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# College of Arts and Science

Division of Mathematical Sciences

**Ma 481 Capstone Experience in Mathematics II**

Fall 2023-24

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| Instructor: | Dr. Laurel Carpenter |
| Office: | AL 46 |
| Office Hours: | MF 1:00-1:50 | TW 9:00-9:50 | other times by appointment |
| Preferred Contact: | [llcarpen@bju.edu](mailto:llcarpen@bju.edu) (also on Teams) |
| Textbook: | No textbook assigned |

## Catalog Description

Required of all students majoring in Mathematics. An independent study of an advanced mathematical topic resulting in a written and oral presentation. Not applicable toward a minor. 1 Credit.

## Course Context

During this course, students finalize the research they began Ma 480 or the Research in Mathematics course. This course supports the following goal of the mathematics program: Progress logically from premises to valid conclusions in a variety of mathematical contexts

## Course Goals (CG)

1. Develop mathematical maturity and independent thinking.
2. Learn to read and digest mathematical literature.
3. Learn to evaluate mathematical works to determine their value and application.
4. Improve the student’s ability to communicate mathematics to others, both orally and in written form.

***Course Objectives***

The student will be able to

## Independently learn an advanced mathematical topic. (Assessed through periodic meetings and the written and oral reports)

## Communicate his knowledge and methods in an informal setting to a group of his peers (Assessed during weekly group meetings)

## Present the learned material at a conference/symposium or to a client. (Assessed by the oral presentation)

## Present a written report of the material learned using appropriate mathematical language and formatting. (Assessed by the written report)

***Course Expectations***

## You will set up a time for a weekly meeting with your faculty research mentor. Attendance at these Mentor Meetings is mandatory (unless other arrangements are made with your mentor).

## You will meet with the Research in Mathematics Group for at least 30 minutes per week. Attendance at these meetings is mandatory. Group Meeting times to be decided by faculty group leader.

## Be sure to keep up with your MS Teams chat session since this will be the primary method of communicating with you between meetings.

## Assignments

* Attend at least one math talk per month
* Proposal for Research and Grading Scheme
  + Under consultation with the faculty mentor, the student will submit a proposal outlining the scope, schedule, and deliverables of the research and grading scheme for the semester.
  + The benchmarks below must be met.
  + Once the faculty mentor accepts/approves the student’s Proposal for Research and Grading Scheme, the Proposal for Research will be considered binding on grades for this course.
* Research Benchmarks
  + Week 1 (no later than mentor meeting in Week 2) – Proposal for Research and Grading Scheme
  + Week 4 (by end of week) – Example Draft: written component demonstrating writing style in mathematics
  + Week 8 (by mid-week) – Midterm: substantive amount of writing, should also include a formative assessment of formal oral presentation skills
  + by Week 14 (by end of week) – final draft of paper
  + by Week 15 (as announced) – formal presentation of findings
  + other benchmarks as determined by client or conference schedule

## Assessment and Grading

Grading will be partially determined by the student’s proposal in agreement with the faculty mentor and will conform to the following:

* Proposal for Research: 5% of final grade
* Timeliness of Week 4, Week 8, and Week 14 Benchmarks: 10% of final grade
* Example Draft: 5% of final grade
* Midterm: between 5% and 15% of final grade
* Final Project and Presentation: between 65% and 75% of final grade

Final grades will be assigned according to the Proposal for Research and Grading Scheme agreed to by the student and mentor.

## Absences and Late Assignments

* Missed Mentor Meetings (without prior approval) or missed Group Meetings (without prior communication) will result in an absence being reported to the Office of the Registrar. Students are allowed 1 personal absence and 1 service absence for the semester.
  + By mutual consent, the mentor and student may replace a Mentor Meeting with MS Teams communication about student progress -- not more than once per month. This will not be reported as an absence unless communication does not occur.
  + By faculty decision, a Group Meeting may be canceled – not more than once per month. This will not be reported as an absence.
* Late work will receive the “timeliness” penalty.
* Missing work will receive a grade of 0.

## Academic Honesty and Integrity Policy

BJU **academic honesty and integrity** policy is in effect (see https://home.bju.edu/bju-policies/ for details).

Academic dishonesty including plagiarism on any submission will result in a 0 on that submission and will be reported to the Academic Integrity Committee.

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