

Number Theory MATH 354

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Textbook

A Friendly Introduction to Number Theory, 4th Edition, Joseph H. Silverman.

You can find an overview of this book at <https://www.math.brown.edu/~jhs/frint.html>.

Topics covered

We are going to begin by covering Chapters 1-18 of Silverman's book. This will take us up to a point where we understand the RSA cryptosystem.

This leaves us with a range of topics to choose from, that we can decide by popular vote. Two things we will certainly cover are Quadratic reciprocity and Diophantine approximation.

Final project

This is going to be a central part of the class and a valuable chance for you to learn how to write and present some mathematics.

By around halfway through the class, you will have decided, in consultation with me, on a topic in Number Theory that you will study in detail for your final project.

The expectation for this project is that you give a clear exposition of the topic, written with LaTeX, that is around 10-15 pages long. *You will also give a presentation to the class on your topic.*

In order to get your writing up to a high standard, you will submit several drafts of your project to me at scheduled dates and I will give you feedback for your next draft. By the end, you should have a nice piece of mathematical writing.

I can also help coach you on your presentation skills.

Class Website

All important information and resources for the class can be found at <http://users.math.yale.edu/users/mrm89/nt.html>

Times and locations

We meet for Lecture in LOM 205, on Tuesday and Thursday from 2.30pm to 3.45am. My office hours are to be announced.

How the class will be graded

Homeworks 40%

Final project 40%

Final presentation 20%

Prerequisites.

MATH 350 or equivalent.