SYLLABUS FOR SPRING 2020 MAT GR6308: ALGEBRAIC TOPOLOGY II

FRANCESCO LIN

Schedule. Monday and Wednesday, 11:40AM-12:55PM.

Contents. This class will cover the following topics:
  • Basics of homotopy theory
  • Obstruction theory and characteristic classes
  • The Serre spectral sequence and its applications
  • Steenrod squares
  • K-theory and the Atiyah-Singer index theorem

References. We will mostly follow these books:
  • Davis, Kirk - Lecture notes in algebraic topology
  • Fuchs, Fomenko - Homotopical topology
  • Shanahan - The Atiyah-Singer index theorem

Grading. There will be weekly homework assignments, and a take home final.

Office hours. Monday and Wednesday, 10:30AM-11:30AM.