DEPARTMENT OF EARTH SCIENCE
UNIVERSITY OF TORONTO MISSISSAUGA

ERS103H5F LEC0101
Geology and Public Issues
Course Outline - Fall 2016

Class Location & Time	Tue, 11:00 AM - 12:00 PM DV 2072 Thu, 11:00 AM - 12:00 PM DV 2072
Instructor	Marc Laflamme
Office Location	DV 4054
Office Hours	Tu: 1-2pm, Th: 1-2pm
Telephone	905-828-5228
E-mail Address	marc.laflamme@utoronto.ca
Course Web Site	https://portal.utoronto.ca/webapps/blackboard/execute/modulepage/view?course_id=_824203_1&cmp_tab_id=_465764_1&editMode=true&mode=cpview

Teaching Assistant

Course Description

"Civilization exists by geological consent, subject to change without notice." (Will Durant, 1885-1981). Our life is totally dependent on our planet and on what she provides. This course is an overview of our relationship with Earth: how she supports us, how she affects us, and how we affect her. After a quick introduction to how Earth works, topics discussed will include volcanic eruptions, earthquakes, landslides, mineral, energy and water resources, weather and climate change. As citizens of the world, we are, and will increasingly be, required to make decisions about our relation with Earth: we need to be sufficiently informed to contribute to the consequent debates. [24L]

Exclusion: ESS103H1, 102H1; EESA05H3, A06H3, B15H3 (SCI)
Distribution Requirement: SCI

Textbooks and Other Materials

We will be using Stephen Marshak's *Essentials of Geology* as our primary textbook. It is not mandatory, but will serve as an excellent resource for further learning.

Assessment and Grading

Type	Description	Due Date	Weight
Assignment	Science blog	2016-10-06	15%
Term Test	Term Test 1	2016-10-20	25%
Assignment	Opinion Piece	2016-11-10	15%
Final Exam	Final Exam	TBA	45%
		Total	100%

Procedures and Rules

Penalties for Lateness

Late penalty on assignments: 20% of full mark per day, no exceptions.

DO NOT START THESE ASSIGNMENTS ON THE LAST DAY OR YOU WILL FAIL. I cannot stress this enough; each assignment is short, but exceedingly difficult to produce. These assignments are designed to reproduce real-life experiences, and will be graded accordingly. **All assignments must be submitted to Turnitin unless prior arrangements have been made and approved by the course instructor**.

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 onlineExam 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.

Additional Dates of Significance:

September 6th, 2016: Classes Begin

October 11-14, 2016: Fall Reading Week - No classes

December 5th, 2016: Fall Term Ends

December 6-7, 2016: Study Break

December 8-20, 2016: Examination period

Missed Term Work

Within one week of the date of the missed work, students should submit to the course instructor a signed letter explaining the reason for their absence. The letter should include the student's name, phone number, email address, student number and lab/tutorial section number as well as the date of and the description of the missed work. A doctor's note or other appropriate documentation regarding the absence should be stapled to the letter.

If the explanation for the missed work is deemed reasonable after verification of the documentation, the final exam mark will be used as the mark for the missed work. If the explanation is considered unreasonable or no letter is submitted within one week of the missed work, a mark of zero will be assigned for the missed work.

Missed Final Exam

Students who cannot write a final examination due to illness or other serious causes must file anonline petition **within 72 hours of the missed examination**. Original supporting documentation must also be submitted to the Office of the Registrar **within 72 hours of the missed exam**. Late petitions will **NOT** be considered. If illness is cited as the reason for a deferred exam request, a U of T Verification of Student Illness or Injury Form must show that you were **examined and diagnosed at the time of illness and on the date of the exam, or by the day after at the latest**. Students must also record their absence on ACORN on the day of the missed exam or by the day after at the latest. Upon approval of a deferred exam request, a non-refundable fee of $70 is required for each examination approved.

Email Contact Policy

Check your @mail.utoronto.ca email accounts regularly. All official communication from the university to students regarding class assignments, courses, grades, academic administration, and other matters ***are sent only to email addresses that end in @mail.utoronto.ca***. Messages from other email providers can experience problems in both sending to and receiving from @mail.utoronto.ca addresses.

It is mandatory for all students to use their @mail.utoronto.ca email address to ensure that they do not miss important course information, requests, or announcements regarding academic matters.

Communications Policy

Students are welcome and encouraged to visit me during my posted office hours. Visits outside of regularly scheduled office hours can be made by appointment. Correspondence by e-mail is also acceptable. It is mandatory for all students to check their @mail.utoronto.ca email accounts regularly. All official communication from the university to students regarding class assignments, courses, grades, academic administration, and other matters are sent only to email addresses that end in @mail.utoronto.ca. Messages from other email providers can experience problems in both sending to and receiving from @mail.utoronto.ca addresses. You must use your @mail.utoronto.ca email address to ensure that you do not miss important course information, requests, or announcements regarding academic matters. You will be held accountable if you miss any information because you did not check your @mail.utoronto.ca account.

In all email correspondence regarding this course, please note the following:

1. Please send email only from your @mail.utoronto.ca account.
2. In the Subject line of your message, please include the course code and a brief description of the topic, e.g. "[Course code] - Request for an appointment".
3. Please include your full name and student number in all correspondence.
4. Please consult the course syllabus and course website before sending questions by email.
5. Please indicate what steps you took to attempt to answer your question on your own prior to emailing me.

I typically respond to e-mails within 24 hours or within two workdays at the latest. Students are responsible for all information posted to the course Blackboard site (as accessed through http://www.portal.utoronto.ca), and e-mails sent by the Course Instructors and teaching assistants. Please check these regularly to ensure that you do not miss important course information, requests, or announcements regarding academic matters.

Final Exam Information

Duration: 2 hours
Aids Permitted: None

Other Information

Goals:

The goal of this course is to demonstrate the multidisciplinary nature of geological studies. Students will be exposed to the many facets of geology, including the exploratory nature of Earth and planetary sciences, the destructive forces of natural disasters, the intricacies of evaluating the history of life and ecosystems on Earth through time, and ultimately the role of geologists in resource discovery and management.

Topics: ERS103 will cover a wide range of topics which fall under three primary categories: Earth, Climate, and Life:

Earth:

Geology in Deep Time

Surficial Processes and the Rock Cycle

Processes Within the Earth

Earthquakes

Volcanism

Plate Tectonics

Climate:

Weather vs. Climate

Ancient Environments

Icehouse Climate

Greenhouse Climate

Climate Future

Life:

Fossils: Tools of the trade

History of life on Earth

Origin of Oxygen

Advent of Complexity

Evolution of Ecosystems

Mass Extinctions

The Colonization of Land and Sky

Assignments:

The assignments for this course will likely be very different from what you are used to. Rather than have you write a long term-paper, you will be tasked with putting together two concise writing assignments. Each of you will be assigned a role based on the nature of the assignment, and it will be up to you to build a case to defend your point of view. These assignments will require background research, both online and within the confines of the library, so as to produce a high-quality scholarly document. Each assignment will result in a short (max 500 words, single-spaced, 12 point Times New Roman font, 1 inch margins) write-up. I firmly believe that concise writing is an essential skill to learn, especially for anyone interested in professional or academic careers. Note that each assignment will be a different writing style, thus allowing you to compare and contrast effective writing depending on the medium. I strongly urge you to consult the Robert Gillespie Academic Skills Center website (http://www.utm.utoronto.ca/asc/Students/appts.htm), and to make an appointment with their expert staff to help you improve your writing skills.

Referencing style: For your essays, please use the following referencing style: https://en.wikipedia.org/wiki/Parenthetical_referencing. Here is some information I cut and pasted directly from this article:

In-text citation: The structure of a citation under the author-date method is the author's surname, year of publication, and page number or range, in parentheses, as illustrated in the Smith example near the top of this article.

- The page number or page range is omitted if the entire work is cited. The author's surname is omitted if it appears in the text. Thus we may say: "Jones (2001) revolutionized the field of trauma surgery."
- Two authors are cited using "and" or "&": (Deane and Jones, 1991) or (Deane & Jones, 1991). More than two authors are cited using "*et al.*": (Smith *et al.*, 1992).

- In some documentation systems (e.g., MLA style), an unknown date is cited as having "no date of publication" by the abbreviation for "no date" (Deane, n.d.).[6]
- In such documentation systems, works without pagination are referred to in the References list as "not paginated" with the abbreviation for that phrase (n. pag.).[6]
- "No place of publication" and/or "no publisher" are both designated the same way (n.p.) and placed in the appropriate spot in the bibliographical citation (*Harvard Referencing*. N.p.).[6]
- A reference to a republished work is cited with the original publication date either in square brackets (Marx [1867] 1967, p. 90) or separated with a slash (Marx, 1867/1967, p. 90).[7] The inclusion of the original publication year qualifies the suggestion otherwise that the publication originally occurred in 1967.
- If an author published several books in 2005, the year of the first publication (in the alphabetic order of the references) is cited and referenced as 2005a, the second as 2005b and so on.
- A citation is placed wherever appropriate in or after the sentence. If it is at the end of a sentence, it is placed before the period, but a citation for an entire block quote immediately *follows* the period at the end of the block since the citation is not an actual part of the quotation itself.
- Complete citations are provided in alphabetical order in a section following the text, usually designated as "Works cited" or "References." The difference between a "works cited" or "references" list and a bibliography is that a bibliography may include works not directly cited in the text.
- All citations are in the same font as the main text.

Reference list: Examples of book references are:

- Smith, J. (2005a). *Dutch Citing Practices.* The Hague: Holland Research Foundation.
- Smith, J. (2005b). *Harvard Referencing*. London: Jolly Good Publishing.

In giving the city of publication, an internationally well-known city (such as London, The Hague, or New York) is given as the city alone. If the city is not internationally well known, the country (or state and country if in the U.S.) is given.

An example of a journal reference:

- Maynard Smith, John (1998). "The origin of altruism," *Nature* **393**: 639-40.

Cite your sources OR How not to plagiarize: You need to be aware that plagiarism is an academic offence with associated academic regulations that might affect much more than your mark. See section B.1 in the Academic Code:

http://www.utoronto.ca/govcncl/pap/policies/behaveac.html#_Toc469656993

You need to give credit to everyone who developed an idea you are building on. You have to reference the source of an idea, even if you have put it in your own words. Be aware that the converse is also true: the mere fact that you are referencing the source of an idea *does not allow you to use the exact words* from that source. You would have to make sure that a literal quote is clearly visible as such (for example, using quotation marks). Extensive direct quotations - even if clearly marked as such - are not permissible as they are not very common in scientific writing. It is much more common that you paraphrase the idea in your own words (and reference the source where the idea originated from). Check out the U of T document "How not to plagiarize" for some common misconceptions:

http://www.writing.utoronto.ca/advice/using-sources/how-not-to-plagiarize

Academic Skills Workshop

A workshop on literature research, scientific writing and presentation skills will be offered by the Science Liaison Librarian and representatives from the Robert Gillespie Academic Skills Centre. The workshops will be held during class (**Tuesday, September 13 and Thursday September 15**) and will be instrumental in completing the writing assignments. Furthermore, dedicated drop-in sessions will be conducted one week prior to the assignments being due (i.e. **Thursday September 29 and Thursday November 3**) where students can bring their assignments to be commented on by the instructor, TAs, and a representative from the Robert Gillespie Academic Skills Centre. Only completed assignments (i.e. completed rough drafts) will be reviewed. Students are highly encouraged to attend.

How to Submit your Work

Essays must be submitted to Turnitin prior to class (i.e. 11am). Any essays submitted after the end of class will be considered late,

and the 20% penalty will apply. Please note: "Normally, students will be required to submit their course essays to Turnitin.com for a review of textual similarity and detection of possible plagiarism. In doing so, students will allow their essays 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 web site" http://turnitin.com/.

Assignment 1: Expository Science Blog. Due OCTOBER 6, 2016, 11am.

500 words, single-spaced, 12 point times new roman font, 1 inch margins, one quotation.

This assignment will give you the opportunity to take on the role of a science journalist tasked with writing a gripping summary of a hot new scientific article. Your expository letter will summarise one of the four articles provided below all the while showcasing the novelty of the scientific finding described.

One of the main goals of science journalism is to convey complex scientific discoveries to non-experts. Bridging the gap between academia and the general public is not easy; it requires an ability to understand the primary scientific literature in addition to the skills to simplify the subject matter without being condescending. Take care to eliminate subject-specific jargon, and focus on what the new discovery will mean for the day to day lives of non-specialists.

Science journalism articles typically include quotes from the authors. As such,**your blog should include at least one quote, placed between quotation marks and cited, taken directly from the article to represent the direct opinions of the author**. Your letter should also be entirely objective, and not represent an opinion on the topic. Take the time to read a few other science blogs to get a feel for the format. Good examples include:

Scientific American's "Sixty Second Science" http://www.scientificamerican.com/blog/60-second-science/

Wired Magazine: http://www.wired.com/wiredscience/

New York Times Science: http://www.nytimes.com/pages/science/index.html

Please pick **ONE** of the following *Nature* articles to write your blog. You can access these articles directly from the library website:

1) Earth: Prolonged magmatic activity on Mars inferred from the detection of felsic rocks by James J. Wray and colleagues. Nature Geoscience, volume 6, pages 1013-1017, (2013), doi:10.1038/ngeo1994

2) Climate: The Asian monsoon over the past 640,000 years and ice age terminations by Hai Cheng and colleagues. Nature, volume 534, pages 640-646, (30 June 2016) doi:10.1038/nature18591

3) Life: Protracted development of bioturbation through the early Palaeozoic Era by Lidya G. Tarhan and colleagues. Nature Geoscience, volume 8, pages 865-869, (2015) doi:10.1038/ngeo2537

Assignment 2: Persuasive Opinion Piece. Due NOVEMBER 10, 2016, 11am.

500 words, single-spaced, 12 point times new roman font, 1 inch margins, 5 primary references (no quotations).

This assignment is designed to highlight the importance of supportive documentation when making an argument. Everyone is entitled to an opinion, but the strength of an argument rests on the factual evidence provided. As part of a persuasive opinion essay, you are to take a side on one of the topics listed below, and support your argument with primary literature. In your letter, **you must cite five (5) primary sources from reputable journals** that defend your opinion. Note that citing a primary source IS NOT quoting, and you should refrain from having any quotes in your article. Please consult a librarian should you need any help in researching your topic. They will gladly assist you.

Pick one of the following two topics. You will not be evaluated on your actual opinion, only on your ability to support the opinion you present.

1) The fossil record is typically used to explore climate change in the deep past. Do you believe past climatic events can be used to explore current climate change, or are the conditions much too different?

2) Astrobiology is the study of life, and signals of life, in space and on other planets. How do scientists explore life on other planets? Do you believe we will find evidence of life on other planets? Why do you believe this?

Last Date to drop course from Academic Record and GPA is November 9, 2016.