GEOG 3350B – Environmental Change
Section 001 Winter 2019

1. Course Information

Classroom Location:

Monday, 4:30-6:30 pm, UCC 66*
Wednesday, 4:30-6:30 pm, UC 1110*
*location changes posted on schedule (highlighted in yellow) and announced in class.

Contact Information:

Instructor team:	**Dr. Beth Hundey**	**Dr. Katrina Moser**	**Rebecca Doyle (TA)**
Primary method of contact:	**Piazza** Piazza is catered to getting you help fast and efficiently from classmates and the instructor team. Rather than emailing your questions to our teaching team, we encourage you to post your questions on Piazza. Public messages can be answered by anyone in the class including the instructors. Private messages will be seen by the instructor team. Our class page can be found at https://piazza.com/uwo.ca/winter2019/ge03350/home		
Office	D.B. Weldon Library Room 121	SSC 2407	SSC 1430
Office Hours	By appointment		
Phone	519-661-2111 x 81218	519-661-2111 x 80115	
Email	beth.hundey@uwo.ca	kmoser@uwo.ca	rdoyle25@uwo.ca

2. Calendar Description

Course Description

The evidence, causes, and chronology of environmental change with particular emphasis on the Holocene in North America.

Course weight: 0.5
Prerequisite(s): One of Geography 2310A/B, Geography 2320A/B or Geography 2330A/B, or at least 3rd year standing in an Environmental Science or Earth Sciences program.

Prerequisite checking is the student's responsibility

Senate Regulations

Senate Regulations state, "unless you have either the requisites for this course or written special permission from your Dean to enroll in it, you will be removed from this course and it will be deleted from your record. This decision may not be appealed. You will receive no adjustment to your fees in the event that you are dropped from a course for failing to have the necessary prerequisites."

3. Textbook (strongly recommended)

William F. Ruddiman (2014), Earth's Climate, Past and Future, 3rd or 2nd Edition. Freeman, New York. ISBN-10: 1-4292-5525-0; ISBN-13: 978-1-4292-5525-7

Links to additional readings will be available on the course OWL site.

4. Course Format

Classroom culture of participation

This upper-level course requires active participation from students, both for assessment, and to enhance the learning experience of the entire class. Active learning benefits students by supporting higher-level learning and improves retention of material (M.J. Prince, 2004). Participation will be graded, and there are formal and informal expectations of involvement. Lectures will be interspersed with brainstorming, activities, work periods and discussion.

Please come to class prepared to be involved and to be respectful to your classmates and the instructor team. Derogatory or offensive remarks and responses are not acceptable, nor are they effective forms of academic debate.

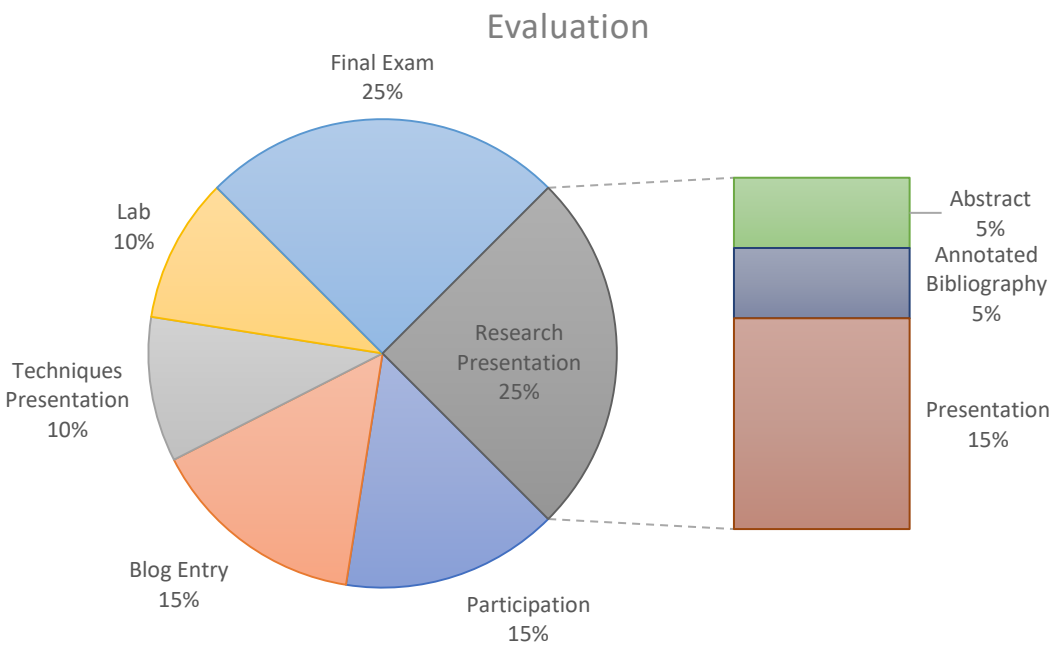
You will work together as a class to plan an in-class mini-conference. As a class you will also "publish" a climate science blog with student-written articles that will be updated on at least a weekly basis.

5. Learning Outcomes

After successfully completing Geography 3350A, students will be able to:

1. Outline a skeleton environmental change research proposal incorporating appropriate methods, records, and techniques, both in groups and independently.
2. Communicate environmental change research to specialist (at the level of classmates) and to non-specialist audiences in both written and oral formats.
3. Critique popular media with a particular focus on climate science.
4. Articulate natural and anthropogenic agents of environmental change, and explain similarities and differences between environmental changes today and in the past.
5. Explain social aspects of environmental change, including vulnerability of populations, examples of mitigation, adaptation, and personal responsibility.
6. Independently interpret and explain key climate science figures, graphs, and maps.
7. Set academic goals, assessing progress, identifying areas for growth, self-reflect and communicating effectively with peers.

6. Evaluation



Assignment Summaries

Further details will be provided as each assignment is introduced in class.

Lab Assignment (10%)

Students will be required to complete a lab assignment that will require written answers and graphing and calculations. Time will be given in class for the completion of the assignment but the assignment will require work outside of class time as well.

Techniques of Environmental Change Science (10%)

In groups, students are required to prepare a presentation and a fact sheet. Students will choose from a list of topics or an alternative topic upon approval of the instructor.

Environmental Change Blog Entry (15%)

As a class, you will create and maintain a climate science blog. Each student will be responsible for creating a blog entry, and edit the entry of another student. The due dates for the blog entries will vary by student and will be determined in the first few weeks of classes. Each blog post will be based upon a scientific article (original research, not a review article) of the student's interest in a climate science field. The article will be aimed at the general, news-reading public.

In-class Conference Presentations (25%)

The in-class conference presentations consists of 3 individually graded components: an annotated bibliography, an abstract, and the presentation. The research topics are open-ended giving students the opportunity to further explore a topic of interest. The topic must be specific and at least 8 academic references must be used. A topic statement and **annotated bibliography** are due before the presentation and feedback will be given by the instructor team. Before the presentation, an **abstract**

describing the main findings of your research is due. In place of a presentation, students may choose to write a research essay.

Participation (15%)

Participation will be decided as a combination of self- and peer- assessment with adjustments/ approval by the instructor team. Class attendance is critical for participation and attendance will be taken.

Grade Breakdown and Explanation

90-100	Excellent. You have surpassed my expectations (very rare)
80-89	Very good. You have fulfilled my expectations
70-79	Good. Expectations are mostly fulfilled with weak areas.
60-69	Satisfactory. There are problems such as confusing writing or expectations are not fulfilled.
50-59	Less than satisfactory. There are major problems.
< 50	Unsatisfactory. Task not fulfilled.

Students are responsible for material covered in the lectures as well as the assigned chapters/sections in the text. Students are expected to attend class.

Policy on Late Assignments:

For Western University Policy on Accommodation for Medical Illness and a downloadable SMC see Policy on Accommodation for Illness.

Students seeking academic accommodation on medical grounds for any missed tests, exams, participation components and/or assignments worth 10% or more of their final grade must apply to the Academic Counselling office of their home Faculty and provide documentation. Academic accommodation cannot be granted by the instructor or department.

For non-documented medical absences or non-medical absences, late assignments will be given a penalty of five percent per day from the final grade for the assignment for a maximum of 5 days. After 5 days the assignment will not be assessed resulting in a grade of 0. Students looking for a change in a deadline are asked to submit a request to the course instructor as soon as possible.

For assignments worth less than 10%, the student must submit a request for accommodation to the instructor. Medical documentation will not be required.

Grades will not be adjusted on the basis of need. It is important to monitor your performance in the course. Remember: *You* are responsible for your grades in this course.

7. Make-up Examinations

Makeups will be granted with approved documentation only. All documentation for missed exams must be provided the Academic Counselling Office and Instructor within 48 hours of the scheduled exam. For missed exams, you must take your documentation to Academic Counselling

within 48 hours of the exam. Otherwise, the instructor will assign a grade of zero. The format and content of make-ups may differ substantially from the scheduled test or examination.

8. Use of Electronic Devices

No electronic devices will be allowed during tests and examinations.

9. Academic Offences

Scholastic offences are taken seriously and students are directed to read the appropriate policy, specifically, the definition of what constitutes a Scholastic Offence.

All required papers may be subject to submission for textual similarity review to the commercial plagiarism detection software under license to the University for the detection of plagiarism. All papers submitted for such checking will be included as source documents in the reference database for the purpose of detecting plagiarism of papers subsequently submitted to the system. Use of the service is subject to the licensing agreement, currently between The University of Western Ontario and Turnitin.com (http://www.turnitin.com).

10. Western's Commitment to Accessibility

The Department of Geography strives at all times to provide accessibility to all faculty, staff, students and visitors in a way that respects the dignity and independence of people with disabilities.

Please contact the course instructor if you require material in an alternate format or if you require any other arrangements to make this course more accessible to you. You may also wish to contact Services for Students with Disabilities (SSD) at 519-661-2147 for any specific question regarding an accommodation. Information regarding accommodation of exams is available on the Registrar's website.

More information about "Accessibility at Western" is available.

11. Medical Issues

The University recognizes that a student's ability to meet his/her academic responsibilities may, on occasion, be impaired by medical illness. The Student Services website provides greater detail about the University's policy on medical accommodation. This site provides links the necessary forms. In the event of illness, you should contact Academic Counselling as soon as possible. The Academic Counsellors will determine, in consultation with the student, whether or not accommodation should be requested. They will subsequently contact the instructors in the relevant courses about the accommodation. Once the instructor has made a decision about whether to grant an accommodation, the student should contact his/her instructors to determine a new due date for tests, assignments, and exams.

Students must see the Academic Counsellor and submit all required documentation in order to be approved for certain accommodation.

12. Mental Health

If you or someone you know is experiencing distress, there are several resources here at Western to assist you. Please visit Western's Health and Wellness website for more information on mental health resources.

13. Support Services

Student Support Services
Student Development Services

14. Course Schedule

	Date, Rm #	Topics	Readings Ed 3	Action Items
1	Monday, January 7 UCC 66	**Why study environmental change?** **Geologic time**	Ch. 1 Section 1-1 to 1-3	*Read the syllabus top to bottom* *Watch intro video and read assignment descriptions* *Add important dates to your agenda* *Reflection Activity (see OWL)*
2	Wednesday, January 9 UC 1110	**Internal interactions in the Climate System** Feedbacks: vegetation, ice, land surface, atmosphere, ocean The Carbon Cycle	Ch. 1 Section 1-4 to 1-9; Chapter 2	*In class:* *Blog article brainstorm* *Select blog article due date* *Complete Reflection Activity 1 (see OWL site)*
3	Monday January 14 UCC 66	**Climate forcing mechanisms** Milankovitch cycles	Sections 1-5, 1-6; Ch. 8.	
4	Wednesday January 16 SSC 1059	**Lab Assignment work period**		*Before class: Read and attempt lab assignment questions*
5	Monday January 21 UCC 66	**Instrumental records and dating methods**	Section 1-3; Section 3-1 to 3-4; Section 3-6 to 3-7	
6	Wednesday January 23 SSC 1059	**Lab Assignment work period**		*Before class: Finish as much as you can so you can ask your questions of peers/ instructor!*
7	Monday January 28 UCC 66	**Environmental change methods**	Section 3-2 to 3-4.	*Select groups and topics for next day*
8	Wednesday January 30 UC 1110	**Environmental Change Preparation Day**		*Group work – in class* Lab Assignment Due
9	Monday February 4 UCC 66	**Earth's history and climate**	Ch. 4; Ch. 5; Ch. 6; Ch. 10;	

	Date, Rm #	Topics	Readings Ed 3	Action Items
10	Wednesday February 6 UC 1110	**Environmental Change Methods: Presentation Day**		*Group work – in class*
11	Monday February 11 UCC 66	**Last Glacial Maximum**	Ch. 13	*In class CLIMAP activity, bring laptop/ tablet*
12	Wednesday February 13 UC 1110	**Climate Since the LGM**	Ch. 14	*Professionalism and participation self-evaluation 1*
13	Monday February 25 SSC 1302	**Dendrochronology** – Guest Lecture Dr. Brian Luckman	Section 17-2 to 17-3; p. 63-66	
14	Wednesday February 27 SSC 1302	**Dendrochronology -** Guest Lecture Dr. Brian Luckman	As above	
15	Monday March 4 UCC 66	**Environmental records proposal activity** **Research project work period and interviews**		*Be prepared to discuss your topics and references* *Annotated Bibliography Due*
16	Wednesday March 6 UC 1110	**Human evolution, settlement, and climate hypotheses**	Ch. 16	*Video: Becoming Human (Nova)*
17	Monday March 11 UCC 66	**Early civilizations and climate impacts**	As above	*Abstract Due* *In class: Civilization collapse jigsaw* *Bring in short-hand notes on your assigned early civilization.*
18	Wednesday March 13 UC 1110	**Early civilizations and climate impacts II**	Ch. 17	
19	Monday March 18 UCC 66	**In-Class Conference**		*Presentation Day*
20	Wednesday March 20 UC 1110	**In-Class Conference**		*Presentation Day*
21	Monday March 25 UCC 66	**Recent Climate Warming: Scientific basis & historical context**	Ch. 18	
22	Wednesday March 27 UC 1110	**IPCC – The Physical Science basis**	Ch. 19 IPCC 5th AR – specific readings TBA	*In-class jigsaw activity*
23	Monday April 1 UCC 66	**Climate Simulations**	Ch. 20	*Computer activity* *Please bring a computer*

	Date, Rm #	Topics	Readings Ed 3	Action Items
24	Wednesday April 3 UC 1110	**Mitigation/ Adaptation**	TBD	*Mind-mapping activity* *(Campus Field Trip?)*
25	Monday April 8 UCC 66	**Exam Review**		