if you skim the readings before class, attend class and take helpful notes along the way, read the assigned readings, review your notes each week that is approximately six points of engagement with the material. Adding the quiz makes it seven points. I think these points of engagement with the material are vital to an in-depth and comprehensive understanding of complex concepts in GEOG\*1350. So, the quizzes might feel like extra work – and they should – because the whole point was to get you to engage with the material one more time. Furthermore, the quiz questions help me to gauge student comprehension and usually reflect the most important or challenging ideas and concepts covered during that week. Finally – quiz questions are often re-used on the exams – so in case you needed one more reason to pay attention to them, they will likely help you out with the tests.

### ***Assignments – 15% each, 30% total***

These assignments are an opportunity for you to demonstrate to us that you understand key concepts. More details about the assignments will be presented at the end of week 1 in class.

### **Turnitin**

In this course we will be using Turnitin integrated with the CourseLink Dropbox tool to detect potential plagiarism, unauthorized collaboration, and/or copying as part of the ongoing efforts to maintain academic integrity at the University of Guelph. All materials submitted to the Dropbox will be included as source documents in the Turnitin.com reference database solely for the purpose of detecting inappropriate use. Use of the Turnitin.com service is subject to the Usage Policy posted on the Turnitin.com site. A major benefit of using Turnitin is that students will be able to educate and empower themselves in preventing academic misconduct. In this course you may screen your own assignments through Turnitin as many times as you wish before the due date. You will be able to review reports that show you exactly where you have properly and improperly referenced outside source materials in your assignment. Please contact me if you have questions or concerns about this software.

### **Online Behaviour**

Inappropriate online behaviour will not be tolerated. Examples of inappropriate online behaviour include:

- Posting inflammatory messages about your instructor, teaching assistants or fellow students
- Using obscene or offensive language online
- Copying or presenting someone else's work as your own
- Adapting information from the Internet without using proper citations or references
- Buying or selling term papers or assignments
- Posting or selling course materials to course notes websites
- Having someone else complete your quiz
- Completing a quiz for/with another student when collaboration is not permitted
- Stating false claims about lost quiz answers or other assignment submissions
- Threatening or harassing a student or instructor online
- Discriminating against fellow students, instructors and/or TAs
- Using the course website to promote profit-driven products or services
- Attempting to compromise the security or functionality of the learning management system
- Sharing your user name and password
- Recording lectures without the permission of the instructor

## Course Schedule Winter 2021, Lectures and Readings (Abbott, 2020)\*

Week	Lecture Topic(s)	Reading and Notes
1	<ul style="list-style-type: none"> <li>○ Class overview, quizzes, exams, assignments</li> <li>○ Hazards and Risk</li> <li>○ Plate Tectonics and Earth's structure</li> </ul>	Chapters 1-2
2	<ul style="list-style-type: none"> <li>○ Earthquakes and faults</li> <li>○ Earthquake predictions and Case Studies</li> <li>○ Ground motion and damage control</li> </ul>	Chapters 3-5
3	<ul style="list-style-type: none"> <li>○ Tsunamis</li> <li>○ Alaskan, Indonesian and Sendai tsunamis</li> </ul>	Chapter 8
4	<ul style="list-style-type: none"> <li>○ Volcanoes – types, products, forces</li> <li>○ Hazards and perceived risks</li> <li>○ Volcanic environments and case studies</li> </ul>	Chapters 6-7
5	<ul style="list-style-type: none"> <li>○ Mass Wasting</li> <li>○ Subsidence – karst landscapes, clay hazards, permafrost hazards</li> <li>○ Geomatics and Hazards</li> </ul>	Chapter 15 <b>Assignment 1 Due Mon Feb 8</b>
Reading Week – No Classes		
6	Monday Subsidence continued <ul style="list-style-type: none"> <li>○ Time permitting midterm review</li> </ul> <b>WEDNESDAY – MIDTERM – Covers everything since week 1</b> <ul style="list-style-type: none"> <li>○ <b>See info on Course Outline and CourseLink</b></li> </ul> Friday <ul style="list-style-type: none"> <li>○ Atmospheric Processes Intro</li> </ul>	Chapter 15 cont  <b>Midterm Wed Feb 24</b> Chapter 9
7	<ul style="list-style-type: none"> <li>○ Energy &amp; heat transfer, Earth's energy balance</li> <li>○ Atmospheric composition &amp; structure</li> <li>○ Weather Processes &amp; Hazardous Weather</li> </ul>	Chapters 9-11, 14
8	<ul style="list-style-type: none"> <li>○ Coastal environments and hazards</li> <li>○ Wave energy and processes</li> <li>○ Changes along a coast due to waves</li> <li>○ Typical landforms and relation to hazards</li> </ul>	Chapters 16, parts of Chapter 8
9	<ul style="list-style-type: none"> <li>○ Fluvial Environments</li> <li>○ Water cycle and river channels</li> <li>○ How rivers and floodplains work</li> <li>○ Urban vs Rural watersheds</li> </ul>	Chapter 13 <b>Assignment 2 Due Mon Mar 15</b>
10	<ul style="list-style-type: none"> <li>○ Past Climate Variability</li> <li>○ Global climate dynamics -&gt; cycles in Earth's climate               <ul style="list-style-type: none"> <li>○ Icehouse-Greenhouse cycles</li> <li>○ Milankovitch and cycles within the last ~3 mya</li> </ul> </li> <li>○ Mass extinctions &amp; BIG events</li> </ul>	Chapter 12, parts of 9  Parts of Chapter 18
11	<ul style="list-style-type: none"> <li>○ Recent Climate Variability – Anthropogenic Changes</li> <li>○ Hazards associated with climate change</li> <li>○ Minimizing impacts of cc</li> </ul>	Chapter 12 cont
12	<ul style="list-style-type: none"> <li>○ CC Conclusion</li> <li>○ Time permitting Final Exam Review</li> </ul>	Chapter 12 cont

\*The schedule may change or be adjusted depending on our progress

## **Key Dates**

**Assignment Due Dates:** Submitted to CourseLink Dropbox by 11:59 pm

Assignment 1 Monday Feb 8, 11:59 pm

Assignment 2 Monday March 15, 11:59 pm

## **TEST Dates:**

Midterm – Wednesday Feb 24, 2021, 11:30am-12:20pm via CourseLink Quiz Tool

Final Exam (yes it is cumulative) – Friday April 23, 2:30-4:30 pm via CourseLink Quiz Tool

## **Teaching Assistants in GEOG\*1350 – W21**

Our course is supported by four Teaching Assistants (TAs) this semester. Their primary role in our course is to support assessment (marking some assignments and tests), and from time to time will support in-class discussions and activities as required. Marking is randomly assigned, so the person that marks Assignment 1 may not be the person that marks Assignment 2. If you have questions about your assignment before you submit it – post those to the Discussion Board on CourseLink and/or see me during office hours.

## **Student Responsibilities**

It is in your best interest as a student to attend lectures, complete assignments and readings. Late assignments will be penalized at the rate of 25% per day. Students whose assignments are late because of a valid medical reason, family emergency or other reason accepted by me will not be penalized. It is expected that you are respectful of each other, the teaching assistants and the course instructor.

## **How to succeed in this course**

I believe success is possible in anything you set your mind to, therefore starting this class and each task associated with it with an engaged, positive and excited attitude puts you well on your way to an excellent experience. Perhaps this semester, Winter 2021, will be a challenge for everyone, rest assured I am going to do my best to help you to succeed, but you need to want to succeed in order for it to work.

There are some other things that will also help you to succeed. Come to class prepared to participate; ask questions; complete your assignments, read them over, read the questions, did you answer and address all the issues? When you are proud of your assignment, hand it in. Talk to me about your assignments; before you hand them and after you get feedback on them. Discussing issues often makes the point and the issue clearer than just considering it once. Learning and comprehending concepts is not done through memorization, I rarely test memory, I want to know that you understand and can relate the concept back to me or to someone else. However, in order to do these things, you need to have a set of tools that often include vocabulary, so these tools will be important to your success. Have fun, I always remember fun things, and events that were mediocre or uninteresting I easily forget. If you come with the right attitude, I will do my best to make this a fun, interesting and exciting class.

*The not so small, small print. Please read and understand the following University-wide policies*

## **E-mail Communication**

As per university regulations, all students are required to check their <@uoguelph.ca> e-mail account regularly: e-mail is the official route of communication between the University and its students.

## **When You Cannot Meet a Course Requirement**

When you find yourself unable to meet an in-course requirement because of illness or compassionate reasons, please advise the course instructor in writing, with your name, id#, and e-mail contact. See the [undergraduate calendar for information on regulations and procedures for Academic Consideration](#).

## **Drop Date**

The last date to drop one-semester courses, without academic penalty, is April 12, 2021. For regulations and [procedures for Dropping Courses](#), see the Undergraduate Calendar.

## **Copies of out-of-class assignments**

Keep reliable back-up copies of all out-of-class assignments: you may be asked to resubmit work at any time.

## **Accessibility**

The University of Guelph is committed to creating a barrier-free environment. Providing services for students is a shared responsibility among students, faculty and administrators. This relationship is based on respect of individual rights, the dignity of the individual and the University community's shared commitment to an open and supportive learning environment. Students requiring service or accommodation, whether due to an identified, ongoing disability or a short-term disability should contact the Student Accessibility Services (SAS) as soon as possible.

For more information, contact SAS at [519-824-4120](tel:519-824-4120) ext. 56208 or email [SAS@uoguelph.ca](mailto:SAS@uoguelph.ca) or see the [Student Accessibility Services website](#).

## **Academic Misconduct**

The University of Guelph is committed to upholding the highest standards of academic integrity and it is the responsibility of all members of the University community – faculty, staff, and students – to be aware of what constitutes academic misconduct and to do as much as possible to prevent academic offences from occurring. University of Guelph students have the responsibility of abiding by the University's policy on academic misconduct regardless of their location of study; faculty, staff and students have the responsibility of supporting an environment that discourages misconduct. Students need to remain aware that instructors have access to and the right to use electronic and other means of detection.

Please note: Whether or not a student intended to commit academic misconduct is not relevant for a finding of guilt. Hurried or careless submission of assignments does not excuse students from responsibility for verifying the academic integrity of their work before submitting it. Students who are in any doubt as to whether an action on their part could be construed as an academic offence should consult with a faculty member or faculty advisor. [The Academic Misconduct Policy is detailed in the Undergraduate Calendar](#).

## **Recording of Materials**

Presentations which are made in relation to course work—including lectures—cannot be recorded or copied without the permission of the presenter, whether the instructor, a classmate or guest lecturer. Material recorded with permission is restricted to use for that course unless further permission is granted.

**Resources**

The Academic Calendars are the source of information about the [University of Guelph's procedures, policies and regulations](#), which apply to undergraduate, graduate and diploma programs.

**Disclaimer**

Please note that the ongoing COVID-19 pandemic may necessitate a revision of the format of course offerings and academic schedules. Any such changes will be announced via CourseLink and/or class email. All University-wide decisions will be posted on the [COVID-19 website](#) and circulated by email.

**Illness**

The University will not require verification of illness (doctor's notes) for the fall 2020 or winter 2021 semesters.