GEOLOGY 429 GEOGRAPHY 429
GLACIAL & PERIGLACIAL GEOLOGY
WINTER 2019

Lectures  TR 8:30 – 9:45 pm CL 420, Jan 8 to April 11, 2019

Labs   R 14:30-17:15 p.m.  CL 312, Lab Discussion, seminars CL 315 dry lab, CL 322 wet lab

Instructor  Dr. Janis Dale, CW 234.5, 585-4840 Office hours: T 1:30 -3:00, Wed 9:30 – 2:30, or make an appointment

Lab Instructors  Matt Thompson, LB 316  Office Hours TBA


Grading  Midterm Exam  20% TBA  
Final Exam  30% Tuesday April 16, 9:00 am
Term Assignments  25% Five throughout term
Glacial Project(s)  20% To be discussed
Participation/PopQuiz  5%

Course Information

The midterm, glacial project and final exam are considered to be absolute requirements for the course and students will receive a NP if not completed. The final exam is inclusive and covers all materials from the entire course including the term assignments.

The University of Regina promotes a learning environment that is free from all forms of harassment and discrimination. If there is any student in this course who, because of a disability, may have a need for accommodations, please come and discuss this with me, as well as contacting the Coordinator of Special Needs Services at 585-4631. Students are responsible for understanding and following the academic regulations of the university, this includes dates for dropping courses, plagiarism, etc. Please consult your calendar or you can consult with me if you have additional questions.

If you have any questions regarding the course, please ask me!

Course Description

An advanced course on glacial processes, environments and landscapes. Topics cover the physics of glaciers, glacial and periglacial processes and the resulting landforms. Special attention is paid to the Canadian arctic environment and the history of glaciation in Canada, particularly the last glacial episode, Wisconsin in Saskatchewan. Assignments relate to the lecture material and are spread out over the semester. They include map and aerial photo work, lab and field study (if possible) and library research. A list of project topics will be provided and work on them will cover the entire semester. All exam questions will be drawn from lecture, laboratory assignments and reading materials suggested throughout the course, (hint: utilize your textbook!). The final exam will be comprehensive but will concentrate on the second part of the term.

Course Deliverables

By the end of this course you should be able to address the following:

1. Appreciate the importance of glacial processes and deposits in understanding the present physical environments of glaciated terrains;
2. Solid understanding of how the physics of glaciers reflect former environmental and glacier conditions and dictate resulting glacial landscapes;
3. Understand how glaciers, erode, transport and deposit materials;
4. Can identify glacial landforms from aerial photos, maps, sedimentary deposits and explain how they are thought to form.
5. Understand glacial deposits as a resource and means of prospecting.
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TENTATIVE COURSE OUTLINE & EVENTS

Topics Covered and textbook readings

Introduction: What is a glacier? Types of Glaciers and Current Glaciers and Climate Change Implications
Readings: Chapters 1 & 2

Glacial Ice, Mass Balance and Glaciers on the Move
Readings: Chapter 3

Glacial Hydrology: Processes
Readings: Chapters 4,

Glacial Erosion: Processes and Landforms
Readings: Chapter 5

Meltwater and Glacial Erosion: Processes, Landforms and Landscapes
Readings: Chapter 6

Terrestrial Glacial Deposition: Entrainment and Transport
Readings: Chapter 7

Terrestrial Glacial Deposition: Tills and Landforms, Drift Prospecting
Readings: Chapter 8

Leftovers and Periglacial- time permitting

Events
Midterm Break – February 19th to 23rd 2019
Midterm Exam Tentative Mid Feb. TBA
FINAL EXAM TUESDAY APRIL 16, 2018, 9:00, 3 HOURS Weeks 1 to 15.

Assignments
Dates will be weather dependent
Lab 1 Assignment 1 Getting into Glaciers!
Lab 2 Assignment 2 or 3 Snow Lab (field study) or Glaciers on the Move
Lab 3 Assignment 3 or 2 Glaciers on the Move or Snow Lab (field study)
Lab 4 Assignment 4 Glacial Deposits and Fabrics
Lab 5 Assignment 5 Glacial Chronology or Field Trip (weather dependent)

How do we go from the top photo to the bottom photo?

Leftovers and Periglacial landforms: Drift prospecting