



The Graduate Center of CUNY

Ph.D. Program in Mathematics

Course Description

Fall 2022

Course Title: Topics in Algebraic Number Theory

Course #: 87000

Day & Time: TH 2:00 PM-4:00 PM

Instructor Name: Victor Kolyvagin

Contact Information: VKolyvagin@gc.cuny.edu

Prerequisites:

Office Hours: TH 1:00 PM-2:00 PM

Mode:  In Person

#### Course Description

The course will be concentrated around the study of global and local cyclotomic fields.

Main topics include: analytical functions in local fields; Fermat's equations over cyclotomic fields; the second case of Fermat's Last Theorem for regular exponents via the Kummer approach; divisor class groups of cyclotomic fields and Galois eigenspaces in them; Gauss sums and Stickelberger theorem.

It is supposed that the students have 1 year algebra course and are familiar with the theory of divisors in number fields.

The book to be used : " Number Theory " by Borevich and Shafarevich.