



EFFECTIVE: SEPTEMBER 2004 CURRICULUM GUIDELINES

A.	Division: Education	Effective Date:	September 2004
B.	Department / Program Area: Science and Technology Geology	Revision	<input checked="" type="checkbox"/> New Course <input type="checkbox"/>
		If Revision, Section(s) Revised:	C, J
		Date of Previous Revision:	May 6, 1985
		Date of Current Revision:	September 2004
C:	GEOL 1150	D:	Introduction to Engineering Geology
		E:	3

Subject & Course No.	Descriptive Title	Semester Credits						
F: Calendar Description: In this course, emphasis is placed on the origin and nature of earth materials and on geological phenomenon which affect engineering and construction projects. Topics, such as rocks and minerals, soils, slope stability, permafrost, flood control and earthquake activity are discussed with special reference to local geological problems. Credit will not be given for both GEOL/GEOG 1120 and GEOL 1150.								
G: Allocation of Contact Hours to Type of Instruction / Learning Settings Primary Methods of Instructional Delivery and/or Learning Settings: Lecture / Lab / Seminar Number of Contact Hours: (per week / semester for each descriptor) 2 hours lecture per week / 2 hours lab per week 1 hour seminar per week Number of Weeks per Semester: 15	H: Course Prerequisites: none I: Course Corequisites: none J: Course for which this Course is a Prerequisite GEOL 210, 2300, 400, 2321, 2421 K: Maximum Class Size: Lecture: 36 Lab: 18							
L: PLEASE INDICATE: <table style="margin-left: 20px; border-collapse: collapse;"> <tr> <td style="border: 1px solid black; width: 30px; height: 20px; text-align: center;"> </td> <td>Non-Credit</td> </tr> <tr> <td style="border: 1px solid black; width: 30px; height: 20px; text-align: center;"> </td> <td>College Credit Non-Transfer</td> </tr> <tr> <td style="border: 1px solid black; width: 30px; height: 20px; text-align: center;">X</td> <td>College Credit Transfer:</td> </tr> </table> <p style="text-align: center; margin-top: 10px;">SEE BC TRANSFER GUIDE FOR TRANSFER DETAILS (www.bccat.bc.ca)</p>				Non-Credit		College Credit Non-Transfer	X	College Credit Transfer:
	Non-Credit							
	College Credit Non-Transfer							
X	College Credit Transfer:							

M: Course Objectives / Learning Outcomes

The general objective of this course is to provide students with an understanding of the role that earth materials and geological processes play in controlling human activities on the earth's surface. Upon completion of this course, the student will be able to:

1. Show an understanding of the physical properties used to identify earth materials.
2. Identify and classify common minerals, igneous, metamorphic and sedimentary rocks and soils.
3. Show an understanding of the geomorphologic processes which modify the earth's surface.
4. Show an understanding of the engineering and construction problems associated with a variety of geological processes and of the procedures used to counteract such problems.
5. Describe a number of case histories of geological engineering problems.
6. Examine one or more local geological engineering problems and present an oral or written report.

N: Course Content:

Earth Materials - physical properties, identification and classification of:

- minerals
- rocks – igneous, metamorphic, sedimentary
- soils

Groundwater / subsidence

- Hydrological cycle, porosity / permeability, water tables, contamination, waste disposal, subsidence

Fluvial Processes:

- River morphology, erosion / transport / deposition, river hydraulics, flooding / flood control
Examples: Fraser River, Squamish River

Slope Stability:

- Classification of slope movements, slope failure, preventative measures
Examples: Hope and Frank Slides, Squamish Highway / Open Pit Mines

Coastal Processes

- Wave Action, coastline configuration, erosion / transport / deposition of sediment, coastal engineering
Examples: Point Grey, White Rock, California Coast

Glaciation / Permafrost

- Landforms, glacial deposits, construction techniques
Examples: McKenzie Valley pipeline, Coquitlam gravel quarries, construction techniques

Waste Disposal

- Sanitary landfill, radioactive waste disposal
Examples: Lower Mainland Garbage Disposal

Major Geological Hazards

- Earthquakes, volcanic activity
Examples: San Andreas fault system, Mt. St. Helens

O: Methods of Instruction

1. The primary mode of instruction will involve lectures and laboratories.
2. Some field trips will be scheduled.
3. Readings will be assigned to supplement lectures.
4. Seminars/discussions on local case histories will be held each week.
5. Audio-visual aids and guest speakers will be used where appropriate.

P: Textbooks and Materials to be Purchased by Students

Mathewsen, C.C. (1981) Engineering Geology, C.E. Merrill Publishing Company

Q: Means of Assessment

The course evaluation will consist of:

3 in-class Tests	40%
Final Exam	30%
Seminar/Term Essay	30%
Total	100%

R: Prior Learning Assessment and Recognition: specify whether course is open for PLAR

Not open for PLAR

Course Designer(s)

Education Council / Curriculum Committee Representative

Dean / Director

Registrar