

University of Arkansas – Fort Smith
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General Syllabus

CHEM 400V Chemistry Research

Credit Hours: 1-3 Variable Lecture Hours: 0 Laboratory hours: 3-9 Variable

Prerequisite or corequisite: CHEM 3991 Foundations of Chemistry Research

Effective: 2018~2019

I. Course Information

A. Catalog Description

Covers the scientific method by giving practical exposure to hypothesis testing, experimental design, data collection and analysis as it relates to one of the fields of chemistry. Students are required to publicly present their findings. This course may be repeated for a total of six credit hours.

B. Additional Information - None

II. Student Learning Outcomes

A. Subject Matter

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

1. Understand and present the results of their research projects.
2. Demonstrate proper lab techniques and use of instruments in the synthesis, separation, and/or analysis of compounds.

B. University Learning Outcomes

This course enhances 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

Course topics will be dependent on individual instructor's research goals.