

Math 571 - Analytic Number Theory

Course topics

- Order and mean values of arithmetic functions
- Chebychev and Mertens prime number theorems
- Generating functions
- Dirichlet characters and L-functions
- Dirichlet's theorem on primes in arithmetic progressions
- Riemann zeta functions
- De la Vallée Poussin's form of the prime number theorem
- Siegel-Walfisz theorem

Time permitting, the course will also cover one or more of the following topics:

- Large sieve and Bombieri's theorem
- Selberg sieve
- Hardy-Littlewood method; Goldbach and Waring problems
- Diophantine approximation and uniform distribution