Course Instructor | Dr. Christopher Omelon | Email: c.omelon@queensu.ca
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Offices | D102A Mackintosh-Corry Hall | Phone: 613-533-6000 ext. 79036
Contact Time | One 1.5 hour lecture per week; One 3.0 hours laboratory per week
Format | Lectures are asynchronous (i.e., pre-recorded and posted to OnQ) but students are expected to attend weekly scheduled lab sessions.
Class Assessment |
| Lab Assignments (4) | 40% |
| Lecture Quizzes (4) | 20% |
| Final Project | 35% |
| Participation | 5% |

COURSE OVERVIEW

This course provides background knowledge and practical experience in some of the methods of measurement of environmental parameters normally collected in physical geography research studies. These include aspects of climate (energy and radiation fluxes, temperature, humidity, wind, precipitation), surface and groundwaters (temperature, turbidity, conductivity, cations and anions), soils and sediments (moisture, grain size, biogeochemical characteristics). It also introduces geophysical (i.e. GPR) and remote sensing measurements.

LEARNING OUTCOMES

By the end of this course, students will:
- Identify and describe Earth’s major “spheres” and their interactions
- Understand the fundamental principles of environmental measurements
- Gain experience with taking environmental measurements and understand data collection
- Identify a research topic of interest, and determine data requirements to address this question
- Write a “research proposal” that applies knowledge to a specific scientific problem
- Effectively communicate results in both oral and written formats
COURSE TOPICS

- Atmosphere: climate past and present
- Hydrosphere: nature and characteristics of surface waters and groundwaters
- Pedosphere: soils and sediments, biogeochemical cycling
- Lithosphere: subsurface environments, geophysical tools

COURSE READINGS

- To be provided by the instructor.