Algebraic Topology - A
(Topologia Algebrica A)

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2025/2026 – 1° semester

Introduction

Broadly speaking the goal of algebraic topology is to apply algebraic techniques to study topological spaces and associated invariants. This course focuses on several aspects of homotopy theory. We will present many results and techniques used in this setting.

Content

Topics covered in this course will include the following:

- Cofibrations, cofibration sequence;
- Fibration and Barratt-Puppe fibration sequence;
- Postnikov towers;
- $K(\pi, n)$ spaces and Whitehead towers;
- Representability of cohomology;
- Vector bundles and principal bundles;
- The classifying space of a group;
- Simplicial sets and classifying spaces;
- Serre spectral sequence, transgression; Serre classes and applications;
- Steenrod squares;
- other spectral sequences

Practical information

The course duration is 42 hours, and it will take place in the second semester. There will be an oral examination, possibly including a short seminar.

Prerequisites

Basic notions of algebraic topology. Having attended the course "Elementi di topologia algebrica" is strongly recommended.

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