

Math 568: Number Theory II - Spring 2009
Tu, Th 2:30-3:45pm, 113 McAllister

General Information

Instructor: Dr. Kirsten Eisenträger

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Office hours: Tu 4-5pm, We 2-3:30pm, and by appointment

Textbook: *Number Fields* by Daniel A. Marcus, Springer-Verlag

Course webpage: <http://www.math.psu.edu/eisentra/courses/math568>

Course Topics: This is the second semester of the graduate number theory sequence.

The topics covered in this class will include:

- Number fields and rings of integers (Chapter 2).
- Decomposition of primes in number fields (Chapters 3 and 4).
- The class group of a number field, class group computations. The unit group of a number field, Dirichlet's theorem. (Chapter 5)
- Cyclotomic fields.
- Valuations and p -adic numbers, Hensel's lemma.

(The numbers refer to the chapters in Marcus' text.)

Prerequisites:

Any course on abstract algebra. Math 567 (Number Theory I) is *not* a prerequisite.

Grading:

There will be no exams in this class. Grades will be based on homework assignments and attendance.

Homework:

There will be a number of homework assignments which will be collected and graded. Homework is due at the beginning of class on the given due date. No late homework will be accepted without approval from the instructor in advance. You are encouraged to discuss the homework assignments with other students in the class. However, you are required to write up your own solutions.

All Penn State Policies (see <http://www.psu.edu/ufs/policies/47-00.html#49-20> and <http://www.science.psu.edu/academic/Integrity/index.html>) regarding ethics and honorable behavior apply to this course.