

University of Arkansas - Fort Smith
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General Syllabus

CS 298V Introduction to Undergraduate Research

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

Prerequisites: Freshman or sophomore standing and consent of department head.

Effective Catalog: 2020-2021

I. Course Information

A. Catalog Description

Introduction to undergraduate research focusing on computer science topics appropriate for freshman and sophomore students. Students will review scientific methods to design experiments, identify variables, collect and analyze data, and present research findings in written or oral form. The course may be repeated for a total of six hours.

II. Student Learning Outcomes

A. Subject Matter

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

1. Summarize and synthesize published scientific papers.
2. Identify scientific problems and design investigations to address those problems.
3. Formulate testable hypothesis.
4. Design a pilot test project to collect and analyze data.
5. Present experimental design and initial findings orally and in writing to a general audience.

B. University Learning Outcomes (ULO)

This course enhances student abilities in the following area:

Communication Skills (written and oral)

Students will communicate proficiently. They will compose coherent research documents appropriate to the intended audience. They will effectively communicate their research findings in a public or departmental setting.

Analytical Skills

Critical Thinking Skills

Students will evaluate information gathered for and during the investigation. They will solve problems and draw correct conclusions based on acquired data. Students will also review and study the primary literature for their research to improve their understanding.

III. Major Course Topics

- A.** Introduction to computer science research methods
- B.** Reading scientific publications
- C.** Scientific problems
- D.** Experimental design and prototypes
- E.** Develop testable hypothesis
- F.** Data collection techniques
- G.** Hypothesis production and experimental design