

## **Field Techniques in Hydrogeology**

Earth Sciences 416

Section: D100

Term: 2008 Spring

Instructor: Dr. D.M. Allen

Discussion Topics: General:

Field Methods in Hydrogeology is intended to complement the theoretical aspects of hydrogeology (physical and chemical) by providing students with hands-on experience using hydrogeological equipment (data loggers, pumps, chemical sampling equipment), implementing sampling and testing protocols, and observing state-of-the-art monitoring and geophysical tools.

The course entails preparatory research and data interpretation on the hydrogeology of the Fraser Delta (including surficial geology, regional geochemistry and geophysical characteristics), a week at a hydrogeology field site on the Fraser River Delta, the extensive analysis and interpretation of data gathered during the field session complemented with regional data acquired during preliminary investigations, and the completion of a detailed hydrogeological report.

This inter-university field school is also attended by students from the University of British Columbia, University of Calgary, University of Alberta and the University of Western Washington. The course normally runs for about three weeks following Spring Session Final Examinations.

Course Topics:

1. Regional Hydrogeology of the Fraser Delta and Examination of Regional Data Sets
2. Site Geology and an Introduction to Field Techniques
3. Flow System Characterization in Tidal-Influenced Aquifers
4. Water Quality Sampling
5. Hydraulic Response Tests
6. Infiltration Measurement Techniques
7. Measurement and Sampling Procedures for Westbay Multiport System

Course Organization:

2 lectures/lab sessions (pre-field session): April 3rd from 3:30-5:30 (flexible)

## **Field Techniques in Hydrogeology**

April 30th from 9:30-12:30.

A 5-day field session May 1st to May 5th (Thursday to Monday)

The pre-field session reading and work assignments (containing geophysics, geochemistry and surficial geology exercises related to the regional hydrogeology) will be incorporated into the final report.

Grading: 1. Final Report 80%

2. Participation 20%

Required Texts: None.

Recommended Texts: Selected Readings.

Materials/Supplies: None.

Prerequisite/Corequisite: Prerequisite: EASC 304, EASC 412

Corequisite: EASC 410

Recommended: EASC 207 and/or EASC 307

Notes: Be aware that during the field trip there will be periods of strenuous hiking, hiking close to cliffs and crossing roads with busy traffic. Appropriate clothing and footwear should be worn. Further details regarding safety, food, housing and field supplies will be discussed prior to the field trip.

This outline is derived from a course outline repository database that was maintained by SFU Student Services and the University's IT Services Department. The database was retired in 2014 and the data migrated to SFU Archives in 2015.