

MATH 312: INTRODUCTION TO NUMBER THEORY

Instructor: SUJATHA RAMDORAI

2012W; Mon, Wed, Fri : 11:00-12:00

Office hours and location : Math Annex 1201, Mon:12-1, Wed:1-2.

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Textbook: Kenneth Rosen, Elementary Number Theory and its applications, 6th Edition

COURSE DESCRIPTION

This course is intended as an introduction to the basic concepts in Number Theory, such as prime numbers, factorization, congruences, along with some applications, especially in cryptography. This is a third year level course in Mathematics and as such, proofs will form an important part of teaching and learning. Regular reading and working through problems from the text are expected from the students.

There will be two quizzes in class, one midterm exam, one final exam and upto six assignments. Course evaluation will be as follows:

- Final Exam (in class): 50 points
- Midterm Exam (in class): Friday, October 19th: 30 points
- Quizzes (20 minutes, in class): 10 points
- Assignment: 10 points

Students are expected to be present at all examinations. NO MAKEUP TESTS OR QUIZZES WILL BE GIVEN. Non-attendance at an exam/quiz will result in a mark of zero being assigned. Unavoidable and documented medical emergencies will be considered as exceptions at the discretion of the instructor.

Homework will be available on the Course webpage every Friday and should be turned in the following Friday in class. Late homework will not be accepted. Students are allowed to consult one another over the homework problems, but the submitted solutions must be written by the student. If two students submit virtually identical answers to a

question, both are liable to be found guilty of plagiarism. The lowest assignment grade will be dropped.

Tentative Topics to be Covered:

- Chapter 1: 1.1, 1.3, 1.5
- Chapter 3: 3.1-3.5, 3.7
- Chapter 4: 4.1-4.3
- Chapter 5: 5.1, 5.2*, 5.5
- Chapter 6: 6.1-6.3
- Chapter 7: 7.1-7.3
- Chapter 8: 8.1, 8.4, 8.6
- Chapter 9: 9.1-9.2, 9.3*, 9.5

* The starred sections (5.2 and 9.3) will not be tested.