

COURSE IMPLEMENTATION DATE: [January 1995]
 Revised: November 2000
 COURSE TO BE REVIEWED DATE: [November 2004]
 (Four years after implementation date)

OFFICIAL COURSE OUTLINE INFORMATION

Students are advised to keep course outlines in personal files for future use.

Shaded headings are subject to change at the discretion of the department and material will vary
 - see course syllabus available from instructor

FACULTY/DEPARTMENT:		GEOGRAPHY	
GEOG 302			4
COURSE NAME/NUMBER	FORMER COURSE NUMBER	UCFV CREDITS	
	FLUVIAL AND COASTAL GEOMORPHOLOGY		
COURSE DESCRIPTIVE TITLE			

CALENDAR DESCRIPTION:

This course will expand upon topics introduced in GEOG 202 and emphasis will be placed on fluvial and coastal geomorphology. Field trips throughout the Fraser Lowlands and the Pacific Northwest are an integral component of the course.

PREREQUISITES: GEOG 202
COREQUISITES: None

SYNONYMOUS COURSE(S)
 (a) Replaces: N/A
 (Course #)
 (b) Cannot take N/A for further credit
 (Course #)

SERVICE COURSE TO:
 (Department / Program)
 (Department / Program)

TOTAL HOURS PER TERM: 75
STRUCTURE OF HOURS:
 Lectures: 45 hrs
 Seminar: hrs
 Laboratory: 30 hrs
 Field Experience: hrs
 Student Directed Learning: hrs
 Other (Specify): hrs

TRAINING DAY-BASED INSTRUCTION
 LENGTH OF COURSE:
 HOURS PER DAY:

MAXIMUM ENROLMENT: 25

EXPECTED FREQUENCY OF COURSE OFFERING:

WILL TRANSFER CREDIT BE REQUESTED? YES _____ NO X

TRANSFER CREDIT EXISTS IN BCCAT TRANSFER GUIDE: YES _____ NO X

AUTHORIZATION SIGNATURES:

Course designer(s): S. Vanderburgh	Chairperson: (Curriculum Committee)
Department Head: D. Nicol	Dean: Virginia B. Cooke
PAC Approval in Principle Date:	PAC Final Approval Date: December 13, 2000

 COURSE NAME / NUMBER

LEARNING OBJECTIVES / GOALS / OUTCOMES/ LEARNING OUTCOMES:

This course is intended to provide students with an understanding of the laws, processes, theories of landform development, and variety and distribution of landforms. Particular emphasis will be placed on the fluvial, glacial, and coastal landforms that are part of the diverse natural landscape of British Columbia. Upon successful completion of this course students will be able to demonstrate an understanding of basic sedimentology, fluvial geomorphology (flood frequency analysis, hydraulic geometry, basic fluid mechanics, mechanics of open channel flow, and planform types and stratigraphy), glacial geomorphology (glacial theory, mechanics of flow, Pleistocene deposits and landforms), and coastal geomorphology (coastal processes and sediment transport, and deltas). Throughout the course the applied uses of the lecture material will be emphasized.

METHODS:

The format of the course includes lectures, laboratory sessions and assignments, assigned readings, and field trips. The lecture topics will emphasize conceptual and theoretical issues and will be supplemented by the use of audio visual aids throughout the course. Laboratory assignments will mainly emphasize techniques and the analysis and interpretation of geomorphic data. Numerous field trips will be conducted during the course that will provide students with practical experience in different geomorphic settings.

PRIOR LEARNING ASSESSMENT RECOGNITION (PLAR):

Credit can be awarded for this course through PLAR YES X NO

METHODS OF OBTAINING PLAR:

Application to the Department: Course challenge, presentation/assessment of portfolio.

TEXTBOOKS, REFERENCES, MATERIALS:

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

SUPPLIES / MATERIALS:

Courses in Geography may have mandatory field trips with additional fees. Details are available on course outlines distributed in class.

STUDENT EVALUATION:

Laboratory exercises and exams	20-30%
Field trips	20-30%
Midterm examination	20%
Final examination	30%

COURSE CONTENT:

Lecture Topics

1. Nature and scope of Geomorphology, history of geomorphic inquiry
2. Basic sedimentology, facies analysis, logging sediments, vertical profiles
3. Weathering of rocks, fundamentals of soil mechanics
4. Mass Movements; landslides and rockslides, slumps, debris flows
5. Drainage basin analysis, flood hydrology and flood frequency analysis
6. Fluvial geomorphology; hydraulic geometry, basic fluid mechanics, mechanics of open channel flow and fluvial processes
7. Alluvial channels; planform types and stratigraphy (meandering, braided, anastomosing, and wandering gravel-bed)
8. Glacial geomorphology, glacial theory, mechanics of flow, landforms, Pleistocene deposits
9. Coastal geomorphology; coastal processes and sediment transport, delta morphology and stratigraphy, estuaries and estuarine processes
10. Applications of Geomorphology to floodplain occupancy, mass movement engineering

Laboratory Sessions and Assignments (6-10 assignments per semester):

1. Sediment analysis
2. Drainage basin analysis
3. Flood frequency analysis
4. Hydraulic Geometry; hydraulic geometry and flood frequency analysis
5. Mechanics of open channel flow
6. Fluvial processes; related empirical relationships
7. Map and aerial photographic interpretation of river-related landforms
8. Glaciers; mechanics of flow
9. Map and aerial photographic interpretation of glacier-related landforms
10. Coastal Processes; sediment transport and estuarine processes
11. Map and aerial photograph interpretation of coastal features

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.

Fraser River at Chilliwack: a one-day trip to a wandering gravel-bed river planform, includes analysis of surficial sediments and exposed sections.

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

Stream Gauging Exercise: a one-day trip to a local stream to introduce students to the use of a current meter and techniques of channel measurement.

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