

**UNIVERSITY COLLEGE OF THE FRASER VALLEY**

**COURSE INFORMATION**

**DISCIPLINE/DEPARTMENT:** Geography

**IMPLEMENTATION DATE:** May 1994

**Revised:** \_\_\_\_\_

Geography 202  
**SUBJECT/NUMBER OF COURSE**

Introduction to Geomorphology  
**~~DESCRIPTIVE TITLE~~**

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**~~UCFV CREDITS~~**

**CALENDAR DESCRIPTION:** Geography 202 is a first course in geomorphology that will build on numerous concepts developed in Geography 102. Emphasis will be placed on the process-geomorphic systems useful in the understanding of the physiography of British Columbia. This includes the analysis of glacial, fluvial, coastal, and mass movement processes and landforms. A weekend field trip in the Fraser Valley and Cache Creek area and local in-class trips will develop practical field skills in landform analysis and are required to obtain course credit.

**RATIONALE:**

**COURSE PREREQUISITES:** Geography 102

**COURSE COREQUISITES:** None

<b>HOURS PER TERM FOR EACH STUDENT</b>	<b>Lecture</b>	<b>30</b>	<b>hrs</b>	<b>Student Directed</b>	
	<b>Laboratory</b>	<b>15</b>	<b>hrs</b>	<b>Learning</b>	<b>hrs</b>
	<b>Seminar</b>		<b>hrs</b>	<b>Other - specify:</b>	
	<b>Field Experience</b>	<b>15</b>	<b>hrs</b>	_____	<b>hrs</b>
				<b>TOTAL</b>	<b>60 HRS</b>

**MAXIMUM ENROLMENT:** 35

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

**AUTHORIZATION SIGNATURES:**

**Course Designer(s):** Dr. Sandy Vanderburgh

**Chairperson:**

**Curriculum Committee**

**Department Head:** David J. Gibson

**Dean:** J. D. Tunstall Ph.D

**PAC: Approval in Principle**

**PAC: Final Approval:** May 25, 1994

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**(Date)**

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**(Date)**

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**SYNONYMOUS COURSES:**

(a) replaces \_\_\_\_\_  
(course #)

(b) cannot take \_\_\_\_\_ for further credit  
(course #)

**SUPPLIES/MATERIALS:**

**TEXTBOOKS, REFERENCES, MATERIALS (List reading resources elsewhere)**

Easterbrook, D.J., 1993. Surfaces Processes and Landforms.  
MacMillan Publishing Company, Toronto.

**OBJECTIVES:**

This course is intended to introduce students to the fields of geomorphology necessary for understanding the physiography of British Columbia. Particular emphasis will be placed on the diverse natural landscape of the Fraser Valley and Lower Mainland and on developing practical field skills for the identification and analysis of landforms. Upon successful completion of this course students will be able to advance to Geography 302 and will demonstrate an understanding of basic fluvial geomorphology, glacial geomorphology, coastal geomorphology, and mass movement processes. Throughout the course the application of lecture material to contemporary geomorphic-environmental problems will be addressed.

**METHODS:**

The format of the course includes lectures, laboratory sessions and assignments, assigned readings, out-of-class projects, and field trips. The lecture topics will emphasize conceptual and theoretical issues and will be supplemented by the use of audio visual aids and field experience.

Laboratory assignments will mainly emphasize techniques and the analysis and interpretation of geomorphic data.

**STUDENT EVALUATION PROCEDURE:**

Field Trip Report	10%
Laboratory Exercises	20%
Lab Exam	20%
Midterm Examination	20%
Final Examination	30%

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## **COURSE CONTENT**

### **Lecture Topics**

1. Nature and scope of geomorphology
2. Brief history of geomorphology
3. Review of geology (plate tectonics, rock types, and structural geology)
4. Rocks and weathering
5. Mass movement processes, fundamentals of soil mechanics
6. Drainage basins and river networks
7. Fluvial processes, basic flow mechanics, concept of the graded river
8. Alluvial channel patterns
9. Glacial processes, mass budget and flow behaviour, glacial landforms, effects of Pleistocene Glaciations in North America
10. Periglacial landforms and permafrost
11. Coastal and tidal processes and deposits
12. Deltaic sedimentary systems

### **Laboratory Sessions and Assignments (6-8 assignments per semester):**

1. Review of Map and Aerial Photograph Interpretation Techniques
2. Basic Statistical Analysis
3. Structural Geology and Mapping
4. Sediment Analysis
5. Drainage Basin Analysis and Mapping
6. Flood Frequency Analysis
7. Hydraulic Geometry
8. Fluvial Geomorphology - Map and Aerial Photograph Interpretation and Analysis
9. Glacial Geomorphology - Map and Aerial Photograph Interpretation and Analysis
10. Coastal Geomorphology - Map and Aerial Photograph Interpretation and Analysis

Note: All laboratory sessions and assignments are an essential supplement to the lecture component and are designed to tie in to various lecture topics.

### **Field Trips:**

Cache Creek: a two-day trip through the Fraser Valley and Fraser Canyon. The trip will introduce students to a variety of geomorphic environments with particular emphasis on mass movements and the impact of mass movements on the landscape and human structures.

Glacial Features of the Fraser Valley: a one-day trip in the Fraser Valley that introduces students to landforms and stratigraphy associated with Pleistocene glaciations.