

Math 8400 Syllabus (Fall 2009)

Topic: Introduction to Algebraic Number Theory

Room: Grad Studies 326

Call Number: 32-458

5th Period: 12:20-1:10 PM

Instructor: Dr. Robert Rumely

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Office Hours: MWF 10:00-12:00

Text: Matt Baker, Algebraic Number Theory Course Notes (Ga Tech, Math 8803, Fall 2006)

Available online at <http://people.math.gatech.edu/~mbaker/pdf/ANTBook.pdf>

Recommended references:

D. Marcus, Number Fields

S. Lang, Algebraic Number Theory

Purpose: This course will explore the structure of the ring of integers of a number field, along with motivating examples and applications. Major topics will include the unique factorization of ideals as products of prime ideals, the finiteness of the class number, Dirichlet's unit theorem, the Galois action on primes, and the Frobenius automorphism. The course will also introduce localizations, completions, and the product formula.

Grades: Grades in the course will be based on homework, two exams, and a comprehensive Final. Homework will be assigned weekly and collected on Fridays. The Final Exam is scheduled for Monday, December 14, 12:00-3:00 PM

Homework: 30%

In-class exams: 40%

Final: 30%

Deviations: This course syllabus is a general plan for the course; deviations announced in class by the instructor may be necessary.

Academic Honesty: This course will operate in accordance with UGA's academic honesty policy (<http://www.uga.edu/ovpi>). All academic work must meet the standards contained in "A Culture of Honesty". Students are responsible for informing themselves of these standards before performing any academic work.