GGR314H1 – Global Warming
SUMMER 2019

LECTURES: Mondays and Wednesday 12-2pm in SS 1071
TUTORIALS: Wednesdays (see last page for schedule)

The MIDTERM TEST will be held in class on Monday May 27th (12-1:30pm)

INSTRUCTOR: Anastasia Hervas anastasia.gousseva@mail.utoronto.ca
OFFICE HOURS: Wednesdays 10:30am-12pm in SS5060

TEACHING ASSISTANTS: Catherine Jimenea, Tal Litmanovitch, Lika Miao

COURSE WEBSITE: Quercus (accessible via http://q.utoronto.ca)
Please consult the course website regularly for: lecture slides, assigned readings, grades, additional course materials, and important announcements.

COURSE OVERVIEW
Global warming is one of the most important issues today. This course provides a comprehensive analysis of human-induced climate change, with a strong focus on the scientific basis of the problem. Links between the carbon cycle, the earth’s climatic responses and feedbacks, and the socio-economic drivers of global warming will be explored in detail. The course will consider specific impacts on agriculture, forests, and water resources, as well as mitigation and adaptation options along with technical and institutional barriers to implementing those options.

By the end of the course, students should develop a solid understanding of the scientific principles behind the current state of knowledge in climate change science. Students will also be able to critically evaluate media reports and discern the common misconceptions and misrepresentation of global warming issues.

NOTE: This is a science course/social science course. The emphasis of the course is on scientific understanding of global warming.

COURSE STRUCTURE
Course material will be presented in lectures (2 hours in length with breaks), tutorials, and in assigned readings. All students are expected to attend lectures and tutorials, and are responsible for catching up with materials that they may have missed due to special circumstances. Tutorials will serve as an opportunity to participate in student-led
discussion of the assigned readings. All students are expected to complete the assigned readings prior to the corresponding tutorials.

COURSE MATERIALS
There is no assigned textbook for this course. Course materials include:

- **Lecture slides** will be made available on the course website
- **Lecture notes package** available for purchase at “The Copy Place” - 720 Spadina avenue
- **Tutorial readings** will be available on the course website

*The lecture notes package contains an exhaustive set of notes with detailed explanations of concepts covered in class. It is meant to serve as a reference guide. However, please note that some changes to the course have been made to accommodate the summer schedule. Your attention will be directed throughout the course to the required sections in the notes package (the course will not cover everything in the package).

EVALUATION
Break-down of the final grade is as follows:

- **Tutorial Discussion Lead and Participation** 10%
- **Weekly online questions** (due May 10th, 17th, 24th) 12% (4% each)
- **Midterm Test** (May 27th) 23%
- **Assignment** (due June 10th) 20%
- **Final Exam** 35%

**Weekly online questions**

Online questions will be made available on quercus on May 6th (due on the 10th), 13th (due on the 17th) and 21st (due on the 24th) covering their corresponding week’s material. Answers should be submitted on quercus, by midnight on their due date. A late penalty of 5% per day (including weekends) will apply, up to a maximum of 5 days late. Students will not be able to submit the questions more than 5 days past the due date. No make-up questions will be provided. Weekly questions are intended to engage students with course material and help them study for the midterm.

**Midterm Test**

There will be a 90-minute in-class midterm test (the format and topics will be announced). All students are expected to write the midterm test, with exception of those under severe circumstances.
Missed midterm test: If, for some extraordinary reason, you do miss the midterm, you must notify me by email as soon as possible, preferably within 24 hours of the test. A University of Toronto Medical Certificate or other appropriate documentation is required to qualify for a make-up test (see http://www.illnessverification.utoronto.ca). Please be advised that the medical certificate must explicitly state that you were unfit to write the term test. Please consult your college registrar if you are having difficulties during the term that prevent you from completing your course work in a timely manner. For non-medical emergencies, your registrar may be able to provide a letter documenting your situation. Be aware that submitting a note which has been altered or obtained under false pretences is considered a very serious offence by the University.

Tutorial Discussion Lead

Students will arrange themselves in partners and prepare to lead a (12-15 minute) discussion of an assigned reading during one of the tutorials. Readings and discussion dates will be assigned in the first tutorial session on Wednesday May 8th. Each group will post a concise point-form summary of their assigned reading (2-3 take-home points) and two discussion questions on the class discussion board on quercus.

Research Paper Assignment

The final assignment is a research paper (2500 words) intended as an opportunity to apply the concepts you learned in the course to a practical problem or policy. The response papers should be well-researched and well-supported by academic literature. The assignment will be evaluated on clarity of argument, logic and flow, understanding of key concepts, use of appropriate references, and overall quality of writing. Marks will be deducted for poor writing.

All submissions are electronic – on Quercus – and must be in word format (no pdf).

Late assignments: A penalty of 5% per day will be applied to late assignment submissions (including weekends). Assignments handed in more than 5 days late will not be accepted. Assignments submitted after 11:59pm on their due date will be considered 1 day late. June 15th is the last day to submit any late assignments.

Extensions

Please be mindful of the short time frames of the summer course. I am open to considering extensions in very difficult circumstances. However, I highly recommend that students try to finish assignments on time to avoid further stress of falling behind. A University of Toronto Medical Certificate or other appropriate documentation is
required to be considered for an extension (see http://www.illnessverification.utoronto.ca).

Extension requests must be submitted in writing (by email) at least 24 hours before the deadline along with the appropriate documentation. No exceptions.

Final Exam

The final exam will follow a similar format to the midterm test, and will cover lecture material (presentations, lecture notes, corresponding chapters, and tutorial key points) from the entire course, with an emphasis on in-depth understanding and synthesis of the issues and concepts that were taught. Final exam date and location will be announced by the Faculty of Arts and Science and may be held at any point during the exam period, June 19 – 26.

EMAIL

Please feel free to contact me by email for administrative reasons, booking an appointment, or quick questions (please come by during my office hours for longer inquiries). Be sure to consult the course syllabus and/or the course website for due dates, and test or assignment information. Always indicate GGR314 in the email subject line.

RE-MARKING POLICY

Please vigilantly review the comments on any graded work. If, after carefully considering the feedback, you still believe that an item of your work has been incorrectly/unfairly marked, please submit a written proposal for re-evaluation to the instructor (via email) clearly stating which parts of the item should be re-graded and the reasons for this. Please consider that upon re-marking, your grade may go up or down or remain the same. Requests for re-marking must be submitted no later two weeks after the item grade and feedback had been released online.

ACCESSIBILITY

The University of Toronto is committed to accessibility. If you require accommodations for a disability, or have any accessibility concerns about the course, the classroom or course materials, please contact Accessibility Services as soon as possible: disability.services@utoronto.ca or http://studentlife.utoronto.ca/accessibility

ACADEMIC INTEGRITY

There is a zero-tolerance policy for academic offense in this course and it will be dealt with strictly and in accordance with the University’s procedures. Plagiarism is a very
serious academic offense at the University of Toronto, and carries very serious consequences! It is the students’ responsibility to educate themselves on the rules and guidelines of academic integrity (“I didn’t know I was plagiarizing” is NOT an excuse!).

Plagiarism includes, but is not limited to, quoting (or paraphrasing) the work of an author (including the work of fellow students) without proper citation. Submitting any academic work for which credit has previously been obtained or is being sought is also considered an offense. Other serious academic offences include, but are not limited to, falsifying documentation and misrepresenting identity. Please consult the "Rules and Regulations" section of the Arts and Science Calendar for further information: www.artsandscience.utoronto.ca/ofr/calendar/rules.htm.

If you have any questions or doubts about what constitutes an academic offense, please do not hesitate to ask me. Remember: it is never worth it to commit an academic offense! There is nothing to be gained from it, and the consequences can be serious and detrimental for your future goals.

COURSE SCHEDULE

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<thead>
<tr>
<th>Date</th>
<th>Lecture Topics *</th>
<th>Tutorials</th>
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<tbody>
<tr>
<td>Mon. May 6th</td>
<td>Introduction</td>
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<tr>
<td>Wed. May 8th</td>
<td>Observations and Trends</td>
<td>Tutorial 1 – intro and arrange groups</td>
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<td>Mon. May 13th</td>
<td>The Carbon Cycle</td>
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<td>Wed. May 15th</td>
<td>Climatic Response</td>
<td>Tutorial 2 – discussion</td>
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<td>Mon. May 20th</td>
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<td>Victoria Day – No classes</td>
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<td>Wed. May 22nd</td>
<td>Climatic Response cont’d</td>
<td>Tutorial 3 – discussion</td>
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<td>Mon. May 27th</td>
<td>MIDTERM</td>
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<tr>
<td>Wed. May 29th</td>
<td>Climate Models and Projections</td>
<td>Tutorial 4 – assignment help</td>
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<td>Mon. June 3rd</td>
<td>Impacts on Agriculture and Forests</td>
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<td>Wed. June 5th</td>
<td>Heat Stress; Water Impacts</td>
<td>Tutorial 5 – discussion</td>
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<td>Mon. June 10th</td>
<td>Scenarios and Drivers of Climate Change</td>
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<td>Wed. June 12th</td>
<td>Response Options and Technologies</td>
<td>Tutorial 6 – discussion</td>
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June 19-26   EXAM WEEK

* This proposed schedule of lecture topics is subject to change

Weekly online questions due: Fridays May 10th, 17th, 24th.

Research paper assignment due Monday June 10th.
Tutorial discussion lead: by sign-up on one of the “discussion” tutorials. Please sign up for a discussion day/article with a partner during the first tutorial on May 8th.

TUTORIAL SECTIONS AND LOCATIONS
*Students must attend the tutorial section that they are signed up for on acorn.

TUT0101: Wednesday 2-3pm in ES 1016M TA: Catherine Jimenea
TUT0102: Wednesday 2-3pm in LM 123 TA: Lika Miao
TUT0201: Wednesdays 3-4pm in ES 1016M TA: Catherine Jimenea
TUT0202: Wednesdays 3-4pm in LM 123 TA: Lika Miao