Douglas College

EFFECTIVE: MAY 2002
CURRICULUM GUIDELINES

A: Division: **INSTRUCTIONAL**

B: Department/ Program Area: **GEOGRAPHY**
HUMANITIES & SOCIAL SCIENCES

Date: **MAY 2002**

New Course: | |

Revision: | **X** |

If Revision, Section(s) Revised: **F, M, N, O, P, Q, R**

Date Last Revised: **OCTOBER 1994**

C: **GEOG 120** (Subject & Course No.) **D:** **INTRODUCTION TO EARTH SCIENCES** (Descriptive Title) **E:** **3** (Semester Credits)

F: Calendar Description: Have you wondered how mountains form or why earthquakes and volcanoes occur where they do? Have you ever picked up a rock and wondered where it came from? Geography 120 addresses these questions with both theoretical and interactive hands-on instruction in the origins of the Earth's land surface and its modification by tectonic and surface processes. Topics include: minerals and rocks, geological time, weathering and soils, and the processes and landforms associated with fluvial, glacial, coastal and desert systems. Human impacts on each of these systems are also examined.

G: Allocation of Contact Hours to Types of Instruction/Learning Settings

Primary Methods of Instructional Delivery and/or Learning Settings:

Lecture
Lab

Number of Contact Hours: (per week / semester for each descriptor)

Lecture 2 hrs. per week / semester
Lab 2 hrs. per week / semester

Number of Weeks per Semester: **14**

H: Course Prerequisites:

NONE

I. Course Corequisites:

NONE

J. Course for which this Course is a Prerequisite:

GEOG 220, GEOG 321

K. Maximum Class Size:

35

L: PLEASE INDICATE:

- [ ] Non-Credit
- [ ] College Credit Non-Transfer
- [x] College Credit Transfer: Requested [ ] Granted [x]

SEE BC TRANSFER GUIDE FOR TRANSFER DETAILS (www.bccat.bc.ca)

M: Course Objectives/Learning Outcomes

At the conclusion of the course the successful student will be able to:

1. Describe and use the frameworks of science applicable to first-year physical geography.
2. Analyze and interpret minerals, rocks, sediment and soils to identify their environment of origin.
3. Describe and explain the processes that occur within earth's lithosphere and hydrosphere, as well as their interactions with the atmosphere.
4. Think critically and examine geomorphological issues in a scientific context at local, regional and global scales.
5. Communicate effectively using the language, graphical presentation methods and quantitative methods employed in physical geography.

N. Course Content

1. Introduction
   - Physical geography within geography
   - Geographic spatial analysis
   - Scientific method
   - Systems theory and its application to planet Earth

2. Minerals
   - Atomic theory
   - Rock-forming mineral families
   - Diagnostic properties
   - Mineral identification

3. Rocks
   - Rock Cycle
   - Igneous rocks, their characteristics and rock-forming environments
   - Sedimentary rocks, their characteristics and rock-forming environments
   - Metamorphic rocks, their characteristics and rock-forming environments
   - Rock identification

4. Geological Time and Principles
   - Divisions of time and criteria for these divisions
   - Earth science principles of original horizontality, superposition, cross-cutting relationships and faunal succession

5. Plate Tectonics
   - Development of, and evidence for, plate tectonic theory
   - Plate boundary types, interactions and resulting patterns of tectonic landforms and phenomena

6. Topographic Maps
   - Projections
   - Map elements: scale, locational coordinate systems, direction indicators, data and legends
   - Contour line construction, interpretation and analysis
   - Topographic profile construction and analysis
   - Calculation of vertical exaggeration and gradients
   - Landform measurement, analysis and identification

7. Crustal Deformation and Volcanism
   - Structures and their topographic expression
   - Extrusive igneous activity: eruption types and resulting rock bodies and landforms
   - Intrusive igneous activity: resulting rock bodies and landforms

Course Content Cont'd.

8. Weathering and Soils
   - Chemical weathering types, causes, characteristics and patterns

- Physical weathering types, causes, characteristics and patterns
- Influences on rates of weathering, products of weathering
- Soil characteristics: pedons, profiles, horizons, properties
- Canadian system of soil classification
- Soil orders of Canada: formation, characteristics and geographic distribution

9. Hydrologic Cycle and Mass Movement
   - Components of the hydrologic system
   - Mass movement classification and types
   - Influences on slope stability

10. Fluvial and Groundwater Systems
    - Drainage basin morphology and patterns
    - Channel patterns and processes
    - Flow characteristics
    - Fluvial erosional and depositional landforms
    - Human impacts on fluvial systems
    - Groundwater processes and landforms
    - Karst processes and landforms
    - Human impacts on groundwater systems

11. Glacial and Periglacial Systems
    - Development and movement of different types of glaciers
    - Glacial erosional and depositional processes and landforms
    - Periglacial distribution, processes and landforms
    - Human impacts on glacial and periglacial systems

12. Coastal Systems
    - Coastal environment components: tides, currents, waves
    - Wave refraction and longshore currents
    - Coastal erosional and depositional processes and landforms
    - Types of coastlines
    - Human impacts on coastal systems

13. Aeolian Systems
    - Geographic distribution of deserts and reasons for this distribution
    - Aeolian erosional and depositional processes and landforms
    - Desert fluvial processes and landforms
    - Human impacts on aeolian systems

O. Methods of Instruction

This course will employ a variety of instructional methods to accomplish its objectives, including some of the following:
- lecture
- labs
- field work
- analysis and interpretation of graphs, maps and air photos
- slides, videos
- individual and/or team projects
- small group discussions

P: Textbooks and Materials to be Purchased by Students

Texts will be updated periodically. A typical example would be:

Christopherson, R. W. (2002). Geosystems: An Introduction to Physical Geography (5th ed.). New Jersey: Prentice Hall.

Q: Means of Assessment

The evaluation will be based on course objectives and will be carried out in accordance with Douglas College policy. The instructor will provide a written course outline with specific evaluation criteria during the first week of classes.

Evaluation will include some of the following:

- Laboratory assignments with a combined value of up to 50%
- Multiple choice and short answer exams with a combined value of up to 50%.
- Field work with a value of up to 20%
- A term project with a value of up to 25%
- An individual or group presentation on an assigned topic with value up to 20%

An example of a possible evaluation scheme would be:

Laboratory Assignments	10%
Two Laboratory Exams	30%
Midterm Examination	25%
Final Examination	25%
Term Project	10%
	100%

Note: This course received a standing variance from Education Council in November 1999 to allow up to a 15% open book lab exam in the penultimate week of the semester. This is not a final exam; it is an assessment of student learning of lab work performed in the second half of the semester.

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

Yes; students may take a challenge exam to apply for recognition of prior learning.

Course Designer(s): S. Smythe

Education Council/Curriculum Committee Representative

Dean/Director

Registrar