

Common Course Outline for: GEOL 1050 – Earth History**A. Course Description**

1. Number of credits: 4
2. Lecture hours per week: 3
Lab hours per week: 2
3. Prerequisites: None
4. Co-requisites: None
5. MnTC Goals: Goal 3 - Natural Science and Goal 9 – Ethical and Civic Responsibility

This course provides interpretations of the evolution of our planet and its natural systems, including the scientific basis of these interpretations as well as the controversies faced as these developing interpretations have challenged existing social and religious standards. The interplay of scientific advancement and societal norms are probed in order to appreciate the broader context of our understanding of Earth's evolution. Lab activities demonstrate current application of the scientific method to questions of Earth's history.

B. Date last revised: March, 2015

C. Outline of Major Content Areas

- a. Scientific method as applied to Earth history
- b. Historic and modern principles of stratigraphic analysis
- c. Absolute dating and concept of "deep time"
- d. Controversies surrounding Earth's age
- e. Biological succession
- f. Controversies surrounding biological evolution
- g. Climate change
- h. Current debate regarding climate change

D. Course Learning Outcomes

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

1. Explain how the scientific method is applied to the study of Earth's history.
2. Distinguish between uses of terms like theory, fact and belief among scientists and nonscientists.
3. Interpret sequences of events using stratigraphic principles.
4. Explain how modern science has determined Earth's age
5. Describe how the relationship between geology and religion changed as a result of the discovery of "deep time".
6. Describe how theories of biological evolution have changed with advances in technology.
7. Discuss the convictions of various participants in the controversy over evolution, including their own attitudes.

8. Understand how issues of current climate change relate to our interpretation of past climate variation.
9. Articulate their own opinions about the climate change controversy

E. Methods for Assessing Student Learning

Instructors may use any or all of the following, but are not limited to:

- a. Minimum of two fifty minute exams
- b. in class or online discussion
- c. Graded lab exercises
- d. Any other additional work assigned

F. Special Information

- a. Students should consult their course syllabus for specific grading policies.