University of Arkansas - Fort Smith
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General Syllabus

GEOS 43103 Vertebrate Paleontology

Credit Hours: 3 **Lecture Hours**: 3 **Laboratory Hours**: 0

Prerequisite(s): GEOS 42104 Invertebrate Paleontology or BIOL 11043 Biological Science or Consent of Instructor

Effective Catalog: 2020-2021

I. Course Information

A. Catalog Description

Application of scientific principles to the study of Mesozoic vertebrate marine reptiles, dinosaurs and early to mid-Cenozoic mammals utilizing geological and biological approaches and theories.

II. Student Learning Outcomes

A. Subject Matter

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

1. Apply geological and biological principals and theories involved in the study of vertebrae paleontology.
2. Discuss how fossil preservation occurs.
3. Identify fossil locations to better understand migration patterns and plate tectonics.
4. Use the taxonomic classification of dinosaurs and explain how it has changed over time.
5. Discuss historical paleontology and the dinosaur wars of the 1800's.
6. Compare and contrast skeletal and locomotive differences of vertebrae animals from the Mesozoic and early Cenozoic Era.
7. Identify the dietary features of vertebrae animals from the Mesozoic and early Cenozoic Era.
8. Discuss controversial topics involving dinosaur classifications, the encephalization quotient, and metabolic options.

B. University Learning Outcomes (ULO)

This course will enhance student abilities in the following areas.

Analytical Skills

Critical Thinking Skills
Students will identify a problem or issue and will research, evaluate, and compare information from varying sources in order to evaluate authority, accuracy, recency, and bias relevant to the problems/issues. The student will generate solutions/analysis of problems/issues evaluated and will assess and justify the solutions and/or analysis.

Communication Skills (written and oral)
Students will communicate proficiently. The student will compose coherent documents appropriate to the intended audience and effectively communicate orally in a public setting.

Ethical Decision Making
Students will model ethical decision-making processes. The students will identify ethical dilemmas and affected parties and will apply ethical frameworks to resolve a variety of ethical dilemmas.

III. Major Course Topics

A. Fossil preservation
B. Migration patterns and plate tectonics
C. Marine Reptiles
D. Cenozoic Mammals
E. Dinosaur anatomy
F. Taxonomic classification of dinosaurs
G. Dinosaur to bird relationships
H. Extinction factors