# McGill University Department of Geography
# GEOG 205 Global Change: Past, Present and Future 2015

This course examines the changes that have occurred in the global environment, through the last 2 million years (Quaternary) to the present day, and the possible changes in this century associated with the greenhouse effect, climate change and land use change. The course has three components:

1. Present-day climate & climate change: how the present-day patterns of climate and vegetation are generated and distributed, basics of climate change;
2. Changes in the Earth's climate and its causes, as demonstrated by vegetation and landscapes during the last 2 million years (through the last "Ice Age" to the recent past); the ways in which we study these changes; can these past variations be used as evidence against global warming or human's role in it?
3. Human impacts on environments in the past, present and future – with a continental and global focus.

Lectures will be Tuesday and Thursday, 10:05 - 11:25 hr in Maass Chemistry Building 112.
*This course has no prerequisites, but is a science course and will be challenging.*

## REQUIREMENTS

**Readings:**

Imbrie, J. and K.P. Imbrie, 1979. *Ice Ages: Solving the Mystery*. Harvard University Press, Cambridge, MA. (The entire, short book is required reading.) A hard copy of this book is on reserve at the Humanities and Social Sciences Library in the McLennan-Redpath Library Complex.

Additional reading will be required, but available online. Readings will be posted on the "myCourses" site.

Powerpoints and supporting lecture texts (from both instructors) will be posted on the "myCourses" site.

## COURSE EVALUATION

The final grade for the course will be composed of the following:

| | |
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| Two term tests, in-class Feb 10 (25%), Mar 17 (25%) | 50% |
| Two assignments (10% each) | 20% |
| Final exam (centrally scheduled during exam period) | 30% |

The final exam is cumulative. Formats of all exams will have a variety of questions, from true and false to comprehensive essay.
Students must sit both exams, and complete both assignments to pass this course.

## INSTRUCTOR– PROF. GAIL CHMURA AND GUEST LECTURERS

**To contact Prof. Chmura use the addresses below and put GEOG205 in the subject line.**
**office** Room 628, Burnside Hall;(514) 926-6854, gail.chmura@mcgill.ca
**Office hours by appointment.**

**Teaching Assistants**: Contact Teaching Assistants at GEOG205TA@hotmail.com

**SCHEDULE CONFLICTS**

In the past, some students have signed up for this class at the same time as another class or lab, and missed most lectures. This is illegal and cannot be used as an excuse. We expect that if you will miss a class that you will make alternate arrangements to catch up on material or find out vital announcements.

**CLASS ETIQUETTE**

Out of common courtesy, your instructors request a few things of you. While students are in class, they are expected to give their full attention to the professor or the film, if one is being shown. Reading, talking, sleeping, and leaving before the end of class are impolite. If you know before class that you will have to leave early sit towards the back near the door so as not to disrupt the class. Likewise, if you arrive late, please enter from the back of the class.

**STUDENTS WITH DISABILITIES**

McGill's Office for Students with Disabilities offers support if you feel that difficulties and impairments are hindering your academic performance while at McGill or if you require assistance with access. Contact them regardless of whether the difficulties you are experiencing are permanent or temporary *(514-398-6009, http://www.mcgill.ca/osd)*. The assistance offered at the OSD targets a wide variety of situations, from medical diagnoses to mental health issues and anxiety disorders, and also includes long term support to accompany students with Learning Disabilities, ADD or ADHD, Asperger's and autism.

The office is located on the lower floor for the Redpath Library. Its entrance is accessible from MacTavish, underneath the arch, across from Service Point.

**LATE ASSIGNMENTS**

Unless you have received permission to miss the deadline (e.g., you have a medical excuse or other crisis) your score will be reduced by 10 points for every day it is late, including weekends.

**MISSED EXAM**

A make-up exam will be available only to those students who have valid reasons for missing the exam. These include medical problems (a doctor's note is necessary) and family emergencies. If you have missed the exam, contact Prof Chmura as soon as possible. We cannot provide a make-up for the final exam; this is arranged by the University.

*McGill University values academic integrity. Therefore, all students must understand the meaning and consequences of cheating, plagiarism and other academic offences under the Code of Student Conduct and Disciplinary Procedures (see <http://www.mcgill.ca/integrity> for more information).*

*Although you may discuss your assignment questions, preparation of answers must be an individual effort.* ***Your written material must be your own and unique****.*

*In accord with McGill University's Charter of Students' Rights, students in this course have the right to submit in English or in French any written work that is to be graded.*

*For information on university and department policies for student assessment, please go to http://www.mcgill.ca/geography/studentassessment*

*In the event of extraordinary circumstances beyond the University's control, the content and/or evaluation scheme in this course is subject to change.*

*Additional policies governing academic issues which affect students can be found in the McGill Charter of Students' Rights.*

## GEOG 205 Global Change: Past, Present and Future
## Tentative Course Schedule winter term 2015

| Date | Topic |
|---|---|
| Jan 6 | Introduction to class |
| Jan 8 | How does vegetation reflect climate around the world (biomes)? |
| Jan 13 | How does climate vary with time and space? |
| Jan 15 | Film: The Great Global Warming Swindle |
| Jan 20 | Intro to geologic time, dating techniques and critical climate events in Earth's history |
| Jan 22 | The Ice Ages: the Evidence on the Land; Film: the Recent Ice Age |
| Jan 27 | Ice Ages: Evidence in the ocean and ice; Film: Coring the Greenland Ice Cap |
| Jan 29 | Enormous lakes and serious erosion: the story of the melting ice |
| Feb 3 | Rapid climate change!: The "Younger Dryas" |
| Feb 5 | Film: Land of the Mammoth |
| Feb 10 | **Exam 1 (covers material through & including Feb 3, but not after)** |
| Feb 12 | Changes in the levels of land and sea **(Assignment 1 distributed)** |
| Feb 17 | Megafaunal Extinctions – the mammoth almost made it |
| Feb 19 | Slow climate change: the "Climatic Optimum or Hypsithermal", |
| Feb 24 | The "Medieval Warm Period" the "Little Ice Age"<br>(**Assignment 1 due, Assignment 2 distributed**) |
| Feb 26 | ENSO Events - swinging between two extremes |
| Mar 3 | Reading Week |
| Mar 5 | Reading Week |
| Mar 10 | Planetary Boundaries: has humanity exceeded the carrying capacity of Earth? Part 1 |
| Mar 12 | Planetary Boundaries: has humanity exceeded the carrying capacity of Earth? Part 2<br>(**Assignment 2 due**) |
| Mar 17 | **Exam 2 (covers material from Feb 5 through and including March 12)** |
| Mar 19 | Mass urbanization: Environmental challenges and solutions |
| Mar 24 | Cities from Space: Remote Sensing Urbanization |
| Mar 26 | global water - TBA |
| Mar 31 | Global water - TBA |
| Apr 2 | Preserving river ecosystems, their habitats and biota (part 1) |
| Apr 7 | Preserving river ecosystems, their habitats and biota (part 2) |
| Apr 9 | Course review or additional lecture, video or discussion |

Other important dates

Tuesday, Jan 20 add/drop deadline

Tuesday, April 14 is the last day of classes but follows a Friday schedule for McGill classes

April 16 -29 is the final exam period.