



## Environmental Geology and Natural Hazards – GEOL 220

University Studies Program

### Course Outline

COURSE IMPLEMENTATION DATE: April 2003  
OUTLINE EFFECTIVE DATE: January 2023  
COURSE OUTLINE REVIEW DATE: September 2028

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#### GENERAL COURSE DESCRIPTION:

This course examines the nature of a variety of natural hazards including events such as earthquakes, volcanic eruptions, landslides, river flooding, severe weather, wildfire, and hurricanes. Current methods of analysis, prediction and mitigation are investigated. Laboratory activities concentrate on working from real-life situations in order to draw conclusions about natural hazard issues.

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**Program Information:** This course can be used as either a required course or an elective in University Studies programs and the Bachelor of Business Administration Degree.

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**Delivery:** This course is delivered face to face.

**COTR Credits:** 3

**Hours for this course:** 90 hours

#### Typical Structure of Instructional Hours:

Instructional Activity	Duration
Lecture Hours	45
Seminars / Tutorials	
Laboratory / Studio Hours	45
Practicum / Field Experience Hours	
Other Contact Hours	
<b>Total</b>	<b>90</b>

#### Practicum Hours (if applicable):

Type of Practicum	Duration
On-the-job Experience	N/A
Formal Work Experience	N/A
Other	N/A
<b>Total</b>	

**Course Outline Author or Contact:**

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Signature**APPROVAL SIGNATURES:**

Department Head  
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Darrell Bethune  
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Department Head Signature\_\_\_\_\_  
Dean Signature

EDCO

Valid from: January 2023 – September 2028

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Education Council Approval Date**COURSE PREREQUISITES AND TRANSFER CREDIT:****Prerequisites:** GEOG 101, GEOL 105, or GEOL 106**Corequisites:** None**Flexible Assessment (FA):**

Credit can be awarded for this course through FA

 Yes  No

Learners may request formal recognition for flexible assessment at the College of the Rockies through one or more of the following processes: External Evaluation, Worksite Assessment, Demonstration, Standardized Test, Self-assessment, Interview, Products/Portfolio, Challenge Exam. Contact an Education Advisor for more information.

**Transfer Credit:** For transfer information within British Columbia, Alberta and other institutions, please visit <http://www.cotr.bc.ca/Transfer>.

Students should also contact an academic advisor at the institution where they want transfer credit.

**Prior Course Number:** N/A

## **Textbooks and Required Resources:**

Textbook selection varies by instructor and may change from year to year. At the Course Outline Effective Date the following textbooks were in use:

Keller E. & DeVecchio, D. (2015) *Natural Hazards: Earth's Processes as Hazards, Disasters, and Catastrophes*. 3<sup>rd</sup> Ed. Upper Saddle River, N.J., Pearson Prentice-Hall.

*Please see the instructor's syllabus or check COTR's online text calculator*

<http://go.cotr.bc.ca/tuition/tCalc.asp> for a complete list of the currently required textbooks.

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## **LEARNING OUTCOMES:**

Upon the successful completion of this course, students will be able to

- describe many fundamental concepts of environmental geology;
  - analyze case histories of natural hazard situations;
  - summarize how natural processes can be hazardous and threaten human life and property throughout the world;
  - identify significant factors related to hazardous earth processes in the geosphere, hydrosphere and atmosphere;
  - describe the current state of prediction and prevention capabilities with regards to various hazardous earth processes;
  - critique the role of planning in landscape evaluation and land use;
  - identify and locate significant factors that affect natural hazards by reading and understanding maps, graphs, tables, and diagrams;
  - evaluate how populations can minimize natural hazards risk and use measures to protect themselves; and
  - analyze assorted facets of global climate change and how this relates to environmental geology and natural hazards.
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## **COURSE TOPICS:**

- Overview of Environmental Geology and The Study of Natural Hazards
- Internal Structure of Earth and Plate Tectonics
- Earthquakes and Tsunamis
- Volcanoes and Volcanic Eruptions
- Landslides and Snow Avalanches
- Subsidence
- River Flooding
- Severe Weather
- Hurricanes
- Coastal Erosion
- Climate Change
- Extinctions

*See instructor's syllabus for the detailed outline of weekly readings, activities and assignments.*

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**EVALUATION AND ASSESSMENT:**

Assignments	% Of Total Grade
Lab Assignments	30%
Research Project and Presentation	20%
Midterms	20%
Final Examination	<u>30%</u>
Total	100%

*Please see the instructor's syllabus for specific classroom policies related to this course, such as details of evaluation, penalties for late assignments, and use of electronic aids.*

**Note:** Students must attain a 50% average on all lab-based assignments and exams and a 50% average on all class-based assignments and exams to pass GEOL 220.

**EXAM POLICY:**

Students must attend all required scheduled exams that make up a final grade at the appointed time and place.

Individual instructors may accommodate for illness or personal crisis. Additional accommodation will not be made unless a written request is sent to and approved by the appropriate Department Head prior to the scheduled exam.

Any student who misses a scheduled exam without approval will be given a grade of "0" for the exam.

**COURSE GRADE:**

Course grades are assigned as follows:

Grade	A+	A	A-	B+	B	B-	C+	C	C-	D	F
Mark (Percent)	≥ 90	89-85	84-80	79-76	75-72	71-68	67-64	63-60	59-55	54-50	< 50

A grade of "D" grants credit, but may not be sufficient as a prerequisite for sequential courses.

**ACADEMIC POLICIES:**

See [www.cotr.bc.ca/policies](http://www.cotr.bc.ca/policies) for general college policies related to course activities, including grade appeals, cheating and plagiarism.

## **COURSE CHANGES:**

Information contained in course outlines is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational, employment and marketing needs. The instructor endeavours to provide notice of changes to students as soon as possible. The instructor reserves the right to add or delete material from courses.