Math 406 – Syllabus – Fall 2011

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Office Hours: (Tentative) Monday 10-11 am., Friday 3-4 pm, or by appointment.

Course: Introduction to Number Theory, MWF 11:00-11:50 am, in MTH 0103. Section 0101.

Text: Kenneth H. Rosen, *Elementary Number Theory and its applications*, 6th 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, Fibonacci numbers, divisibility and the Division algorithm, congruences, the Chinese remainder theorem, primality testing, factorization methods, Fermat and Mersenne primes, RSA cryptography, primitive roots, quadratic reciprocity, and non-linear Diophantine equations. This material is included in the following sections of Rosen's book:

Chapter 1:	1.1-1.5
Chapter 3:	3.1, 3.3-3.7
Chapter 4:	4.1-4.3 (4.4?)
Chapter 5:	5.1
Chapter 6:	6.1,6.3
Chapter 7:	7.1-7.4
Chapter 8:	8.1, 8.3-8.4
Chapter 9:	9.1-9.3
Chapter 11:	11.1-11.2
Chapter 13:	13.1-13.4.

Homework: Homework problems will be assigned weekly, and will be marked by a grader. Homework problems will be posted on the course web-site. Late papers will not be accepted. However, the lowest three grades will be dropped from your homework score.

Exams: Tentative dates for in-class exams:
Exam I: Wednesday, October 12.
Exam II: Friday, November 18.

Final Exam: Saturday, December 17, 8:00-10:00 am.

You will be allowed to use calculators, but no notes or other aids on your exams.

Grading: Your final grade will be calculated according to the following scheme:
Exams I,II: 25% each
Homework: 20%
Final Exam: 30%.

Other: 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 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.