(——; 3-0-0) **Analytic Number Theory** MATH-412*

This is an introduction to analytic number theory. Students should have a solid background in real and complex analysis. Some background in algebra would also be helpful though not essential. We will introduce the Riemann zeta function as well as Dirichlet's L-functions and use them to prove the prime number theorem for primes in arithmetic progressions. En route to these major theorems, we will explore the important Tauberian theorems of Wiener and Ikehara and apply them to a variety of questions emanating from number theoretic questions.

Textbook: *Problems in Analytic Number Theory*
by R. Murty (Springer-Verlag)

Prerequisite: MATH-326* *and* MATH-328*

Instructor: R. Murty

Evaluation: Homework 100%