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Elementary Number Theory

MATH-311*

This course is ideal preparation for anyone intending to teach mathematics either at the high school level or the university level. It is a “friendly” introduction to some fundamental concepts of number theory that have also shaped much of mathematics. The course begins with an elementary study of prime numbers, congruences, leading to the fundamental law of quadratic reciprocity. This theorem is then connected to the theory of quadratic forms and continued fractions. Finally, there is a brief excursion into irrational, algebraic and transcendental numbers. If time permits, we will also look briefly at elliptic curves.

Textbook: *A Concise Introduction to the Theory of Numbers*
by Alan Baker

Prerequisite: MATH-212*

Instructor: R. Murty

Evaluation: Midterm 20%
Homework 80%