Math 290 - Section 01

Instructor
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Office hours: TTh 9-10, M 1-2, F 11-12 or by appointment.
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Web Resource

Our course materials will be kept on D2L, including your course grade. Many of the same materials (assignments, schedule, etc) can also be found at

http://mavdisk.mnsu.edu/marteb1/courses/m290/

which is also linked from my homepage.

Required Text


Course Structure

This course meets 10:00-10:50 am Monday, Tuesday, Thursday and Friday. The class will be conducted using a method of instruction called Inquiry Based Learning or Guided Discovery or the Modified Moore Method. This method fosters creativity and independent thinking. It is also fun. Your book contains lists of questions and theorem statements without proofs. You will answer the questions and prove the theorems on your own and present your results to the class. These presentations are a major part of the course.

The ideal model to follow is to settle the questions and prove the theorems independently and write-up your solutions before the answers are presented in class. You may not consult books, the Internet, other people, or other sources. Each day, the instructor will select students to present their solutions in class. Your standing assignment is to be prepared to present your results. When you are presenting your proofs or solutions, strive to make your explanations clear and organized. When you are observing a presentation, it is your responsibility to follow the logic of the solution and verify that it is correct for yourself. You may be asked during class to re-explain an argument that you just heard. If you cannot follow the reasoning, it is your responsibility to ask a question of the student presenting.

If you are truly stuck on a question or proof outside of class, do not hesitate to ask the instructor for help. You should be working far enough ahead of the classroom presentations so that there is time for this consultation. In order to get the most out of this course, you must be willing to put in a sustained effort from the beginning of the semester to the end.
**Homework**

Your standing homework assignment is to write up solutions to all the questions and theorems in your book *Number Theory Through Inquiry* before they are presented in class. You are expected to complete this task on a **daily** basis, although I may only collect problems a few times a week. Please make every effort to keep your solutions neat and clean, and try to leave space for comments as necessary. You should also keep a notebook containing all your notes and solutions from class; this will serve as your personal textbook for this course, and will help you study for exams. Writing up the proofs and solutions is an excellent way for you to learn the mathematics.

Many homework assignments will be graded by me, while others may be peer graded. I will hand out guidelines that will make the task of grading your peers fairly straightforward. The process of reading and checking other people’s work for correctness is of great value. You will find yourself becoming a better and more proficient writer and much more appreciative of clear, neat, concise work. Seeing other people’s often imperfect work also is good practice for evaluating the validity of arguments as opposed to the precise (almost too slick) work often presented in your textbooks or by your professors.

**Presentations**

On most class days, I will ask you to present proofs of theorems you have been working on. Please come to class each day prepared to present the theorems scheduled for that day; you won’t be called upon to do so every day, but I want you to be ready in case you are. If you proved one theorem that you thought was particularly interesting or difficult, you should let us know so we all can see your proof!

Keep in mind that talking to others about a proof you have done is a bit different from writing a proof. The act of talking about a proof gives you the opportunity to show people how the ideas of the proof fit together, and what issues you had to deal with when working on the problem. One thing we want you to develop in this course, besides your geometry skills, is your ability to communicate mathematics to others.

When your classmates are presenting, it is your responsibility to follow their line of reasoning. Keep in mind that their argument may be different from yours; alternative proofs are especially common in a geometry course, where there are literally dozens of ways to prove certain propositions. If you see something in a proof that you don’t understand, please ask about it. If you see a possible mistake, please ask about it. If there is something about the proof that you thought was interesting or clever, feel free to comment on it! In each case, please be considerate of the person at the front of the room, and treat him/her the way you’d like to be treated when it’s your turn to present.
EXAMS

There will be two hour-exams during the semester. Each will be announced at least one week in advance. The final examination will be comprehensive and will take place at the time indicated on the Registrar’s website.

GRADING

Your grade in this course will be determined by the following:

- Homework Write-ups – 10%
- Presentations and participation – 20%
- Two midterm exams – 20% each
- Final exam – 30%

In determining your final grade, earning a course average of 90% will guarantee you and A, 80% a B, etc. I may lower these percentages, but I will not raise them.

WHAT YOU CAN DO NOW TO HELP YOUR FINAL GRADE

Read the material proceeding each theorem or question you are to address. It may contain some valuable insights. Secondly, you will get the best results for this course if you struggle with the problems yourself. Studying other people’s solutions does little to help you grow as a problem solver and proof writer. You will find that even when you are stuck on a problem, only a subtle hint will be needed to get you on the right track if you have spent a significant amount of time thinking about the issue yourself. Future material will be that much easier. Lastly, do seek help from me when you need it. I may not always be forthcoming with answers, but will can generally get you moving in the a productive direction. Don’t wait to get help until it is too late!

Do assignments on time!
TURN OFF YOUR CELL PHONES!
No surfing the web or instant messaging!
Keep your hands and feet inside the classroom at all times!
And Please, No Flash Photography!