MATHEMATICS 401

Textbook: None.

Course Outline: In this seminar, you will select a topic in mathematics and present a paper summarizing your work to the class at the end of the semester. You will also take the ETS Major Field Exam for Mathematics and write a short report reflecting on your undergraduate mathematical career and how well it matches with departmental goals.

This course counts as one hour of mathematics credit.

Topics:

1. Investigating mathematical research. What is it? (Bruce Resnick article) (But How Do I *Do* Mathematical Research?)
2. Resources for doing mathematical research. (Jstor) (Bruce Resnick page)
3. Writing an abstract.
4. Typesetting mathematics and specifically in Word/Powerpoint.
5. National Mathematical Societies
    1. MAA - Mathematics at the collegiate level - MAA Focus
    2. AMS - Research Mathematics - Notices
    3. SIAM - Applied Mathematics - SIAM News
    4. NCTM - Teaching Secondary Mathematics - Summing Up
6. Organization for a paper.
7. Bibliography
8. Giving technical presentations.
9. Preparing a resume/vita.

Prerequisite: Senior Standing
Meetings: This class meets as scheduled for discussion between classmates and the instructor.

Grading: Students will be expected to participate in classroom discussions. Your final grade will be based on the quality of your paper and the corresponding presentation as well as completing the Major Field Exam and the Report on Departmental Goals.

The paper/presentation should include:

1. An abstract = 10%
2. Mathematical content which includes at least one significant proof = 40%
3. A bibliography which must include at least one non-electronic source = 10%
4. Powerpoint presentation = 40%

Determining Final Grade:

1. Paper = 80%

2. Major Field Exam = 10%
3. Reflection Report = 10%

Readings/Resources:

- JSTOR
- MAA Student Chapters Newsletters - Some list topics that undergraduate students have presented at national meeting.
- Abstracts for Mathematics Magazine, MAA
- Abstracts for College Mathematics Journal, MAA
- 100 Greatest Theorems

Mathematics Department Goals:

1. The Department will maintain a highly qualified faculty committed to quality teaching in service courses and in the major.
2. The Department will acquire and maintain appropriate technology to facilitate innovated approaches in mathematics instruction.
3. The Department will continue to monitor the effectiveness of the courses it offers.
4. The Department will solicit the active support of its alumni.

MISSISSIPPI COLLEGE ACADEMIC POLICIES:
Students should consult the Mississippi College policy manual located at
http://www.mc.edu/resources/publications/policies/ for official information regarding:
- Class attendance - Policy 2.10
- Grading - Policy 2.15
- Cheating - Policy 2.19
- Counseling and Career Services - Policy 2.25
- Research - Policy 2.27
- Counseling and Testing Center - Policy 2.34

Students who may require accomodation due to a documented handicap should follow the procedures located at http://www.mc.edu/about/offices/counseling/disabilities/

The Generic Grading Scale for this course is A = 90-100, B = 80-89, C = 70-79, D = 60-69. Individual instructors are free to choose a different grading scheme so students should consult their section's particular syllabus for the official grading scale to be utilized.

Tutoring Hours:
Hours and location for the departmental tutoring center are posted at
http://www.mc.edu/academics/academic-tutoring/ .