University of Arkansas - Fort Smith
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General Syllabus

GEOS 41204 Sedimentary Stratigraphy

Credit Hours: 4 **Lecture Hours**: 3 **Laboratory Hours**: 2

Prerequisite(s): GEOS 41004 Sedimentary Deposition or Consent of Instructor

Effective Catalog: 2020-2021

I. Course Information

A. Catalog Description

Paleoenvironmental analysis of sedimentary deposits using the "facies model." Techniques such as seismic, basin, and sequence stratigraphy will also be discussed.

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. Explain the processes of Fluid Dynamics and Clastic Transport
2. Compare and contrast Siliciclastic verse Biogenic Sedimentation
3. Explain and apply the different types of Stratigraphic Methods (Bio, Litho, Chemo, Astro, Seismic, and Magneto)
4. Interpret the processes of Sequence Stratigraphy and its applications
5. Interpret the processes of Facies Model Concepts and its application
6. Compare the relationships between facies and formation
7. Define the characteristics of common sedimentary environments

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.

Global & Cultural Perspectives
Students will reflect upon cultural differences and their implications for interacting with people from cultures other than their own. The 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. Stratigraphy and basin analysis
B. Weathering, Erosion, Deposition
C. Sediment transport and Fluid Dynamics
D. Siliciclastic and Biogenic Sedimentation
E. Stratigraphic Methods
F. Sequence Stratigraphy