Course Instructor | Dr. Scott Lamoureux | Email: scott.lamoureux@queensu.ca
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Office | D126 Macintosh-Corry Hall |
Contact Time | Three 1.0 hour lectures per week | Phone: 613-533-6033
Format | Lectures |
Class Assessment | Data analysis #1 20% |
| In class quiz (late January) 20% |
| Data analysis #2 20% |
| In class quiz (Feb-Mar) 20% |
| Final quiz (April) 20% |

COURSE OVERVIEW

The goal of this course is to provide students with a background in Arctic System Science and contemporary issues in Arctic. While the emphasis of material will be on Canadian examples and context, in large part due to my experience in this region, the material broadly applies to all polar regions, including the Antarctic. Arctic System Science covers a wide range of natural science topics that are focused on identifying how different components of the Arctic environment function, interact, and are sensitive to changes caused by climate and human activities. The course will present a selection of topics in Arctic System Science, with the assumption that students will have some previous coursework in the natural sciences to support their experience.

LEARNING OUTCOMES

- To provide a broad scientific understanding of the major processes and systems that operate in polar regions
- Advanced concepts in Earth System Science
- To apply scientific concepts to practical and contemporary issues surrounding resource development, infrastructure and Inuit and First Nation cultures
- Extend data analysis skills to work with relevant time series to recognize and interpret processes

COURSE TOPICS

Introduction to polar regions, Climate, Cryosphere: snow/ice, Permafrost, Periglacial geomorphology, Arctic hydrology, Lakes, ponds and wetlands, Freshwater ecosystems, Terrestrial ecosystems, Oceanography, Coastal systems, Marine ecosystems, Long term and Quaternary environmental change, Recent and projected changes

COURSE READINGS

There is no single book that covers the range of material presented. Therefore, required readings will be based on recent scientific reports that are available for download. Additional online readings from selected textbook and scientific literature will also be used.