Course Outline for: GEOL 1101 The Dynamic Earth

A. Course Description

1. Number of credits: 4
2. Lecture hours per week: 3
   Lab hours per week: 2
3. Prerequisites: None
4. Corequisites: None
5. MnTC Goals: Goal #3 - Natural Science
   ` Goal #10 – People and the Environment

This course is an introduction to materials and structure of the earth and processes acting internally and externally to change it. It includes identification of common rocks and minerals, as well as other laboratory activities.

B. Date last revised: April 2023

C. Outline of Major Content Areas

1. Minerals and Rocks
2. Geologic processes
3. Geologic resources
4. Geologic time

D. Course Learning Outcomes

Upon successful completion of the course, the student will be able to:

1. Explain using scientific theories how geologic processes function and interact (Goal 3a).
2. Explain the formation and uses of various minerals, rocks, and other geologic resources (Goal 3a)
3. Explain the geologic time scale and the basis for interpreting geologic time (Goal 2c, 3a).
4. Demonstrate basic geological field knowledge through the identification of minerals and rocks and interpretation of topographic maps (Goal 3b, 3c)
5. Demonstrate, through lab activities, the ability to perform the scientific method by formulating hypotheses about geologic processes, collecting and analyzing measurements of the processes, and assessing the validity of your results and conclusions (Goal 2a, 2b, 2c, 2d, 3b)
6. Communicate lab analyses and conclusions both orally, within lab work groups, and in the form of prepared written responses (Goal 3c)
7. Evaluate societal/environmental/resource issues and the range of responses developed to address these issues in the context of geologic processes (Goal 2d, 3d, 10a, 10c, 10d)

8. Explain the fundamental interrelatedness of bio/physical systems and socio/cultural systems in terms of some of the ways in which people affect the environment and the ways in which humans adapt to natural systems. (Goal 2c, 2d, 10a, 10b)

E. Methods for Assessing Student Learning

Methods for assessment may include, but are not limited to, the following:

1. Exams
2. Assignments
3. Lab exercises
4. Quizzes

F. Special Information

None