University of Arkansas – Fort Smith
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General Syllabus

GEOS 4000V Undergraduate Research in Geoscience

Credit Hours: 1-3 Variable **Lecture Hours:** 0 **Laboratory Hours:** 2-6 Variable

Prerequisites: GEOS 20003 Geoscience Seminar and consent of instructor

Effective Catalog: 2020-21

I. Course Information

A. Catalog Description

Literature review, hypothesis testing, data analysis, and presentation of research results in geoscience. May be repeated up to maximum 4 credit hours.

B. Additional Information

Supervised by one or more faculty members. May involve collaboration with other students.

II. Student Learning Outcomes

A. Subject Matter

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

1. Review published literature and design a research project.
2. Form one or more working hypotheses.
3. Gather and interpret data in order to test a hypothesis.
4. Modify a hypothesis on the basis of research results.
5. Collaborate with others to accomplish research goals.
6. Write a scientific report summarizing research results.
7. Present the results of research in a public forum.

B. University Learning Outcomes

This course will enhance student abilities in the following areas.

Analytical Skills

The student will generate solutions/analysis of problems/issues evaluated and will assess and justify the solutions and/or analysis.

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.

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.

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. Reviewing published geoscience literature
B. Formulating hypotheses
C. Designing tests for hypotheses
D. Analyzing and interpreting geological data
E. Collaboration in geoscience research
F. Preparing research results for presentation and publication