University of Arkansas – Fort Smith
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General Syllabus

CS 498V Undergraduate Research in Computer Science

Credit Hours: 1-3   Lecture Hours: 0-3   Lab Hours: 0-6

Prerequisite: Junior standing and consent of department

Effective Catalog: 2020-2021

I.   Course Information

A. Catalog Description
Practical exposure to hypothesis testing, experimental design, data collection and analysis. Students will present their findings at the end of the term. May be repeated for a total of six hours.

B. Additional Information
Students pursuing externally funded research projects will be encouraged to register for this course in order to earn course credit for their research.

II.   Student Learning Outcomes

A. Subject Matter
Upon completion of this course, the student should be able to:

1. Identify computing related problems and design investigations to address those problems.
2. Formulate testable hypothesis.
3. Design and conduct controlled experiments in the field or lab.
4. Collect and evaluate quantitative and qualitative data.
5. Perform basic statistical analysis to test hypothesis and significance of findings.
6. Present findings orally and in writing to a general audience.

B. University Learning Outcomes
Undergraduate Research enhances student abilities in the following areas:

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
Quantitative Analysis Skills
Students will evaluate information gathered for and during the investigation. They will utilize critical thinking skills to solve problems and draw correct conclusions based on acquired data.

III.   **Major Course Topics**

   A. Identify research questions
   B. Generate testable hypothesis
   C. Design experiments and prototypes
   D. Collect of quantitative and qualitative data
   E. Statistical testing of hypothesis with data collected
   F. Communication of findings to a professional and general audience