Study programmes: MASTER STUDIES - Mathematics

Course name: Selected topics of algebraic topology

Lecturers: Siniša Vrećica, Aleksandar Vučić, Vladimir Grujić

Status: Optional

ECTS: 8

Attendance prerequisites: Algebraic topology

Course aims: Acquisition of basic knowledge from cohomology and homotopy theory.

Course outcome: Upon completion of the course, the student mastered basic notions of cohomology theory and homotopy theory. Student understands notions: cohomology ring, Poincare duality, homotopy groups. Student is familiar with important theorems such as the theorem of duality and Hurewitz's theorem. Student is qualified to solving problems from mentioned areas. Also, student is qualified to follow advanced courses in topology and other mathematical areas where topology has important applications.

Course content: Cohomology groups, cohomology ring, Kunneth formula. Orientations and homology, duality theorems. Homotopy groups, Whitehead's theorem, Hurewicz's theorem, bundles, obstruction theory.

Literature:

1. Allen Hatcher, Algebraic Topology, Cambridge University Press, Cambridge, 2001.

Number of hours: 7	**Lectures**: 3	**Tutorials**: 2	**Laboratory**: -	**Research**: 2

Teaching and learning methods: Frontal / Tutorial

Assessment (maximal 100 points)

Course assignments	**points**	**Final exam**	**points**
Lectures	-	Written exam	20
Exercises / Tutorials	-	Oral exam	20
Colloquia	30	Written-oral exam	-
Essay / Project	30		