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DEPARTMENT OF
GEOGRAPHY AND PLANNING

GPHY 315 - Advanced Field Measurements and their Analysis

Contact Time	2 x 1.5 hour lecture/week; 1 x 2 hour lab/week
Format	Lectures and lab periods
Class Assessment	Seminars Presentations (2) 15% Laboratory Assignments (4 of 5) 50% Final Project and Presentation 25% Attendance and Participation 10%

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), and soils and sediments (moisture, grain size, biogeochemistry). The course also provides an introduction to the use of remote sensing and geophysical tools to characterize surface and subsurface environments.

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.