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
- Computations of some homotopy groups of spheres
- K-theory and relations with the index theorem

References. We will mostly follow these books:
- Atiyah - K-theory
- 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. Some lectures will be dedicated to problem sessions.

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