The Graduate Center of CUNY Ph.D.

Program in Mathematics Course Syllabus

-Fall 2020

Course Title: Algebra I

Course #: Math 70500

Time and Location: Mo, Wed, 9:30am-11:00am

Instructor Name: Ilya Kapovich

Contact Information: ik535@hunter.cuny.edu

Pre-Requisites:

Office Hours: Fridays 9am-11am

Description:

This is the first semester algebra course aimed primarily at the incoming graduate students. The main textbook is "Abstract Algebra" by Dummit and Foote (3d edition). Topics covered include: Groups, group actions, Sylow subgroup theorems, finitely generated abelian groups; Rings, ideals, Euclidean domains and PIDs, unique factorization domains; Polynomial rings, unique factorization and irreducibility; Modules, tensor products; Vector spaces and elements of linear algebra; Field theory, algebraic extensions, splitting fields; elements of Galois theory.

The course will involve regular graded homework, a midterm exam and a final exam.