

# Minnesota State University Moorhead

## GEOS 103: The Real Dragons: Dinosaurs on a Dynamic Planet

### A. COURSE DESCRIPTION

Credits: 3

Lecture Hours/Week: 3

Lab Hours/Week: 0

OJT Hours/Week: \*.\*

Prerequisites: None

Corequisites: None

MnTC Goals: Goal 03 - Natural Science

The Dinosaurs were one of the most successful groups of terrestrial organisms that have ever lived on our planet. During their 140 million-year reign, this group was able to adapt to changing environments on a ever-changing planet. The age of the dinosaurs (the Mesozoic) spanned three distinctly different periods of earth history. Different groups of dinosaurs existed during these periods of dynamic ecosystem change. The final group of dinosaurs that disappeared 65 million years ago were finally faced with environmental change at a rate that they could no longer cope with. This course will examine the Age of the Dinosaurs, and review and discuss the basic principles and techniques paleontologists use to reconstruct the biology and ecology of these fossil organisms, and to interpret the environments from the rocks they occur in. MnTC Goal 3L.

**B. COURSE EFFECTIVE DATES:** 10/26/2022 - Present

### C. OUTLINE OF MAJOR CONTENT AREAS

1. What were the dinosaurs and how are they classified. Interpretation of sedimentary environments, stratigraphic context, and geologic time. What were the major groups. How has Earth Changed since the age of the dinosaurs, especially in terms of geography, environments, climate, and sea level. Dinosaur paleobiology and their descendents. Mass extinctions.

### D. LEARNING OUTCOMES (General)

1. Have an understanding of how geologists interpret past environments from sedimentary rocks, and how the geologic history of Earth is reconstructed.
2. Understand the basic principles and techniques used to reconstruct the biology and ecology of these fossil organisms.
3. Understand that life on Earth has undergone some major changes and crises, and the event that resulted in the mass extinction that ended the reign of the dinosaurs was the last of 5 such events. We may be at the beginning of the 6th.

### 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. 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