

**Tennessee Technological University
Mathematics Department**

MATH 4050/5050: Number Theory

I. COURSE DESCRIPTION FROM CATALOG:

Properties of integers, division algorithms, prime numbers, Diophantine equations, congruences.
Lec. 3. Cr. 3.

II. PREREQUISITE(S): Consent of instructor

III. COURSE OBJECTIVE(S): This course serves as an introduction to elementary number theory for senior/graduate students in mathematics/mathematics education.

IV. TOPICS TO BE COVERED: It should thoroughly treat the basic properties of integers to include the infinitude of primes, divisibility, congruences, quadratic residues through the Fundamental Theorem of Arithmetic, Chinese Remainder Theorem and Quadratic Reciprocity Law. It should introduce arithmetic functions and generating functions and, to a lesser extent, topics and problems on the distribution of primes and solutions of Diophantine equations.

V. ADDITIONAL INFORMATION:

Graduate credit is earned on the basis of additional work required by the instructor per TTU Graduate Catalog.

VI. POSSIBLE TEXTS AND REFERENCES:

Elementary Number Theory, by David Barton
Elementary Number Theory, by Jones & Jones

VII. ANY TECHNOLOGY THAT MAY BE USED:

Maple

Students with a disability requiring accommodations should contact the Office of Disability Services (ODS). 1
An Accommodation Request (AR) should be completed as soon as possible, preferably by the end of the first week of the course. The ODS is located in the Roaden University Center, Room 112; phone 372-6119.