University of Arkansas – Fort Smith
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General Syllabus:

MATH 495V Mathematics Independent Study

Credit Hours: 1-3 Variable   Independent Study: 1-3 Variable

Prerequisite: approval of Mathematics Undergraduate Research Committee

Effective Catalog: 2018~2019

I. Course Information

A. Catalog Description
Student will work independently on an open question in pure or applied mathematics. The project may involve the discovery of new abstract results or the application of existing mathematics in a new way. May be repeated for a total of six hours.

B. Additional Information
While a faculty mentor will provide guidance, the student will be primarily responsible for acquiring any necessary background and maintaining a consistent level of progress. The student will be required to present her or his results either in a publication or at a regional (or broader) discipline conference.

II. Student Learning Outcomes

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

1. State a problem in mathematics.
2. Independently identify, collect and understand information relevant to the solution of the problem.
3. Independently experiment with examples and compare similar situations and conjecture a solution to the problem.
4. Rigorously prove the validity of the conjectured solution.
5. Effectively communicate the problem and results to a general and mathematical audience.

B. University Learning Outcomes:
Independent Study enhances student abilities in the following areas:

Communication Skills (written and oral)
Students will compose coherent documents that effectively communicate solutions and applications of mathematical topics.

Analytical Skills
Quantitative Reasoning: The student will use of quantitative reasoning via the application of mathematics skills to problems related to course concepts.

III. Major Course Topics

Topics covered is dependent on each offering because faculty with different specialties will rotate through the teaching of this course. A faculty member who is teaching determines the topic and the points of emphasis of that given offering.