

UNIVERSITY COLLEGE OF THE FRASER VALLEY

COURSE INFORMATION

DISCIPLINE/DEPARTMENT: GEOGRAPHY

IMPLEMENTATION DATE: WINTER 95

Revised: Winter 1997

GEOGRAPHY 402

Quaternary Geology and Geomorphology

4

NUMBER OF COURSE

DESCRIPTIVE TITLE

UCFV CREDITS

CALENDAR DESCRIPTION: This course will examine selected aspects of the stratigraphy, geomorphology and surficial geology of the Quaternary. Glacial and fluvial depositional models introduced in Geography 202 and 302 will be reviewed. Regional emphasis will be placed on southwestern British Columbia and adjacent regions of the United States. Fieldwork is an essential component of this course.

RATIONALE: A fourth year course in Geography that is an integral component of the physical geography requirement for a geography major. The course will also be recognized as part of the British Columbia Association of Professional Geoscientists course curriculum.

COURSE PREREQUISITES: Geography 302 or Geography 202 with permission of instructor.

COURSE COREQUISITES:

HOURS PER TERM FOR EACH STUDENT	Lecture	40	hrs	Student Directed	
	Laboratory	35	hrs	Learning	hrs
	Seminar		hrs	Other - specify:	
	Field Experience		hrs	_____	hrs
				TOTAL	75

MAXIMUM ENROLMENT: 25

Is transfer credit requested? **:** Yes **9** No

AUTHORIZATION SIGNATURES:

Course Designer(s): Sandy Vanderburgh

Chairperson: D. Gibson
Curriculum Committee _____

Department Head: D. Gibson

Dean: J.D. Tunstall

PAC: Approval in Principle
_____ **(Date)**

PAC: Final Approval: February 25, 1997
_____ **(Date)**

Geog 402 Geology and Geomorphology
NAME & NUMBER OF COURSE

SYNONYMOUS COURSES:

(a) replaces _____
 (course #)

(b) cannot take _____ for further credit
 (course #)

SUPPLIES/MATERIALS:

TBA

TEXTBOOKS, REFERENCES, MATERIALS (List reading resources elsewhere)

TEXTS: TBA

OBJECTIVES:

This course will present selected aspects of the Quaternary geology and geomorphology of southwestern British Columbia and adjacent parts of the United States. Emphasis will be placed on the Quaternary geology and geomorphology of the Fraser Valley, Lower Mainland, and Washington State. Students will apply many of the skills and techniques developed in earlier physical geography courses to solve various field problems. Upon successful completion of the course students will be able to demonstrate an understanding of the surficial geology and geomorphology of the region...important for those students wishing to pursue a career in the earth and environmental sciences. A strong emphasis is placed on field work in all aspects of the course.

METHODS:

This course will be organized around a series of lectures, laboratories and field trips. There will be a 2 hour lecture followed by a 3 hour laboratory. On many of the days field trips will replace both the lecture and the lab. In addition, at least 2 weekend field trips will be scheduled. In total, a minimum of 8 days will be spent in the field.

STUDENT EVALUATION PROCEDURE:

Laboratory and Field Reports	50%
Mid-term examination	20%
Final examination	30%

COURSE CONTENT

Lecture Topics

1. The Quaternary Period - an overview.
2. A review of glacial and periglacial geomorphology.
3. Stratigraphic Concepts: procedures for analysing surface outcrops and subsurface cores, terminology, concepts unique to the Quaternary, stratigraphic code, correlation.
4. Geochronological Techniques.
5. Quaternary Stratigraphy - the evolution of Quaternary Stratigraphic concepts; the classical regions - Alps and American Midwest.
6. The Quaternary of BC with emphasis on southwestern BC.
7. Models of glacial depositional environments.
8. Models of fluvial depositional environments.
9. Soils in the Quaternary record.
10. Palynology.
11. Tephrae.
12. Sea-level changes.

Labs and Field Trips

1. Quaternary deposits of the Lower Mainland.
2. Quaternary deposits of the Fraser Valley.
3. Surficial deposits/subsurface coring techniques, Fraser River Delta.
4. Geomorphology of the Channelled Scablands, Central Washington State (overnight).
5. Geomorphology/surficial geology of the Thompson River Valley, Kamloops area, B.C. (overnight).
6. Geomorphology, Quaternary deposits, and geohazards of southwestern B.C. and southern Vancouver Island (overnight).