

MATH 444: Overview of the project

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These notes are partially taken from Steph van Willigenburg who has taught MATH 444 a number of times.

Goal: Explore some mathematical ideas that interest you, then share your exploration.

Groups: The project will be done in groups of 2-3 students.

Topics: We will discuss ways to select topics as the course progresses. You may already have a topic in mind or you may discover a topic doing some of the early assignments in the course. It is important to discuss a topic with me so I can help you decide if it is a useful choice of topic.

Progress Report: This is a formal requirement that will be graded as an assignment and ensures that you get (additional) feedback on your project.

Written Project: Once you have chosen and researched your topic, the end product will be an academic article of about 10 pages in length (can be longer but this provides a guide), written in LaTeX in 12 point font. It will consist of

A title and abstract.

An introduction motivating your topic.

Definitions and examples.

Theorems and proofs (maybe some you discovered!). Perhaps conjectures. Perhaps algorithms.

A bibliography.

Project Assessment

This project/paper is 50% of the grade in the course. It will be done in Latex (you have probably seen the tex sample on the course website) and a paper copy will be handed in. The project would be something like 10 pages of 12pt Tex. More is fine.

The grading of projects will consider a number of factors. I am looking for an interesting read. Factor 1: I will look at the content. More elementary Mathematics will not get as much credit as harder Mathematics. I want to be amazed. At the very least, you want to amaze the first year version of yourself.

Factor 2: The clarity of the Mathematics will matter greatly. Some of you have rightly pointed out that there is a tradeoff between Mathematical sophistication and your abilities to present it clearly. My advice is to do both: interesting Mathematics and clear/logical exposition. But is probably sensible to only tackle Mathematics that you can explain clearly. Note the need for definitions/notation.

Factor 3: In addition there will be some marks associated with the style of the report. Interesting motivations improve the style. Poor grammar or spelling detract from the style. Sloppy presentation is not welcomed.

You should avoid words such as clearly or obvious. I will deduct 5% for each usage of such words. You should not copy material from sources, whether cited or not (this falls under plagiarism) and instead digest the material and rewrite it yourself. Examples are often a helpful addition in this process. And maybe a few pictures.

The project is not to be confused with the final assignment of the course which is a separate activity of a group presentation from the project done in the last week of class.