

Final Report for WDI Project in JGE378H5: Natural Hazards: Risk and Vulnerability

Submitted May 1, 2017 by Barbara Murck

- a) What did you do? What happened with regard to the project—i.e., what precisely did you do, what did your TAs do, etc.? Did you do what you planned to do, and if not, why not? Why? Did it change for reasons specific to this class/this year, or for reasons of general practicality given the context?

I did what I had planned to do, with regard to both training and writing-specific instruction and feedback. I also carried out pre- and post-course assessments for the purpose of project monitoring.

As in the previous year, I sent my TAs for writing-specific training to the RGASC; five TAs who had not previously had this training were able to benefit from it. We also were able to take time to calibrate our marking of written work among the group.

The writing activities for the students centred around the multi-part, scaffolded Case Study assignment. All components of this assignment include written work. The assignment consists of:

- Proposal
- Country Risk Profile
- Annotated Bibliography
- Map Project
- Term Paper

Explanations of the assignments and discussion of the objectives happened during the weekly “What’s on This Week” videos, which accompanied the lecture videos. (All of the lectures were moved online this year.) The objectives for each written assignment also are in the Course Syllabus, and detailed in each individual assignment.

Most of the writing-specific instruction, as well as feedback on graded written work, were delivered through the tutorial sessions. I designed the activities, and the TAs delivered them. About half of our tutorials were “Writing Workshops”; one tutorial focused on map-related skills, and the others focused specifically on course content.

The Writing Workshops were as follows (new or newly-reorganized sessions are indicated with “*“):

- WEEK 1: Discussion of Case Study assignment – How to Choose a Topic (and develop an analytical perspective on the topic)
- WEEK 3: How to Write a Research Proposal, and Descriptive/Summative vs. Critical/Analytical Writing*
- WEEK 6: Proposal Feedback, Introduction to Annotated Bibliography, Fixing Common Errors*, and Writing More Concisely*
- WEEK 10: Reverse Outlining and Improving the Organizational Flow of Your Writing
- WEEK 11: Abstracts*, and Using Turnitin to Improve Your Writing*

b) How did it work (objective)? What do you know about the project's results **with regard to the learning objectives** from objective testimony (e.g., analysis of student writing produced)?

Course goals and objectives that are specifically related to writing are for students to:

- complete a multi-faceted research project on a topic related to natural hazards;
- articulate in writing your understanding of the scientific causes and consequences of a variety of natural hazards;
- describe the socio-economic factors that contribute to the vulnerability of individuals and communities to natural hazards;
- articulate in writing a specific research focus, and plan the scope (breadth and depth) of a multi-faceted research project;
- identify, summarize, and critically analyze qualitative and quantitative data from scholarly sources;
- communicate research results in a scholarly term paper format and using basic mapping software.

I believe that these goals and objectives were met, especially for students who participated fully in the course activities. Probably the most significant result was that students rated their own skills in scholarly writing **considerably higher at the end of the course than at the beginning of the course**. Please refer to the Pre-Course Writing Survey and Post-Course Writing Survey for more specific information.

c) How did it work (subjective)? What do you know about the project's results **with regard to the learning objectives** from subjective testimony, potentially including 1) instructor's assessment, 2) TA assessments, 3) student assessment?

I don't have any particular source for this information; I have not yet seen the course assessments.

The TAs reported to me that they thought the quality of the written work on the Term Papers was very good, compared both to earlier in the semester and to other courses in which they had marked papers.

I had students who stopped by my office with feedback such as, "I had completely no idea about the difference between descriptive and analytical writing until we did that tutorial"; and, "I never understood how Turnitin Originality Reports work – now I do."

d) What have you learned? What worked best? What didn't work? What do you know now that you didn't know at the start of the year? How do you feel overall about the project? Did it accomplish the goals that motivated you to propose it?

Overall, I am happy with the way this project worked out. I was happy with it last year, and I feel that the changes and additions that I made this year were useful and successful. I would like to apply for this funding to become part of the base funding for the course. In a class of over 200 students, I definitely

would not be able to devote as much time to intensive writing instruction without the support of funds from this program.

e) What would you change? 1) Do you intend to run this project again, and if so, will there be 2) changes to the course and/or 3) changes to the project based on your experience running it?

I would like to run this project again, if I can acquire support from the program.

There will be changes, because the course itself is changing. I have received funding from the Online Undergraduate Course Initiative, to change JGE378H5 into a fully online course. This will require extensive reworking of all of the tutorials, including a consideration of synchronous vs. asynchronous (live web-based) activities. I feel that the latter will be appropriate for the Writing Workshops, whereas the content-based activities are more amenable to students working on their own, independently.

JGE378H5 Winter 2017
Pre-Course Writing Survey

General Summary

This pre-course survey was administered in January 2017 as part of the monitoring and assessment program for the RGASC Writing Initiative funding for JGE378H5 Natural Hazards: Risk and Vulnerability.

There were 164 completed attempts on the survey (a 74.5% response rate). The survey was anonymous but completion earned the students 0.25 marks towards their participation mark for the course.

Survey Text and Results

Instructions: Please answer all of the questions, based on your current situation. We will ask a very similar set of questions again at the end of the course.

Q1: Which of the following writing-related tasks have you completed before this course, as part of your coursework at the University of Toronto? Choose all that apply.

To summarize Q1: The majority of students reported having previously completed an annotated bibliography (70%), term paper in scholarly format (82%), APA referencing and citations (90%), and composing a thesis statement or research question (68%).

Fewer students reported having prior experience with writing formal project proposals (54%), writing a scholarly abstract (54%), and completing a reverse outline for organizational analysis of written work (21%).

writing a formal project proposal	53.659%
writing an annotated bibliography	69.512%
writing an abstract in a scholarly format	54.268%
writing a term paper in a scholarly format	81.707%
referencing sources using APA-style citations	89.634%
completing a reverse outline as part of an organizational analysis of written work	21.341%
composing a thesis statement or research question for a scholarly paper	67.683%

Q2: For which of the following writing-related skills have you received specific instruction, during previous courses at the University of Toronto? Choose all that apply.

To summarize Q2: The majority of students reported having had previous instruction in how to use APA-style citations (80%), and how to avoid plagiarism (92%).

A somewhat smaller number of students reported having had previous instruction in writing a term paper in scholarly style (62%), how to write concisely with a scholarly tone (51%), how to write an annotated bibliography (58%), and how to compose a thesis statement or research question (59%).

Less than half of students reported having had previous instruction in how to write an abstract (47%), how to write a formal proposal (41%), how to incorporate descriptive and critical analytical components in their writing (37%), and how to use reverse outlining and other methods to improve the organization of their writing (20%).

how to write an abstract	47.561%
how to write a term paper in a scholarly style	61.585%
how to write concisely, with a scholarly tone	50.61%
how to write a formal proposal	40.854%
how to write an annotated bibliography	57.927%
how to use APA-style citations	79.878%
how to use a reverse outline and other approaches to improve the organization of your writing	20.122%
how to avoid plagiarism	92.073%
how to compose a thesis statement or research question for a scholarly term paper	59.146%
how to incorporate both descriptive and critical analytical components in your writing	36.585%

Q3: How would you rate your own skills and strength in scholarly writing, on a scale of 1 to 6 (as shown below)?

To summarize Q3: The majority of students (59%) assessed themselves as having “medium” scholarly writing skills at the beginning of the course.

Approximately 26% self-reported their skills in scholarly writing as “strong” or “extremely strong.”

Approximately 15% reported their skills as “weak” or “extremely weak,” or said that they have “never really done any scholarly writing.”

Extremely Strong	3.049%
Strong	23.171%
Medium	59.146%
Weak	11.585%
Extremely Weak	1.829%
I don't know because I have never really done any scholarly writing.	1.22%
<i>Unanswered</i>	0%

JGE378H5 Winter 2017

Post-Course Writing Survey

General Summary

This post-course survey was administered in late March 2017 and early April as part of the monitoring and assessment program for the RGASC Writing Initiative funding for JGE378H5 Natural Hazards: Risk and Vulnerability.

There were 150 completed attempts on the survey (a 78.9% response rate). The survey was anonymous but completion earned the students 0.25 marks towards their participation mark for the course.

Survey Text and Results

Instructions: Please answer all of the questions, based on your current situation, now that the course is over.

Q1: We addressed the following writing-related skills in this course, primarily through the Individual Case Study Assignment and tutorial-based instruction.

Do you feel that you learned some new things or improved in any of these skills, as a result of the work you did in this course? Please choose all skills in which you think you have improved - even a little bit - or learned something new.

To summarize Q1: The areas in which the most students felt that their skills had improved as a result of course work were how to write an abstract (70%), how to incorporate descriptive and analytical components in writing (60%), and how to write an annotated bibliography (59%).

Areas in which students felt that their skills had not improved as much (or fewer students reported improvements) were how to edit your own writing (37%) and how to compose a thesis statement or research question (39%).

how to write an abstract	70%
how to write a term paper in a scholarly style	54%
how to write concisely, with a scholarly tone	44%
how to write a formal proposal	57.333%
how to write an annotated bibliography	59.333%
how to use APA-style citations	48.667%

how to use a reverse outline and other organizational approaches	42%
how to improve the organizational flow of your writing	48.667%
how to compose a thesis statement or research question for a scholarly term paper	39.333%
how to incorporate both descriptive and critical analytical components in your writing	60%
how to avoid plagiarism	43.333%
how to edit your own writing	37.333%

Q2: Which of these activities or tasks did you participate in or complete, as part of your work in this course? Choose all that you completed.

To summarize Q2: Most students participated in most of the writing-related activities in tutorials.

tutorial on choosing a topic for the Individual Case Study	74%
tutorial on How to Write a Proposal and Annotated Bibliography	79.333%
tutorial on Reverse Outlining and other organizational tools for writing	63.333%
tutorial on editing your own writing - Sample Paragraph analysis	64.667%
Case Study Proposal assignment	93.333%
Annotated Bibliography assignment	78%
Country Risk Profile assignment	93.333%
Google Earth Map Project question on spatial analysis of disasters	80%
scholarly format Term Paper assignment	76.667%

Q3: Which of these activities do you think were useful to you, in improving your writing skills through your work in this course? Please choose any that you found to be useful or a helpful exercise for improving your writing skills.

To summarize Q3: Most students found the Case Study Proposal and feedback to be the most helpful exercise (69%), followed by the Annotated Bibliography and feedback (62%).

The smallest number of student reported benefitting from the tutorial on editing your own writing with a Sample Paragraph analysis (38%). The Term Paper also was infrequently identified (35.3%), but most of the students had not received their feedback by the time the survey had been completed.

tutorial on choosing a topic for the Individual Case Study	47.333%
tutorial on How to Write a Proposal and Annotated Bibliography	54%
tutorial on Reverse Outlining and other organizational tools for writing	42.667%
tutorial on editing your own writing - Sample Paragraph analysis	38%
Case Study Proposal and feedback	68.667%
Case Study Annotated Bibliography and feedback	62%
Case Study Country Risk Profile and feedback	53.333%
Google Earth Map Project question on spatial analysis of disasters	58%
Case Study Term Paper (You might not have received the feedback yet, depending on when you are completing the survey.)	35.333%

Q4: How would you rate your own skills and strength in scholarly writing, on a scale of 1 to 5 (as shown below)?

To summarize Q4: Almost 50% of students rated their own scholarly writing skills as “strong” or “extremely strong,” compared to 26% in the pre-course writing survey.

Less than 5% of students rated their own scholarly writing skills as “weak” or “extremely weak,” compared to 15% in the pre-course writing survey.

The results indicate that students who had previously self-assessed their scholarly writing skills as extremely weak, weak, or medium generally reported **stronger or much stronger scholarly writing skills** in the post-course survey.

Extremely Strong	4.667%
Strong	44.667%

Medium	46%
Weak	4%
Extremely Weak	0.667%
<i>Unanswered</i>	0%

JGE378H5S Winter 2017 Natural Hazards
CASE STUDY PROPOSAL ASSIGNMENT

For this assignment you are asked to write a Proposal specifying the topic that you have chosen as the focus for your Case Study, and outlining the specific focus and basic structure of the Term Paper component of your Case Study.

The Proposal:

- Must be one to two pages in length (approximately 400 to 800 words), typed in a “normal” font size with “normal” margins.
- Must begin with one to two paragraphs summarizing the factual basis of the major disaster, catastrophic event, or hazardous process that you have chosen as your Case Study focus.
 - Please see additional criteria and suggestions for choosing your topic, posted on our course Blackboard site.
- Must include an indication of how you plan to organize the Term Paper, and must indicate what specific focus or perspective you plan to take on the topic.
 - The organizational plan can take the form of a description, or a bulleted list of topics, or a preliminary outline, but it has to demonstrate organizational thought.
- Must reflect the fact that the Term Paper is meant to be an analytical work, rather than just a descriptive work.
 - In other words, you can’t just describe this event and its aftermath or management, you have to choose a specific aspect of the event to analyze in greater depth.
- Must include at least some full-sentence prose (because we would like to detect any major problems with writing mechanics early enough to arrange for help).
- Must include a correctly formatted list (APA style) of at least five references that are relevant to your topic and that you have read.
 - Four of the references should be from scholarly, peer-reviewed sources; one can be from another, non-scholarly source that is still reliable.
- Must be submitted digitally to our course Blackboard site (not in hard copy, and not to Turnitin.com) before **January 27, 2017 by 11:59 p.m.**
 - As per Department of Geography policy, a penalty of 10% per working day will be applied to all late submissions.

Proposal Evaluation Criteria

On the basis of the Proposal assignment, here are the evaluation criteria:

- | | |
|--|------------------|
| • Factual basis of the topic is adequately explained and understood | 5 points |
| • At least five appropriate, relevant, scholarly references are provided | 5 points |
| • Proposal demonstrates evidence of organizational thought | 5 points |
| • Discussion demonstrates an analytical focus | 5 points |
| • Full-sentence prose demonstrates scholarly tone and quality | 5 points |
| TOTAL (will be converted into 5% of the course mark): | 25 points |

JGE378H5 Tutorial February 10, 2017

Instructions:

Take a look at the sample paragraph provided here. Identify three pieces of advice that you would offer to the author if you were in charge of editing and improving the paragraph. Afterward, we will share and discuss some of your ideas, and then we will work on improving the paragraph.

Sample paragraph:

The gigantic tsunami off the Eastern coast of the island of Macarena in 2010 created waves generating power loss and destroying many homes, wiping out 654 km of highways and buildings due to poor construction and causing “a total of \$65 billion in damage, as well as destroying many crops”. (Myers p. 31) It is clear that researchers didn’t predict such an enormous killer tsunami, so the government had not responded quickly enough to the disaster. The tsunami was caused by an earthquake 34 km off the eastern coast. It was the most disastrous tsunamis in Macarenian history to date, and killed 43,000 people. I believe that the fact that the response efforts were so slow is what caused so much of the resulting criticism of the government that appeared in the media. Professor Li Chu in his paper in the journal Natural Hazards reported that the earthquake was caused by subducting rocks on the plate located 20 km below the surface of the ocean. [165 words]

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JGE378H5 Natural Hazards: Risk and Vulnerability

Tutorial Week 3: Writing Workshop

Understanding Descriptive/Summative and Analytical/Critical/Evaluative Writing

Learning Objectives:

- Discover the differences between descriptive and analytical writing
- Identify the characteristics and explore the process of analytical writing

This exercise is based very loosely on, and modified from, an open-source writing exercise from the University of Sydney Learning Centre. Later in the semester we will take this exercise farther by developing a reverse outline or framework for a piece of analytical writing.

Instructions:

Here are two writing samples from actual student work in this course (with permission, and with minor modifications). After reading the two samples, fill in the multiple-choice questions below.

WRITING SAMPLE A

Japan is one of the most seismically active regions in the world, because of its location in a subduction zone (Ping, et al., 2011). On January 17, 1995, between the City of Kobe and Awaji Island in Japan, a 6.9 magnitude earthquake occurred (Yasuoka, et al., 2006). The Kobe earthquake was classified as a strike-slip earthquake and is thought to be caused by movement on a right lateral strike-slip fault (Yasuoka, et al., 2006). The rupture process started north of Awaji Island and spread across the Nojima fault (Ping, et al., 2011). As a result of the earthquake, the land was displaced 1.7 meters horizontally and 1.3 meters vertically (Ping, et al., 2011). The epicenter of the earthquake was located approximately 20km away from the City of Kobe, near the northern part of Awaji Island (DuPont and Noy, 2015), and the focus was 16km below the surface (City of Kobe, 2009). While the Kobe earthquake shaking lasted only seconds, it was the second largest earthquake ever experiences in Japan's history (Okuyama, 2014).

The Kobe earthquake induced mass destruction to houses, building, highways, railways, and the infrastructure of the region (Okuyama, 2014). The financial value of the infrastructure and physical assets that were destroyed is estimated to be between US\$95-147 billion, which represented, at the time, 2.5% of the total Japanese GDP (DuPont and Noy, 2015). In addition to the mass destruction of buildings and other structures, a great deal of physical harm was experienced by the citizens of Kobe and surrounding areas as a result of the earthquake, including over 6,000 casualties, 43,000 injuries, and 315,000 evacuees (Okuyama, 2015).

WRITING SAMPLE B

The Kobe earthquake of 1995 revealed a number of deficiencies with the older construction style of concrete-based buildings and bridges in Kobe. Because the focus of the earthquake was shallow, the shaking at the surface, even though it lasted only seconds, was particularly intense (Okuyama, 2014). The majority of concrete structures failed during the shaking because of minimal confinement and lack of shear reinforcement, which the older building style did not provide (Anderson, Mitchell, and Tinawi, 1996). Information about building and infrastructure failures collected from the Kobe earthquake provided real-world benefits to engineers, who were able to use this information to determine the potential seismic performance of similarly built structures (Bruneau, Wilson, and Tremblay, 1996).

Additionally, during the Kobe earthquake the police, fire department, and ambulances all operated on separate communication lines independent from each other (Tanaka, et. al., 1998). This lack of communication between departments was problematic and caused confusion regarding the transportation of victims. This eventually led to the City of Kobe establishing one of the most advanced emergency medical care systems in Japan (Tanaka, et al., 1998).

The Kobe earthquake provided a crucial opportunity for Japan to learn from concrete building flaws, and revealed the shortcomings in Japan's disaster response mechanism. As an outcome of this event, the city of Kobe and Japan as a whole were able to implement new policies and programs to better manage disasters.

Compare and contrast descriptive and analytical writing:

Read the two writing samples. With your group, discuss and choose the best answer for each of these items by entering "A" or "B" into each of the boxes.

[] is about the Kobe earthquake of 1995

[] is about the consequences of the Kobe earthquake of 1995

[] explains the significance of specific pieces of information about the earthquake

[] provides specific factual information about the earthquake

[] contains a main point to be argued

[] does not contain a main point to be argued

[] answers the instruction, "Critically evaluate the consequences of the 1995 Kobe earthquake."

[] answers the instruction, "Describe the 1995 Kobe earthquake."

[] is a sample of descriptive writing

[] is a sample of analytical writing

Analytical writing process:

In analytical writing, a number of processes should occur:

- You should evaluate and explain the significance of individual pieces of information.
- You should seek to understand the relationships among individual pieces of information and ideas.
- You should try to organise and categorize these pieces of information into new groupings, according to the relationships among them.
- You should try to establish an overall picture of how these ideas relate to each other, and how they contribute to making a whole picture.
- You should be as flexible as possible to the thought of changing this picture and its parts as often as it is necessary.
- You should aim to provide new perspectives on the topic.
- You should be open to comparing, contrasting, and evaluating ideas, including ideas that may seem contradictory.
- Usually, you will need to state and argue for a particular position, with your argument supported by critical evaluation of evidence and consideration of alternatives.

JGE378H5S Natural Hazards: Risk and Vulnerability

Course Information Winter 2017

Course Description

Course title	Natural Hazards: Risk and Vulnerability
Course number	JGE378H5S
Course description	Earth is a dangerous place, and risk is an inherent feature of life on this planet. Some of the events and processes that we call “hazardous,” such as earthquakes, volcanic eruptions, floods, tsunamis, cyclones, and forest fires are natural environmental processes. We define them as hazards only when they pose a threat to human interests. In this course we will examine natural hazards as well as some technological hazards – their causes, their potential impacts on people, and their management and mitigation. [24L] (SCI/SSci)
Lectures	The lectures are pre-recorded and will be available online, through Blackboard.
Tutorials	Fridays 9 and 10 in IB-390 and Fridays 11, 12, 1, and 2 in IB-220

Instructor Information

Name	Barbara Murck, Ph.D.
e-mail	barbara.murck@utoronto.ca
Office location	Geography Department Room DV-3270
Office hours	Open-door policy. Drop by any time, as long as the door is open. You also can make a specific appointment or ask questions by e-mail. I also will maintain an active presence on the Discussion Board on our course Blackboard site.
Phone	905-828-5426 but I am much more available by e-mail.
Teaching Assistants	Contact information will be on our course Blackboard site.

Textbook: Required (will be available from U of T Mississauga Bookstore)

Keller, E.A., D.E. deVecchio, and J.J. Clague, 2015. *Natural Hazards: Earth's Processes as Hazards, Disasters and Catastrophes*, 3rd Canadian Edition, Pearson Education Canada, ISBN-10: 0133076504, ISBN-13: 9780133076509, or ISBN: 9780133542240, 0133542246 for the e-text.

The book will be available in the UTM Bookstore. The e-book is also available from <https://www.vitalsource.com/products/natural-hazards-earth-39-s-processes-as-hazards-john-j-clague-v9780133542240> You do not need to acquire any of the supplementary digital resources from the publisher, such as “My Lab,” “Hazard City,” “Mastering Geology,” or any of that, unless you want them for your own study purposes. Only the book is required. It will also be on reserve in the HMALC Library. If you purchase the e-text, make sure the expiry date is not before mid-April 2017.

We’re using the 3rd Canadian edition. The 2nd Canadian edition (which may be available in used copies) will not be ideal because the page numbers and the chapter numbers will not match the reading assignments.

Prerequisites and Digital Expectations

Exclusions: GGR378H5, ERS317H5

Prerequisite: ENV100Y5/ERS103H5/120H5/GGR112H5/P.I. (basically, 1st-year Physical Geography, Earth Science, or Environment, or permission of instructor)

Online course format: The lectures will be posted online in video format, as a series of four 30-minute lectures per week, archived for later viewing. They can't be streamed – you will need an internet connection to view them. This is not a “distance” course, but it should be possible to complete it from a distance without losing too many points in the course assessment. Please read the course requirements carefully.

Turnitin: Normally, students will be required to submit course assignments to Turnitin.com for a review of textual similarity and detection of possible plagiarism. In doing so, students will allow their work to be included as source documents in the Turnitin.com reference database, where they will be used solely for the purpose of detecting plagiarism. The terms that apply to the University's use of the Turnitin.com service are described on the Turnitin.com website.

See also: <http://www.teaching.utoronto.ca/teaching/academicintegrity/turnitin/conditions-use.htm> and Turnitin Guide for Students: <http://www.portalinfo.utoronto.ca/content/submit-turnitin-assignment>

External Test Centres

Students in this online course are required to write the Term Test and the Final Exam in person and on-campus, as scheduled by the Registrar. If you live more than 125 km from the campus during the term in which you are taking the course, and you are not taking any on-campus courses during the same term, you might be eligible to write the test or exam at an external test centre closer to your residence. Students will be responsible for any fees charged by the external test centre, and any shipping fees. The request must be made at least four weeks prior to the test date or the start of the exam period, in the case of an exam.

If you think you might need and qualify for this service for the Term Test, please contact Academic Counsellor Sabrina Ferrari at sabrina.ferrari@utoronto.ca.

If you think you might need and qualify for this service for the Final Exam, please refer to the following resources and procedures from the UTM Office of the Registrar:

<http://www.utm.utoronto.ca/registrar/current-students/examinations/external-examinations>

https://student.utm.utoronto.ca/calendar//calendar_detail2.pl?Topic=External%20Examinations&Searchstring=external

Course Goals

The general goals of this course are for students to:

- acquire basic scientific knowledge about the causes and consequences of natural geological, geophysical, and hydrometeorological processes that can be hazardous to life;
- consider the connections among environmental change, human activity, and natural hazards;
- analyze the factors that influence risk and determine the vulnerability of a person or community in the context of natural hazards;
- apply basic science and social science concepts to problems related to the management and mitigation of natural hazards;
- explore the spatial aspects of a particular natural hazard event;
- investigate quantitative and qualitative information available in online regional and global disaster and early warning databases; and
- complete a multi-faceted research project on a topic related to natural hazards.

Student Learning Objectives

After successfully completing this course, you should be able to:

- articulate in writing your understanding of the scientific causes and consequences of a variety of natural hazards;
- describe the socio-economic factors that contribute to the vulnerability of individuals and communities to natural hazards;
- cite examples of significant natural disasters in human history;
- locate quantitative information about hazardous events using global databases;
- utilize, without aids, basic terminology with which professionals in disciplines related to hazard and risk management do their work and communicate their research findings;
- articulate in writing a specific research focus, and plan the scope (breadth and depth) of a multi-faceted research project;
- identify, summarize, and critically analyze qualitative and quantitative data from scholarly sources;
- communicate research results in a scholarly term paper format and using basic mapping software.

Course Format and Academic Supports

The principal format for the course is online lectures, combined with in-person, small-group tutorials that will provide opportunities for discussion and collaborative activities. Lectures will be pre-recorded in a series of four videos each week, each approximately 3 minutes long. Videos will be posted at the start of each week, and archived for viewing online at your discretion.

The first two weeks of the course will provide a framework for our discussion about hazards, risk, and vulnerability. After that, each weekly series of lectures will typically begin with an overview of the scientific background needed to understand a particular natural hazard, followed by examples of events and processes that are specific to that hazard. In each series we also examine basic concepts in hazard management and mitigation, using the hazard-of-the-week to illustrate that concept.

We will provide content-related support and writing support in the tutorial sessions, and via the Discussion Board on our course Blackboard site. Here are some other sources of support:

- For course- and content-related queries, please e-mail or speak with Professor Murck (barbara.murck@utoronto.ca) or one of the Teaching Assistants; their contact information will be on our course Blackboard site.
- For department- or program-related queries or to submit documentation regarding a missed test or late assignment, contact Geography Department Undergraduate Academic Counsellor Sabrina Ferrari (sabrina.ferrari@utoronto.ca).
- For support relating to the map project or any aspect of library-based research, please contact Geography and GIS Liaison Librarian Andrew Nicholson (andrew.nicholson@utoronto.ca) or GIS Technician Tanya Kenesky (tanya.kenesky@utoronto.ca) or your TA.
- For additional support on academic skills, please visit the [Robert Gillespie Academic Skills Center](#) in the HMALC, where you will find abundant help available on a wide variety of topics.
- For support relating to temporary or ongoing disabilities, please contact the [AccessAbility Resource Centre](#).
- For queries regarding dropping a course, or missing or deferring an examination, please contact the [UTM Office of the Registrar](#).

Course Rationale

Introduction to Natural Hazard and Risk Assessment	The course provides an introduction to the scientific and socio-economic aspects of natural hazards, risk and hazard assessment, and disaster management. The course is for students in any discipline who may want to undertake a career in field related to natural hazard management or risk management, or students with a general interest in natural hazards and human adaptation to environmental change.
Distribution Requirements	The course can serve as either a Science or a Social Science course for the purpose of Distribution Requirements.
Program Requirements	The course can fulfill a requirement for the following programs: <ul style="list-style-type: none"> • HBA Human Geography Specialist, Major, Minor programs • HSc Physical Geography Specialist, Major, Minor programs • HBA Environmental Management Specialist, Major, Minor programs • HSc Environmental Science Specialist, Major, and Minor programs • HSc Earth Science Specialist, Major, and Minor programs • HSc Environmental Geosciences Specialist program
PGeol/GIT Certification	The course can fulfill part of the requirements for professional certification, Geoscientist-in-Training (GIT). Please contact the Department of Chemical and Physical Sciences for more information.

Assessment Scheme and Dates

Item	Weight	Due Date	Returned Graded (tentative)
Midterm Test	20%	Wednesday February 15, 2017, 8-9 pm in IB-110 (location to be confirmed)	February 27, 2017
Individual Case Study	40%		
• Case Study Proposal	(5%)	January 27, 2017	February 6, 2017
• Country Risk Profile	(5%)	February 10, 2017	February 20, 2017
• Annotated Bibliography	(5%)	March 3, 2017	March 13, 2017
• Map Project	(5%)	March 10, 2017	March 20, 2017
• Term Paper	(20%)	March 31, 2017	TBD
Final Exam	35%	TBD by Registrar in April Exam Period	
Participation	5%	Ongoing – mainly tutorial attendance and engagement. There will be opportunities to make up <u>some</u> of the participation marks from missed tutorials.	

As per the [University Grading Practices Policy](#), please note that after the methods of evaluation have been made known, the instructor may not change them or their relative weight without the consent of at least a simple majority of the students enrolled in the course. Any changes shall be reported to the division or department.

Other Important Dates

A weekly schedule of lectures, readings, and due dates is available on the course Blackboard site and in the Syllabus. The last day to drop an S course from academic record and GPA or to cancel or select Credit/No Credit option is **March 12, 2017**. Reading Week is February 21–24. Classes end on March 31, 2017. Study Break is April 5–10, and **Exam Period is April 6–22, 2017**. **Please don't buy any plane tickets or make irreversible plans until the UTM Registrar has posted the April Exam Schedule.**

Notes and Objectives for Assessment Items

Midterm Test: The Midterm Test will be in written-answer format, at a time and location to be scheduled by the UTM Registrar (see **Dates**, above). Additional information will be posted on the course Blackboard site and discussed in class. The principal **objectives** are to test your comprehension of material presented in class, tutorials, and readings, and to assess your ability to communicate this understanding in written format in an organized manner, using appropriate terminology without aids.

Missed Test: Please refer to the detailed **Policies** section concerning Missed Term Work, below in this document.

Please note: You must attend the Midterm Test for this course **in person**, even though the lectures are online. The test time, date, and location are scheduled by the UTM Registrar on our behalf, and this information will be communicated to you via our course Blackboard site. If you live more than 125 km from the campus and you are not enrolled in any “in-person” courses on the UTM campus during this semester, you might be eligible to write the test in an external test centre at a location more convenient to your home. Please contact Sabrina Ferrari (sabrina.ferrari@utoronto.ca) for information. The request must be made at least four weeks in advance of the test date (preferably sooner).

Final Exam: The Final Exam will be cumulative, covering material from the entire course but with greater emphasis on the second half of the semester. It will be in written-answer format, two hours. The date and location will be posted by the Registrar with the UTM April Exam Schedule. Additional information will be posted on the course Blackboard site and discussed in class. The principal **objectives** are to test your comprehension of material presented in class and in readings, and to assess your ability to communicate your understanding of the material in an organized, coherent manner in written format; utilize appropriate terminology, without aids; cite examples; apply what you have learned, to real and hypothetical disaster scenarios; and synthesize material from different parts of the course.

Missed Exam: Petitions regarding missed exams are handled by the UTM Office of the Registrar > [Petitions](#).

Please note: You must attend the Final Exam for this course **in person**, even though the lectures are online. The exam time, date, and location will be scheduled by the UTM Registrar, and this information will be communicated to you via the website of the UTM Office of the Registrar ([Exam Schedule](#)). If you live more than 125 km from the campus and you are not enrolled in any “in-person” courses on the UTM campus during this semester, you might be eligible to write the test in an external examination centre at a location more convenient to your home. Please contact the UTM Office of the Registrar for information (see <http://www.utm.utoronto.ca/registrar/current-students/examinations/external-examinations>). The request must be made at least four weeks before the start of the examination period.

Individual Case Study: You will select a specific natural hazard or disaster to investigate. The components of the Case Study are: Proposal, Annotated Bibliography, Map Project, Country Risk Profile, and Term Paper. Details will be discussed in class and tutorials. The principal **objectives** are to explore and analyze a particular natural hazard in depth, and report on the results using a variety of academic formats. **Missed or Late Assignments:** Please see the **Policies** section for additional information about extensions and missed assignments.

Proposal: The Proposal is a brief description of the proposed Case Study, with preliminary identification of scholarly sources to be used in the research. The **objectives** are to articulate a specific research focus, delineate the depth and breadth of the topic, and to identify and cite appropriate scholarly resources.

Country Risk Profile: In the Country Risk Profile you will summarize basic demographic, physical geographical, and economic data for the country in which your Case Study event occurred, in combination with historical data on natural disasters in the region. The **objectives** are to explore online sources of quantitative and historical data relevant to natural disaster management, and to synthesize various types of quantitative information in support of your Case Study analysis.

Annotated Bibliography: The Annotated Bibliography comprises a brief description (one paragraph) and analysis (one paragraph) of five scholarly resources relevant to your Case Study. The **objectives** are for you to identify, evaluate, summarize, and cite scholarly resources in support of your Case Study research.

Map Project: The Map Project involves an exploration of the geographic location of the Case Study event, and the portrayal of information relevant to the Case Study, using a map-based format. The **objectives** are to explore the terrain and geographic features of the Case Study location; to learn the basics of a simple mapping software (Google Earth); to design several map elements; and to develop a basic understanding of how maps, map layers, and spatially referenced data can be used to portray and communicate various types of information.

Term Paper: The Term Paper is a research paper written and referenced in a scholarly format, and focused on the identified Case Study topic. The **objectives** are to practice the written communication of research results in a scholarly format; to make use of appropriate scholarly resources; to present a basic factual summary of the selected natural disaster; and to critically analyze an aspect of the event from a management perspective.

Tutorials

The tutorial sessions will be a mix of videos, collaborative activities, discussions, and help sessions for specific assignments. The **participation mark** is earned through attendance at tutorials, and productive engagement in tutorial activities. Occasionally you will be asked to hand in something at the end of a tutorial, based on your work during the session.

You don't have to attend every tutorial session to earn the full participation mark, but you need to attend most of them, and participate productively. There will be several opportunities to boost your participation mark to the maximum of 5% of the course mark, if you have to miss one or more tutorials.

How to Query or Challenge Your Mark on a Test or Assignment

According to UTM policy, you have one month from the date an item is returned to you, during which time you may submit the item for re-marking. No item will be re-marked after the one-month period has passed. Contact Professor Murck (barbara.murck@utoronto.ca) for all queries.

Material submitted for remarking must be accompanied by a brief written explanation detailing your reasons for dissatisfaction with the original mark (such as an addition error, or something you think the marker may have missed). The request must demonstrate that you have considered all sources of feedback given to you along with the marked assignment.

Normally, the item will first be returned to the TA who originally marked it. If you are still dissatisfied, the item may then go to the Course Instructor for reconsideration. Please refer to the course Blackboard site for further information on re-marking.

For re-marking of a final exam, you must contact the [Office of the Registrar](#).

Policy on Religious Observances

As noted in the [Policy on Scheduling of Classes and Examinations and Other Accommodations for Religious Observances](#):

“It is the policy of the University of Toronto to arrange reasonable accommodation of the needs of students who observe religious holy days other than those already accommodated by ordinary scheduling and statutory holidays. Students have a responsibility to alert members of the teaching staff in a timely fashion to upcoming religious observances and anticipated absences. Instructors will make every reasonable effort to avoid scheduling tests, examinations or other compulsory activities at these times. If compulsory activities are unavoidable, every reasonable opportunity should be given to these students to make up work that they miss, particularly in courses involving laboratory work. When the scheduling of tests or examinations cannot be avoided, students should be informed of the procedure to be followed to arrange to write at an alternate time.

It is most important that no student be seriously disadvantaged because of her or his religious observances. However, in the scheduling of academic and other activities, it is also important to ensure that the accommodation of one group does not seriously disadvantage other groups within the University community.”

Since students would normally be aware of upcoming religious observances and examination schedules, a minimum of three weeks advance notice is required. More information is available at www.viceprovoststudents.utoronto.ca/publicationsandpolicies/guidelines/religiousobservances.htm. As with any academic accommodation request, students must submit an on-line Special Consideration Request at <https://utmapp.utm.utoronto.ca/SpecialRequest>

Academic Integrity and Honesty

It is your responsibility as a student at the University of Toronto to familiarize yourself with, and adhere to, both the Code of Student Conduct and the Code of Behaviour on Academic Matters.

This means, first and foremost, that you should read them carefully.

- The [Code of Student Conduct](#) is available from the UTM website (Registrar > Academic Calendar > Codes and Policies) or in your print version of the Academic Calendar.
- The [Code of Behaviour on Academic Matters](#) is available from the UTM website (Registrar > Academic Calendar > Codes and Policies) or in your print version of the Academic Calendar.

Another helpful document that you should read is [How Not to Plagiarize](#), by M. Proctor.

The Code of Behaviour on Academic Matters states that:

“The University and its members have a responsibility to ensure that a climate that might encourage, or conditions that might enable, cheating, misrepresentation or unfairness not be tolerated. To this end all must acknowledge that seeking credit or other advantages by fraud or misrepresentation, or seeking to disadvantage others by disruptive behaviour is unacceptable, as is any dishonesty or unfairness in dealing with the work or record of a student.” – *University of Toronto Mississauga Academic Calendar*

This summarizes what we are all trying to achieve through the implementation of this Code – both students and faculty. We are trying – together – to create an atmosphere of fairness and honesty, in which people can learn and receive appropriate credit for work that they have done.

Note that the Code refers specifically to expectations for instructors, not just students. It is my responsibility to be familiar with these expectations and adhere to them. There are many additional academic requirements related to the integrity of course materials, returning of marked work, maintenance of student privacy, fairness, grading practices, accommodations for students with disabilities, and others. My TAs and I will make every possible effort to meet these expectations.

AccessAbility

U of T Mississauga and the AccessAbility Resource Centre are committed to the full participation of students with disabilities in all aspects of campus life. The [AccessAbility Resource Centre](#) provides academic accommodations and services to students who have a physical, sensory, or learning disability, mental health condition, acquired brain injury, or chronic health condition, be it visible or hidden. Students who have temporary disabilities (e.g., broken dominant arm) are also eligible to receive services.

All interested students must have an intake interview with an advisor to discuss their individual needs. Students who require accommodation are advised to visit the AccessAbility Resource Centre as early as possible to have their needs assessed, as it may take some time to process the application.

For more information please contact the centre at:

Rm. DV-2047 Tel/TTY: 905-569-4699

E-mail: access.utm@utoronto.ca Web: www.utm.utoronto.ca/access

Communications

Always use your @mail.utoronto.ca e-mail for course-related communications. Other e-mail addresses may be filtered as spam and we do not promise to respond to them. All e-mails must contain "JGE378H" in the subject line, and the message must include your full name and student number. Please read the Course Information documents before e-mailing a question, to make sure that it hasn't already been answered.

E-mail is not an alternative to tutorial attendance, nor should it be used to request explanations of material that you missed in lectures. Students should consult www.enough.utoronto.ca for University policies concerning appropriate use of information and communication technology. For course-related queries, please contact the professor or the appropriate TA. For department- or program-related queries or to submit documentation regarding a missed assignment, quiz, or test, please contact Undergraduate Academic Counselor Sabrina Ferrari (sabrina.ferrari@utoronto.ca).

Departmental Policies Regarding Missed Term Work and Extensions

In-class or Online Quiz/Test as per Department of Geography policy: Students **CANNOT** petition to re-write a quiz/test once the test has begun. If you are feeling ill, please do not start the online or in-class test, and seek medical attention immediately. You must have a physician fill out a U of T Student Medical Certificate and submit a request via the online Special Consideration Request form at <https://utmapp.utm.utoronto.ca/SpecialRequest> within 24 hours.

Missed Term Work (Assignment/Lab) as per Department of Geography policy: Late assignments will be subject to a late penalty of 10% per day (including weekends) of the total marks for the assignment. Assignments submitted five calendar days beyond the due date will be assigned a grade of zero. Assignments handed in AFTER the work has been returned to the class cannot be marked for credit. For accommodations on late/missed assignments please see section on "**Extension of Time.**"

Missed Term Work (Quiz/Test) as per Department of Geography policy: In courses with final exams, there will be no re-writes or make-ups for term tests/quizzes missed for University-accepted, verifiable reasons. Instead, the final exam will be re-weighted by the value of the term test/quiz.

Requesting Academic Accommodation using the Online Special Consideration Application: In Geography and Environment courses, professors cannot grant extensions on term work or allow makeups for missed items. If you ask for and receive an extension or a makeup date directly from a professor, without following the appropriate steps as outlined in this document, it will be invalid and may be revoked at any time by the departmental petitions committee.

Informing Your Professor and Submitting Appropriate Documentation: The following steps must be

completed in order to be considered for academic accommodation for any missed quiz/test.

1. Students must inform their professor in writing (e-mail is acceptable) within 24 hours of a test date of any circumstances that prevent them from writing a test.
2. Students must complete a Request for Special Consideration, available online at <https://utmapp.utm.utoronto.ca/SpecialRequest>. Students who miss a test due to circumstances beyond their control (e.g., illness or an accident) can request that the Department grant them special consideration. You must inform your instructor within 24 hours and you have 48 hours from the date of the missed test to submit your online request (late requests will NOT be considered without a "letter of explanation" as to why the request is late). You must present your case to the Department (not the Instructor). Note: The system only supports Microsoft Internet Explorer and Firefox for the time being.
3. Original supporting documentation (e.g., Verification of Student Illness or Injury form, Verification of Extenuating Circumstances form, accident report, etc.) **MUST BE SUBMITTED to the DROP BOX (labeled "Environment and Geography Petition Documentation") located outside Room 3282, Davis Building.** Supporting documentation is required within one (1) week of submitting your online request.

Please note:

- a. If you missed your test for a reason connected to your registered disability, please be advised that the department will accept documentation supplied by the UTM AccessAbility Resource Centre.
 - b. ROSI declarations are not accepted as supporting documentation.
 - c. If your reason for absence is due to a last minute flight due to a family emergency (illness/death etc.) you must provide your flight itinerary INCLUDING the date the flight was purchased as well as boarding passes in addition to proof of death/illness/accident.
4. **Verification of Student Illness or Injury** form: If the reasons for requesting a special exception are related to illness, you should ask your doctor to complete the Verification of Student Illness or Injury form. Documentation MUST show that the physician was consulted within ONE day of the test date. A statement merely confirming a report of illness made by the student is NOT acceptable (such as, "This patient tells me that he was feeling ill on that day"). The Verification of Student Illness or Injury form can be found on the Office of the Registrar's webpage and linked here:
<http://www.illnessverification.utoronto.ca/getattachment/index/Verification-of-Illness-or-Injury-form-Jan-22-2013.pdf.aspx>
 5. **Verification of Extenuating Circumstances** form: If the reasons for requesting a special exception are not related to illness, a form called Verification of Extenuating Circumstances may be used by non-medical personnel (religious leaders, police, etc.) as supporting documentation for petitions and departmental special exception requests. This form can be found on the Office of the Registrar's webpage and linked here:
www.utm.utoronto.ca/registrar/sites/files/registrar/public/shared/pdfs/forms/Verification%20of%20Extenuating%20Circumstance%28s%29.pdf

Please note that the written explanation and documentation that you submit represents an appeal from you, requesting the opportunity to account for that portion of your grade in some other manner. If an appeal is not received, or if the appeal is deemed unacceptable, you will receive a grade of zero for the item you missed. If the appeal is granted – that is, your reason for missing the item is considered acceptable by the committee – then a mechanism for accounting for the grade value of the missed item will be discussed.

A Departmental committee evaluates each request. **Decisions will be communicated by email within two weeks of receipt of all completed documents.** It is your responsibility to ensure your email account is working and able to receive emails. Claims that a Departmental decision was not received will NOT be considered as a reason for further consideration. Contact Sabrina Ferrari (sabrina.ferrari@utoronto.ca) Academic Counselor, should you NOT receive notification of your decision within 2 weeks of submission.

Note that holidays and pre-purchased plane tickets, family plans, your friend's wedding, lack of preparation,

or too many other tests/assignments are not acceptable excuses for missing a quiz, a test, an item of term work, or an extension.

Extension of Time on an Assignment

The following steps must be completed in order to be considered for academic accommodation for any assignment extensions. **Assignments handed in AFTER the work has been returned to the class cannot be marked for credit.**

1. Students must inform their professor in writing (e-mail is acceptable) **IN ADVANCE** of an assignment due date of any circumstances that prevent them from submitting their assignment on time.
2. Students must complete an online Special Consideration Request @ <https://utmapp.utm.utoronto.ca/SpecialRequest> **IN ADVANCE** of the assignment due date.

Note: The system only supports Microsoft Internet Explorer and Firefox for the time being.

3. Original supporting documentation (e.g., Verification of Student Illness or Injury form, Verification of Extenuating Circumstances form, accident report, etc.) **MUST BE SUBMITTED to the DROP BOX (labeled "Environment and Geography Petition Documentation") located outside Room 3282, Davis Building.** Supporting documentation is required within one (1) week of submitting your online request.
4. **Verification of Student Illness or Injury** form: As for a missed quiz, test, or assignment, if the reasons for requesting a special exception are related to illness, you should ask your doctor to complete the Verification of Student Illness or Injury form. Documentation MUST show that the physician was consulted within ONE day of the test date. A statement merely confirming a report of illness made by the student is NOT acceptable (such as, "This patient tells me that he was feeling ill on that day"). The Verification of Student Illness or Injury form can be found on the Office of the Registrar's webpage and linked here:

<http://www.illnessverification.utoronto.ca/getattachment/index/Verification-of-Illness-or-Injury-form-Jan-22-2013.pdf.aspx>

5. **Verification of Extenuating Circumstances** form: As for a missed quiz, test, or assignment, if the reasons for requesting a special exception are not related to illness, a form called Verification of Extenuating Circumstances may be used by non-medical personnel (religious leaders, police, etc.) as supporting documentation for petitions and departmental special exception requests. This form can be found on the Office of the Registrar's webpage and linked here:

www.utm.utoronto.ca/registrar/sites/files/registrar/public/shared/pdfs/forms/Verification%20of%20Extenuating%20Circumstance%28s%29.pdf

For any request for special consideration, the original supporting documentation (e.g., Verification of Student Illness or Injury form, Verification of Extenuating Circumstances form, accident report, etc.) **MUST BE SUBMITTED to the DROP BOX (labeled "Environment and Geography Petition Documentation") located outside Room 3282, Davis Building.** If you are requesting an extension, you are expected to submit your request to the Department before the due date of the assignment, unless demonstrably serious reasons prevent you from doing so. In the event of an illness, if you are seeking a one-day extension, the Verification forms must confirm that you were ill on the due date of the assignment; if you are requesting a longer extension, your documentation must specify exactly the length of the period during which you were unable to carry out your academic work. For extensions of time beyond the examination period you must submit a petition through the Office of the Registrar. <http://www.erin.utoronto.ca/index.php?id=6988>

A Departmental committee evaluates each request for an extension of time. **Decisions will be communicated by email within two weeks of receipt of all completed documents. Please note that students are required to submit their assignment/lab as soon as they are able and they should NOT wait for the decision of the committee.** Note: It is your responsibility to ensure your email account is working and able to receive emails. Claims that a Departmental decision was not received will NOT be considered as a reason for further consideration. Contact Sabrina Ferrari (sabrina.ferrari@utoronto.ca), Academic

Counsellor, should you NOT receive notification of your decision within 2 weeks of submission.

It is your responsibility to follow the appropriate procedures and submit requests for special consideration on time. Failure to do so may result in the committee denying your request.

Should you require further information regarding Special Considerations, please contact the Academic Counselor.

Sabrina Ferrari, Undergraduate Academic Counselor
Room 3282, Davis Building, Telephone: 905-828-5465
email: sabrina.ferrari@utoronto.ca

Equity Statement and Academic Rights

Equity Statement:

The University of Toronto is committed to equity and respect for diversity. All members of the learning environment in this course should strive to create an atmosphere of mutual respect. As a course instructor, I will neither condone nor tolerate behaviour that undermines the dignity or self-esteem of any individual in this course and wish to be alerted to any attempt to create an intimidating or hostile environment. It is our collective responsibility to create a space that is inclusive and welcomes discussion. Discrimination, harassment and hate speech will not be tolerated. If you have any questions, comments, or concerns you may contact the UTM Equity and Diversity officer at edo.utm@utoronto.ca or the University of Toronto Mississauga Students' Union Vice President Equity at vpequity@utmsu.ca.

Academic Rights:

You, as a student at UTM, have the right to:

- Receive a syllabus by the first day of class.
- Rely upon a syllabus once a course is started. An instructor may only change marks' assignments by following the University Assessment and Grading Practices Policy provision 1.3.
- Refuse to use turnitin.com (you must be offered an alternative form of submission).
- Have access to your instructor for consultation during a course or follow up with the department chair if the instructor is unavailable.
- Ask the person who marked your term work for a re-evaluation if you feel it was not fairly graded. You have up to one month from the date of return of the item to inquire about the mark. If you are not satisfied with a re-evaluation, you may appeal to the instructor in charge of the course if the instructor did not mark the work. If your work is remarked, you must accept the resulting mark. You may only appeal a mark beyond the instructor if the term work was worth at least 20% of the course mark.
- Receive at least one significant mark (15% for H courses, 25% for Y courses) before the last day you can drop a course for H courses, and the last day of classes in the first week of January for Y courses taught in the Fall/Winter terms.
- Submit handwritten essays so long as they are neatly written.
- Have no assignment worth 100% of your final grade.
- Not have a term test worth 25% or more in the last two weeks of class.
- Retain intellectual property rights to your research.
- Receive all your assignments once graded.
- View your final exams. To see a final exam, you must submit an online Exam Reproduction Request within 6 months of the exam. There is a small non-refundable fee.
- Privacy of your final grades.
- Arrange for representation from Downtown Legal Services (DLS), a representative from the UTM Students' Union (UTMSU), and/or other forms of support if you are charged with an academic offence.

JGE378H5S Natural Hazards: Risk and Vulnerability
TENTATIVE LECTURE and TUTORIAL SCHEDULE – Winter 2017

Week I: Introduction and Framework: Hazard, Risk, Disaster, and Catastrophe
January 2-6, 2017

Scientific Background:

- ▲ Linkages between natural hazards and the physical environment
- ▲ Natural and anthropogenic hazards
- ▲ Triggers and cascading events
- ▲ Primary, secondary, and tertiary impacts

Basic Management Concepts:

- ▲ Fundamental concepts of natural hazard management
- ▲ Characterizing disasters and catastrophes
- ▲ Natural disasters in Canada and globally: Costs and trends
- ▲ Hazard assessment
- ▲ Risk assessment and multi-risk analysis

Reading: Chapter 1

Tutorial (January 6): No tutorial meetings this week

Week II: Vulnerability and Resilience and Introduction to Geophysical Hazards
January 9-13, 2017

Scientific Background:

- ▲ Plate tectonics: Review
- ▲ Earthquake basics

Basic Management Concepts:

- ▲ Vulnerability, resilience, and adaptive capacity
- ▲ Socioeconomic factors that contribute to vulnerability
- ▲ International Strategy for Disaster Reduction
- ▲ Disaster and response stages
- ▲ Role of science in natural disaster reduction
- ▲ Communication between scientists and decision-makers

Reading: Chapter 2

Tutorial (January 13):

- ▲ Factors that contribute to vulnerability
 - ▲ Discussion of Case Study assignment – please come prepared with ideas for your Case Study topic
-

Week III: Geophysical Hazards: Earthquakes
January 16-20, 2017

Scientific Background:

- ▲ Earthquake mechanisms
- ▲ Locating and measuring earthquakes
- ▲ Seismic hazards

- ⤴ Earthquake prediction
- ⤴ Engineering approaches to seismic mitigation

Basic Management Concepts:

- ⤴ Mitigation
- ⤴ Magnitude-frequency relationship
- ⤴ Prediction and forecasting
- ⤴ Crowd-source mapping and social media in disaster response

Reading: Chapter 3

Tutorial (January 20): Writing Workshop

- ⤴ How to write a research proposal
 - ⤴ Descriptive vs. analytical writing
-

Week IV: Geophysical Hazards: Tsunamis

January 23-27, 2017

Scientific Background:

- ⤴ Tsunamis: Triggers and mechanisms
- ⤴ Impacts of tsunamis
- ⤴ Components of tsunami early warning systems
- ⤴ Introduction to volcanic processes and materials

Basic Management Concepts:

- ⤴ Socio-economic impacts of natural disasters
- ⤴ Cascading events
- ⤴ Early warning systems

Reading: Chapter 4

Tutorial (January 27):

- ⤴ Journey to the Disaster Zone: Japan 3/11 (Video)
- ⤴ Exploring risk and vulnerability in a disaster situation

Due: Case Study Proposal

Week V: Geophysical Hazards: Volcanic Eruptions

January 30-February 3, 2017

Scientific Background:

- ⤴ Volcanism and volcanic eruptions
- ⤴ Volcanic hazards and impacts
- ⤴ Predicting volcanic eruptions

Basic Management Concepts:

- ⤴ Hazard mapping and risk mapping
- ⤴ Hazard monitoring
- ⤴ Alert levels and evacuation protocols

Reading: Chapter 5

Tutorial (February 3):

- ⤴ In the Path of a Killer Volcano (Video)
 - ⤴ Warnings and evacuations – issues for scientists and decision-makers
-

**Week VI: Geophysical Hazards: Landslides, Avalanches, Subsidence, and Coastal Erosion
February 6-10, 2017****Scientific Background:**

- ⤴ Mass wasting: Landslides
- ⤴ Factors affecting slope stability
- ⤴ “Sensitive” earth materials
- ⤴ Permafrost and snow avalanches
- ⤴ Subsidence and coastal erosion

Basic Management Concepts:

- ⤴ Risk perception and preparedness
- ⤴ Rapid-onset, creeping, and slow-onset hazards

Reading: Chapters 6, 7, 8, and 12

Tutorial (February 10): Writing Workshop

- ⤴ Proposal feedback and introduction to Annotated Bibliography
- ⤴ Fixing Common Errors and Writing More Concisely
- ⤴ An Independent Tutorial Activity will be posted this week

Due: Country Risk Profile

**Week VII: Introduction to Hydrometeorological Hazards and “Insurance 101”
Midterm Test – Wednesday, February 15 at 8:00 p.m. in Rm. IB-110
February 13-17, 2017**

Note: The test is in-person, on-campus. Date, time, location determined by UTM Office of the Registrar.

Scientific Background:

- ⤴ Hydrometeorological Disasters: Overview
- ⤴ Role of Climate Change in HM Disasters

Basic Management Concepts:

- ⤴ “Insurance 101”
- ⤴ Disaster Mitigation Planning in Canada

Reading: None (Review Chapters 1–8 and 12 for the test)

Tutorial (February 17): No tutorial meetings this week

Reading Week: February 20–24

**Week VIII: Hydrometeorological Hazards: River Flooding
February 27-March 3, 2017****Scientific Background:**

- ⤴ Fluvial hydrology
- ⤴ Causes, characteristics, and impacts of river flooding
- ⤴ Engineering of river and coastal systems

Basic Management Concepts:

- ⤴ Using the past to predict the future: Time series and statistical arrays
- ⤴ Human intervention/manipulation and its influence
- ⤴ Health impacts of severe weather and natural disasters
- ⤴ Canada and U.S. institutional and governmental response to disasters

Reading: Chapter 9

Tutorial (March 3):

- ⤴ Google Earth Orientation Session facilitated by Tanya Kenesky and Andrew Nicholson
- ⤴ **Note:** Location: **HMALC Smart Classroom A&B**, downstairs in the Library

Due: Annotated Bibliography

Week IX: Hydrometeorological Hazards: Storms

March 6-10, 2017

Scientific Background:

- ⤴ Overview of the atmosphere and the climate system
- ⤴ Cyclonic storms
- ⤴ Storm tracking
- ⤴ Storm surge
- ⤴ Tornadoes and other summer storms
- ⤴ Blizzards and other winter storms

Basic Management Concepts:

- ⤴ Using models to predict impacts
- ⤴ Government response to disasters
- ⤴ Media coverage of disasters
- ⤴ Search-and-rescue protocols

Reading: Chapters 10 and 11

Tutorial (March 10):

- ⤴ Hurricane Katrina: When the Levees Broke (Video)
- ⤴ Disaster response: Role of governments and scientists

Due: Map Project

Week X: Climatological Hazards: Heat Waves, Drought, and Wildfires

March 13-17, 2017

Scientific Background:

- ⤴ Environmental change and climate change
- ⤴ Wildfires
- ⤴ Quantifying heat
- ⤴ Dryness, drought, and desertification

Basic Management Concepts:

- ⤴ Humanitarian response to disasters
- ⤴ Food, water, housing, and refugeeism during disasters
- ⤴ International response: Short-term, long-term, and donor fatigue

Reading: Chapter 13, 14

Tutorial (March 17): Writing Workshop

- ⤴ Reverse Outlining
 - ⤴ Improving Organizational Flow
 - ⤴ An Independent Tutorial Activity will be posted this week
-

Week XI: Biological Hazards, Meteorite Impacts, and Extinction Events

March 20-24, 2017

Scientific Background:

- ⤴ Vectors
- ⤴ Invasive species and pathogens
- ⤴ Mass extinctions
- ⤴ Meteorite impacts

Basic Management Concepts:

- ⤴ The environment and human health hazards
- ⤴ Earth history, the environment, and change

Reading: Chapter 15

Tutorial (March 24): Writing Workshop

- ⤴ Abstracts
 - ⤴ Using Turnitin to improve your writing
-

Week XII: Introduction to Technological Hazards: Lessons Learned

March 27-31, 2017

Scientific Background:

- ⤴ Technological hazards
- ⤴ Chemical releases, nuclear disasters, and oil spills

Basic Management Concepts:

- ⤴ Disasters and social justice: Case Studies
- ⤴ Technological vs. anthropogenic vs. natural disasters

Reading:

- ⤴ Fischer, M.J. (1996) Union Carbide's Bhopal Incident: A Retrospective, *J. Risk Uncert.*, 12 (257-269).
- ⤴ Additional readings will be posted on Blackboard.

Tutorial (March 31):

- ⤴ Final exam review
- ⤴ An Independent Tutorial Activity will be posted this week

Due: Term Paper
