

## Quaternary Geology

Earth Sciences 403

Section: D100

Term: 2014 Spring

Instructor: Dr. Brent Ward

(Email: bcward@sfu.ca; Phone: 778-782-4229; Office: TASC 1 Room 7235)

Discussion Topics: General:

This course is intended for senior undergraduate students and graduate students who possess a general background in geology and also have some training in related science disciplines such as geography and biology. This course provides an in-depth examination of Quaternary geology (i.e., the geology of the past 2.6 million years). Topics include Quaternary processes and sediments; stratigraphy, geomorphology, surficial geology, and Quaternary geochronology. The emphasis is on developing an understanding of (1) the recent geologic record in four dimensions (time being the fourth dimension), (2) important natural processes that have shaped the landscape during the Quaternary and (3) Quaternary sediments and landforms. Principles and concepts are illustrated with examples from Western Canada and the adjacent northwestern U.S. The course has a strong field emphasis within the constraints imposed by winter weather.

Course Organization:

There will be a 2-hour lecture each Friday. I may also lecture in at least a portion of the lab period. On many Fridays, however, field trips will replace the lecture. DO NOT schedule any other courses on Friday. In addition to Friday field trips, we will have a 3-day excursion to the Channeled Scablands in central Washington in March or beginning of April.

Grading: Field Report Channeled Scablands 20%

Term Presentation 15%

Field notes for day and half day fieldtrips 5%

Class participation 5%

Mid-Term Examination 20%

Final Examination 35%

Required Texts: None. Assigned readings: A collection of research papers will be distributed during the class. The articles provide information on the Quaternary geology of British Columbia; some articles are pertinent to the field trips.

Recommended Texts: *Glacial Geology; Ice Sheets and Landforms*. Bennet, M.R. and Glasser, N.F. 1996. John Wiley and Sons

Materials/Supplies: None.

Prerequisite/Corequisite: Prerequisite: EASC 201, EASC 209W or GEOG 213, and EASC 308

Notes: As we will be in the field a minimum of 8 days in late winter/early spring, be prepared for cool wet weather. You will need a backpack, field boots, a trowel, a camera, and standard items including a field notebook, pen, and pencils.

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

## **Quaternary Geology**

worn. Further details regarding safety, food, housing and field supplies will be discussed prior to the field trip.

\*There will be a supplementary fee of \$70\*

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.