

Math 406 – Syllabus – Spring 2004

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Office Hours: (Tentative) Monday 2-3 p.m., Wednesday 11-12 a.m., or by appointment.

Course: Introduction to Number Theory, MWF 1:00-1:50 pm, in MTH 0304. Section 0201.

Text: Kenneth H. Rosen, *Elementary Number Theory*, 4th Edition.

Recommended supplemental text: H. Davenport, *The Higher Arithmetic*, Cambridge University Press, 7th Edition (or any earlier edition).

Calculator: TI-83 (or TI-83 Plus). You will be allowed (and expected) to use this calculator in this course, on homework assignments and on in-class examinations. Certain computations can only be done easily with a calculator, so it is highly recommended that you obtain one of the above calculators as soon as possible.

This course will cover elementary number theory, with some applications. Some topics include prime numbers, divisibility and the Division algorithm, congruences, the Chinese remainder theorem, primality testing, factorization methods, pseudoprimes, Mersenne primes, RSA cryptography, primitive roots, and quadratic reciprocity. This material is included in the following sections of Rosen's book:

Chapter 1:	1.1-1.4
Chapter 3:	3.1-3.6
Chapter 4:	4.1-4.5
Chapter 5:	5.1
Chapter 6:	6.1-6.3
Chapter 7:	7.1-7.4
Chapter 8:	8.3 -8.4
Chapter 9:	9.1-9.5
Chapter 11:	11.1-11.2

Homework/Quizzes: Homework problems will be assigned weekly on Wednesdays, but will not be marked. Homework problems will be posted on the course web-site. There will be approximately 10 brief in-class quizzes, which will consist of one or two problems taken from the most recently assigned homework problems. The quizzes will take place on Wednesdays, generally covering material assigned the previous Wednesday. Here are the tentative quiz dates:

February 4, 11, 18
March 3, 10, 17
April 7, 14, 21
May 5.

Your lowest three quizzes will be dropped in the calculation of your quiz grade.

Exams: Tentative dates for in-class exams:

Exam I: Wednesday, February 25.

Exam II: Wednesday, March 31.

Exam III: Wednesday, April 28.

The date and time of the final exam will be announced later.

Grading: Your final grade will be calculated according to the following scheme:

Exams I,II, and III: 20% each

Quizzes: 10%

Final Exam: 30%.

Other: No make-ups for quizzes will be given. Make-ups for in-class exams will only be given for *compelling* and *documented* reasons.

More details about the course description and topics, etc., will be available soon on my web-page. You will be able to access this through the math department page, and you should do so regularly to keep apprised of updates about this course.