

The course offers a broad introduction to algebraic topology and is devoted to the main topological invariants of spaces, together with techniques for calculating them. Students with knowledge of real analysis, elementary group theory, and linear algebra will quickly become familiarized with a variety of techniques and applications involving point set, geometric and algebraic topology.

Textbook: *Basic Topology*
by M.A. Armstrong (Springer-Verlag)

Prerequisite: MATH-281* and 212*.

Instructor: O. Bogoyavlenskij

Evaluation:	Homework	30%
	Midterm Test	20%
	Final Examination	50%

Outline:

1. Topological equivalence and topological invariants
2. Properties of compact spaces
3. Topological groups
4. Orbit spaces
5. The fundamental group
6. Covering spaces
7. Homotopy type
8. The Brouwer fixed-point theorem
9. Triangularizations
10. Euler characteristics
11. Homology and cohomology groups
12. Homotopy groups
13. Degree and Lefschetz number