

Math 553a/353a
Instructor: Anna Lachowska
TTH 2:30-3:45
Rm. 205 LOM

Introduction to Representation Theory

First Meeting: Thursday, August 28, 2014

The course is intended for advanced undergraduate and beginning graduate students. Its main focus is the representation theory of finite groups over the complex numbers. However, we will try to view the subject in a more unified way and emphasize the results common to representation theory of groups, associative algebras, Lie algebras, and quivers. Linear algebra (Math 222, Math 225, or Math 230) is a prerequisite, and some knowledge of group theory is welcome, although we will review the necessary basics in class.

Topics include: Associate algebras, examples; basic concepts in representation theory: subrepresentations, quotients, direct sums, tensor products; representations of finite groups over complex numbers; characters and orthogonality relations; induced representations, representations of the symmetric group, Schur-Weyl duality. Depending on the background and interest of the audience, we will consider further representations of compact groups, Lie algebras, or quivers.

Fall Term 2014