

Geography 3315/ Geology 3130
Glacial Systems
Winter Term, 2017

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Lectures: Wednesdays, Fridays 8:30 – 10:00 in RB-3024

Course Description:

This course is an introduction to the topics of glaciology and glacial geomorphology. The understanding of the topic helps in our understanding of the geomorphology of approximately 30% of land surface that is, or has been affected by glaciation recently. It also helps us understand the relationships between ice and global, and local, hydrology. The impact of global climate change will be most visible in the changes observed in glacial landscapes but the impact of those changes will be felt across the globe – especially in coastal communities.

In this course we will study the nature and behaviour of glacial ice – the physics of ice formation (ex. mass balance) and movement. We will learn how glacial ice impacts the landscapes and to what extent. We will consider glacial landforms – depositional and erosional, and will learn how they are formed and under what conditions. Differences between alpine and continental glaciation – the process and the landforms – will also be highlighted.

We will also learn about the glacial history of the planet. Special emphasis will be placed on the glacial history of Canada and Northwestern Ontario.

Course Objectives:

Students will be expected to show thorough understanding of the following glacial systems concepts:

- Glaciers and Glacier Dynamics
- Distribution of Glaciers (modern and historical)
- Glacial Erosion
 - Processes
 - Landscapes and Landforms
- Glacial Deposition
 - Processes
 - Landscapes and Landforms

Glaciofluvial processes
Erosion
Deposition
Landforms

Time permitting:

Glacial history of Northwestern Ontario

Textbook:

Glaciers & Glaciation, 2nd Edition
Benn, D.I. and Evans, D.J.A., 2010, Hodder Education, 802 p.

Course Grading:

Progress Exam	25 %	(Feb. 10)
Midterm Exam	35 %	(Mar. 15)
Final Exam	40 %	
Assignments	up to 15%	(optional*)

*There are 3 optional assignments in this course. Each one is worth 5% and can be used to reduce the weight of either Progress or Midterm exam. For example, a student could choose to reduce the weight of Progress exam by 5% and the Midterm exam by 10% if they completed all 3 assignments. Each lab will have a strict deadline and must be completed before that time. No exceptions will be considered.

Course Policies

The following course policies are consistent with those of the Geography Department and Lakehead University.

1. Regular attendance is expected in lectures.
2. Any absence due to illness, disability, or domestic affliction should be reported to the instructor. Absence due to extracurricular activities (e.g. athletics) should be discussed with the instructor **PRIOR** to the absence. If you miss a class, it is your responsibility to obtain the notes from a classmate. I can provide you with any handouts, but will not provide you a repeat of the lecture or my lecture notes.
3. Students with special needs should talk to me at the beginning of the course and register with the Student Success Centre.
4. Tardiness is frowned upon. Be late at your own risk.
5. Assigned readings, when provided, are to be read prior to the next lecture. This will allow you to get the most out of the lectures and ask informed questions.
6. Questions may be asked **anytime** during lectures. I won't be offended.
7. No make-up exams will be given without a medical excuse backed by a medical certificate. No one will be allowed to write the tests or the final exam **prior** to the scheduled date.
8. Progress marks will not be posted as per University regulations pertaining to the Privacy Protection Act. In order to obtain up-to-date grade status you must contact me directly or email me from your registered LU account (@lakeheadu.ca domain name).