**MA\*715 Number Theory**

Peano’s axioms, divisibility, properties of integers and prime numbers, fundamental theorem of arithmetic. Congruences, solutions of congruences, congruences of degree one, congruences of higher degree. Quadratic residues, quadratic reciprocity, Jacobi symbol, greatest integer function, arithmetic functions, the Mobius inversion formula, multiplication of arithmetic functions, recurrence functions, some Diophantine equations, simple continued fractions, distribution of primes, algebraic numbers, algebraic number fields, partition function.

**References:**

1. Jody Esmonde and M Ram Murty, Problems in algebraic number theory, Springer-Verlag, 1999
2. Kenneth Ireland and Michael Rosen, A classical introduction to modern number theory, Springer-Verlag, 1990
3. Richard A Mollin, Algebraic number theory, CRC Press Series on Discrete Mathematics and Its Applications, Chapman & Hall, 2000