

A. Division: Academic Date: May 6, 1985

 B. Department: Science and Mathematics New Course:

 Revision of Course Information Form:

Dated: _____

 C. GEOL 150 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 120 and GEOL 150.

 Summary of Revisions:
 (Enter date and Section Revised)
 e.g. 1982-08-25
 Section C,E,F, and R.

G. Type of Instruction:	Hours Per Week / Per Semester	H. Course Prerequisites:
Lecture	<u>2</u> Hrs.	None
Laboratory	<u>2</u> Hrs.	I. Course Corequisites:
Seminar	<u>1</u> Hrs.	None
Clinical Experience	_____ Hrs.	J. Courses for which this Course is a Pre-requisite:
Field Experience	_____ Hrs.	GEOL 210, 300, 400, 321, 421
Practicum	_____ Hrs.	K. Maximum Class Size:
Shop	_____ Hrs.	Lecture: 36
Studio	_____ Hrs.	Lab.: 18
Student Directed Learning	_____ Hrs.	
Other (Specify)	_____ Hrs.	
Total	<u>5</u> Hrs.	

L. College Credit Transfer	<input checked="" type="checkbox"/>	M. Transfer Credit: Requested <input checked="" type="checkbox"/>
College Credit Non-Transfer	<input type="checkbox"/>	Granted <input type="checkbox"/>
Non-Credit	<input type="checkbox"/>	(Specify Course Equivalents or Unassigned Credit as Appropriate)
		U.B.C. Geol 150
		S.F.U. Geol 112
		U. Vic.
		Other



Course Designer(s)



Director / Chairperson



Divisional Dean



Registrar

 N. Textbooks and Materials to be Purchased by Students (Use Bibliographic Form):

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

 Complete Form with Entries Under the Following Headings: O. Course Objectives; P. Course Content;
Q. Method of Instruction; R. Course Evaluation

 O. Course Objectives

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 geomorphological 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.

 P. Course Content
Topic:

Earth Materials: - physical properties, identification and classification of

- a) minerals
- b) rocks - igneous, metamorphic, sedimentary
- c) soils

Groundwater/subsidence: - hydrological cycle, porosity/permeability, water tables, contamination, waste disposal, subsidence

Topic

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 Andrea fault system, Mt. St. Helens

Q. Method 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.

R. Evaluation

The course evaluation will consist of:

3 in class tests	40%
Final Exam	30%
Seminar/term essay	<u>30%</u>
TOTAL	100%