

# GGR308 H1S 2015 - Physical Aspects of the Canadian Arctic and Subarctic

Department of Geography  
University of Toronto

Instructor: Dr. Kailey Stewart

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Lectures: Thursdays, 12-2, SS1072

Office hours: Thursdays 2-3 or by appointment

TA: April Dalton

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## Prerequisites

This is a science course. It is recommended that you have the equivalent of at least one full-year science course at the 200 level. Please see me after class if you are unsure your background meets this criterion.

## Course description

The physical environment of the Arctic and Subarctic is a fascinating expression of the extreme change in climatic conditions that characterize this region. Extended periods of darkness and sub-zero temperatures are punctuated by rapid thawing and extended daylight for a brief growing season each year. Limited direct human influence and landscape modification mean that natural processes shaping the region are clearly visible. The goal of this course is to acquaint students with regional climatic conditions and the influence climate has on shaping the physical environment and the life it holds. A key goal of this course is for students to develop an informed appreciation for this extreme environment and to understand its significance both regionally and globally.

## Course objectives

- Gain an understanding of the physical geography characterizing the Arctic and Subarctic
- Develop an appreciation for the interconnectedness of physical processes occurring both spatially and temporally, and the importance of these connections for human activity
- Become acquainted with some of the current research and research challenges related to furthering our knowledge of high latitude environments
- Explore some principal methods and approaches employed by researchers studying Arctic systems
- Improve scientific and academic writing, research, and thinking skills

## Evaluation

Assignment part I	10%
Assignment part II	10%
Final submission	20%
Mid-term	20%
<u>Final exam</u>	<u>40%</u>
Total	100%

**Assignments submission**

Please submit a hard copy of assignments at the beginning of the lecture on the day that they are due. Assignments turned in after the beginning of class will incur a 5% deduction, and a 5% per day penalty will be applied for each subsequent day your assignment is late. Please submit late assignments to the drop box in the Department of Geography and Planning main office on the 5<sup>th</sup> floor of Sidney Smith Hall. They will be time stamped at 5pm. Keep in mind that the office closes at 5 pm sharp so please be there before then to avoid an additional 5% deduction.

**Missed tests and deadlines**

For illness, you must have a health care professional fill out the official U of T medical certificate (<http://www.illnessverification.utoronto.ca/>). If you miss a test or are late handing in an assignment due to illness or other emergency, email me as soon as possible, and no later than one week from the date of the test. Please consult your college registrar if you are having difficulties during the term that prevent you from completing your course work. For non-medical emergencies, they may be able to provide a letter documenting your situation.

**Email communication with the course instructor**

Please use your @utoronto.ca address when corresponding with me. I cannot guarantee that messages sent from other email providers (gmail, hotmail, etc.) will not end up in my junk folder. Please use "GGR308" as the subject heading in your emails. I also encourage you to meet me in person with any questions. If you cannot make office hours, we can arrange a time to meet that is convenient for both of us.

**Classroom etiquette**

Please refrain from internet use and texting during the lectures. This can be extremely distracting for students sitting nearby. If you must use your cell phone please be courteous and leave the classroom.

**Academic integrity**

Please remember the seriousness with which the University of Toronto treats academic dishonesty of any form, particularly plagiarism. For more information on what constitutes plagiarism, visit:

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

It is a serious academic offense to submit work under your own name that has been written to any extent by someone else. Please ask the instructor or your TA if you have any questions regarding academic integrity.

**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, course materials and assignments, and exams, please contact Accessibility Services as soon as possible via email ([disability.services@utoronto.ca](mailto:disability.services@utoronto.ca)). To better understand the scope of services offered, visit <http://studentlife.utoronto.ca/accessibility>.

**Course overview – GGR308 H1S 2015: Physical Aspects of the Arctic and Subarctic**  
**Instructor: Kailey Stewart**

Lecture	Date	Theme	Notes
1	01/08	Introduction to the Arctic and Subarctic and course overview	
2	01/15	High latitude climate	
3	01/22	The cryosphere	
4	01/29	Permafrost and periglacial geomorphology	Assignment Part I due
5	02/05	Arctic hydrology	
6	02/12		Mid-term test, lectures 1-5
		Reading week	
7	02/26	Freshwater systems (lakes, ponds, rivers, wetlands)	Assignment Part II due
8	03/05	Oceans and coastal processes	
9	03/12	Aquatic ecosystems	
10	03/19	Terrestrial ecosystems	Final Assignment submission
11	03/26	The modern Arctic in context: Long-term and Quaternary environmental change	
12	04/02	Arctic in the future: environmental changes, human response and resource development	

**Required readings**

Recent journal publications related to the lecture themes will be assigned prior to each class and you are expected to have read the assigned readings in advance. All assigned journal articles are available electronically through the University of Toronto Library webpage.

Note that these articles are meant to be challenging and much of the language used will be specialized to that particular field of study. Try to glean what you can. Looking up unfamiliar words may be helpful. We will gain a deeper understanding of the articles through class discussions and small group work.

## Supplementary resources

ACIA. 2005. Arctic Climate Impact Assessment. Cambridge University Press, 1042p.  
<http://www.acia.uaf.edu>

NOAA. 2012. Arctic Report Card. National Oceanic and Atmospheric Administration.  
<http://www.arctic.noaa.gov/reportcard/>

Woo, Mink-ko. 2012. Permafrost Hydrology, Springer, New York. (Available electronically through UofT library and Amazon.ca).

## Blackboard

Some course materials and communication will be distributed using Blackboard, an online course platform. I will make every effort to post lecture materials on BB prior to the lecture. Please note that these presentations are meant to compliment material and discussions held during the class and that you are responsible for all material covered during the scheduled lectures, whether or not you are present.

### *Logging into the GGR308 Blackboard course website*

Go to the U of T portal login page at: <http://portal.utoronto.ca> and log on using your UTORid and password. Once you have logged into the portal you will find the link to the GGR308 course website along with links to all your other Blackboard-based courses. If you need help using Blackboard, the U of T portal page contains the relevant links.

### *Activating your UTORid and password*

If you need information on how to activate you UTORid and set your password for the first time, please go to: [www.utorid.utoronto.ca](http://www.utorid.utoronto.ca)