

University of Arkansas – Fort Smith
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General Syllabus

GEOL 4214 Paleontology

Credit Hours: 4

Lecture Hours: 3

Laboratory Hours: 2

Prerequisite: GEOL 3014 Geological Field Methods

Effective Catalog: 2018~2019

I. Course Information

A. Catalog Description

The study of fossil invertebrates emphasizes both soft and skeletal anatomy, as well as the relationship between those known only from fossils and animals living today.

Emphasis is on the identification of the most abundant fossils, and their use as tools for stratigraphic correlation and interpretation of ancient environments of deposition.

B. Additional Information

This course is required for the B.S. degree in Geoscience.

II. Student Learning Outcomes

A. Subject Matter

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

1. Identify the types of fossil preservation.
2. Analyze fossils by nomenclature, taxonomy, and class.
3. Assess the different depositional environments associated with fossils.
4. Evaluate how fossils can be used for stratigraphic correlation.
5. Assess, compare and contrast ancient fossils to organisms and animals living today.

B. University Learning Outcomes

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. Students 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. Students 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. Students will identify ethical dilemmas and affected parties and will apply ethical frameworks to resolve a variety of ethical dilemmas.

Global & Cultural Perspectives

Students will reflect upon cultural differences and their implications for interacting with people from cultures other than their own. Students will demonstrate understanding or application of their discipline in a global environment and will demonstrate how their discipline impacts or is impacted by different cultures.

III. Major Course Topics

- A. Fossils and evolution
- B. The value and meaning of fossils
- C. Early life and the Primordial Earth
- D. Bodies of a single nucleated cell: Protoctista
- E. Porifera and other pore bearers
- F. Taxonomic grouping and study of the following: Cnidaria, Bryozoa, Brachiopoda, Mollusca, Arthropoda, Echinodermata, Graptolites
- G. Conodonts