

# Bemidji State University

## GEOL 1110: Physical Geology

### A. COURSE DESCRIPTION

Credits: 4

Lecture Hours/Week: \*.\*

Lab Hours/Week: \*.\*

OJT Hours/Week: \*.\*

Prerequisites: None

Corequisites: None

MnTC Goals: Goal 03 - Natural Science, Goal 10 - People/Environment

Introduction to modern geology. Study of rocks and minerals and the processes operating on Earth. Lecture and laboratory. Liberal Education Goal Areas 3 (LC) & 10.

### B. COURSE EFFECTIVE DATES: 08/26/1997 - Present

### C. OUTLINE OF MAJOR CONTENT AREAS

1. Introduction and unifying concepts in Geology
2. Minerals
3. Igneous Rocks, classification by texture and mineralogy. Geologic factors affecting rock composition
4. Volcanism; types of volcanoes; their behavior, and geologic significance.
5. Weathering and production of sediments, Classification of sedimentary rocks,
6. Interpretation of sedimentary rocks, Metamorphic rocks.
7. Geologic Structures, classification and interpretation of folds, faults, and fractures; Earth's interior
8. Mountain building, Geologic time,
9. Mass wasting
10. Rivers and streams
11. Groundwater resources,
12. Glaciation
13. Details of plate tectonics
14. Earth's resources
15. Geologic resources, energy sources, metals, and non-metals.

### D. LEARNING OUTCOMES (General)

1. demonstrate higher order thinking skills by interpreting geologic data through application of geologic, chemical, physical, and biologic principles.
  - o Students will collect data or review geologic settings
  - o Students will construct hypotheses to explain the data or geologic setting
  - o Students will test their hypotheses by comparison of data to known geologic situations
2. identify geologic problems related to Geology and propose solutions to the problems based upon fundamental geological principles
3. gain specialized knowledge of geologic materials and principles that are essential to recognize and solve specific geologic problems
4. have the opportunity to demonstrate effective communication skills through oral and written means

## **E. Minnesota Transfer Curriculum Goal Area(s) and Competencies**

### Goal 03 - Natural Science

1. Formulate and test hypotheses by performing laboratory, simulation, or field experiments in at least two of the natural science disciplines. One of these experimental components should develop, in greater depth, students' laboratory experience in the collection of data, its statistical and graphical analysis, and an appreciation of its sources of error and uncertainty.
2. Evaluate societal issues from a natural science perspective, ask questions about the evidence presented, and make informed judgments about science-related topics and policies.
3. Demonstrate understanding of scientific theories.

### Goal 10 - People/Environment

1. No Competencies Indicated

## **F. LEARNER OUTCOMES ASSESSMENT**

As noted on course syllabus

## **G. SPECIAL INFORMATION**

None noted