

Fall 2012

Prof. V. Kolyvagin

MATH 87300: Topics in Algebraic Number Theory [18717]
Thurs, 1:00pm - 3:00pm

Course Description

The course will introduce beginnings of Euler Systems method for bounding Selmer-type groups, with applications to arithmetic of elliptic curves.

Main topics will include:

Elliptic curves, their Mordell-Weil, Shafarevich-Tate and Selmer groups; modular parametrizations and L-functions; Heegner points over ring class fields; special Galois cohomology classes, reciprocity law, bounding of Selmer groups; applications to Mordell-Weil and Shafarevich-Tate groups; Gross-Zagier formula; and applications to the Birch-Swinnerton-Dyer conjecture.

Knowledge of basics of Algebraic Number Theory and Galois cohomology will be useful for the course learning. There will be no particular textbook to be used.