

## Ma 497 ~ Independent Study

### Undergraduate Research in Mathematical Science

Spring 2023

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Instructor: Dr. Laurel Carpenter  
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Office Hours: by appointment  
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**Course Description:** independent research project chosen in consultation with mathematics faculty.

**Course Context:** This course supports the following goal of the Mathematical Sciences Division:

- MS2. Use critical-thinking/analytical skills to understand mathematical problems and design solutions with the aid of appropriate tools.
- MS4. Construct a foundation upon which [the student], after graduation, can continue the development of their God-given abilities and the learning necessary for work and life.

**Course Goals:**

- CG1: Allow the student to apply their mathematical skills in a research environment and develop experience and insight to prepare them for their entry into the graduate/professional world
- CG2: Help students refine their mathematical communication skills (both oral and written) in multiple settings
- CG3: Help the student develop the skills and documentation necessary to set themselves above their peers in the graduate school/job application process

**Course Objectives:** The student will be able to

1. Conduct research of an open problem in theoretical or applied mathematics or statistics
2. Communicate their research activities and findings in multiple ways for various audiences
3. Connect with professionals in the field

**Course Requirements and Evaluation:** Students are expected to...

- average 9 hours a week engaged in research-related activities
- meet with their research mentor once a week to discuss progress
- create a **Research Log** documenting their research activities, date of activity, and time spent
- write **Midterm** and **End-of-Term Reports** of their findings
- present their findings at an end-of-term **Research Presentation** or conference

**Grading Scale:** Standard 10-point grading scale; 250 points possible in the course

**Textbook:** There is no required text for this course.

**Tentative Schedule:**

Weekly meetings throughout the term per arrangement with research mentor.	Tuesdays 9:30-10:45
Research log is to be updated and turned in prior to each week's meeting.	
Midterm report is due one week before midterm grade reporting.	Feb 28, 2023
End-of-term report is due on the final class-week of the term.	Apr 26, 2023
Research Presentation will be scheduled for the final class-week of the term.	TBA