

The Graduate Center of CUNY Ph.D.
Program in Mathematics Course Syllabus

-Fall 2020

Course Title: Topics in Algebraic Number Theory

Course #: 87000

Time and Location: TH 2PM-4PM, room

Instructor Name: Victor Kolyvagin

Contact Information: VKolyvagin@gc.cuny.edu

Pre-Requisites: _____

Office Hours: TH 1PM-2PM

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.