Minnesota State University Moorhead

GEOS 115: Physical Geology

A. COURSE DESCRIPTION

Credits: 4

Lecture Hours/Week: 3

Lab Hours/Week: 0

OJT Hours/Week: *.*

Prerequisites: None

Corequisites: None

MnTC Goals: Goal 03 - Natural Science

The nature of the earth, its description and the processes that govern its formation and change; including rocks and minerals that make up the earth, their characteristics and how they form; volcanic eruptions; earthquakes; weathering and the transport and deposition of sediment; mineral and energy resources; and the nature of other planets in our solar system. Must also register for GEOS 115L. MnTC Goal 3.

B. COURSE EFFECTIVE DATES: 12/26/2001 - Present

C. OUTLINE OF MAJOR CONTENT AREAS

1. Science and Geology
2. Principles and Importance of Plate Tectonics
3. Earth Materials and what they can tell us
4. The Hydrologic Cycle and Surface Processes
5. The consequence of moving plates (volcanoes, earthquakes, and mountains)
6. Geologic Time and Stratigraphy
7. Mineral and Energy Resources
8. Exploring for Traditional Energy Resources
9. Peak Oil and Alternative Energy Resources

D. LEARNING OUTCOMES (General)

1. Student can solve a variety of geological problems using a variety of approaches.
2. Student can explain how particular geological conclusions were drawn.
3. Student can engage in critical thinking and reasoning as applied to geological problems.
4. Student can understand and interpret geological features in the field.
5. Students understand the concepts of seismic and other waveforms.
6. Student can recognize and interpret the meaning of common rock types.
7. Student can read and interpret a variety of geologically relevant graphs and diagrams.
8. Students can understand the importance and consequences of energy resources.
9. Students understand the concept of sustainability as it pertains to geologic processes and natural resources.

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

Goal 03 - Natural Science

1. Demonstrate understanding of scientific theories.
2. 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.
3. Communicate their experimental findings, analyses, and interpretations both orally and in writing.
4. Evaluate societal issues from a natural science perspective, ask questions about the evidence presented, and make informed judgments about science-related topics and policies.

F. LEARNER OUTCOMES ASSESSMENT

As noted on course syllabus

G. SPECIAL INFORMATION

None noted