

**University of Arkansas - Fort Smith**  
**5210 Grand Avenue**  
**P. O. Box 3649**  
**Fort Smith, AR 72913-3649**  
**479-788-7000**

## **General Syllabus**

### **GEOL 400V Undergraduate Research in Geoscience**

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

**Prerequisites:** GEOL 2003 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