Study programmes: Bachelor studies – Mathematics

Course name: Topology B

Lecturers: Siniša Vrećica, Aleksandar Vučić, Vladimir Grujić, Branislav Prvulović

Status: Compulsory

ECTS: 5

Attendance prerequisites: Topology A

Course aims: Getting familiar with some basic topology objects, such as polyhedra and surfaces, and with fundamental group and related notions

Course outcome: After completing the course, a student is familiar with notions and classification of central geometrical objects - polyhedra and surfaces. He/She understands and is able to compute (in various ways) fundamental groups of some important spaces; and also, he/she can apply this notions to verify some famous results such as Brouwer fixed-point theorem, fundamental theorem of algebra etc.

Course content:

- Geometry of simplicial complexes, barycentric subdivision, simplicial approximation
- Fundamental group, functoriality and homotopy invariance
- Covering spaces
- Fundamental group of the circle
- Brouwer fixed-point theorem, fundamental theorem of algebra, Borsuk-Ulam theorem
- Van Kampen's theorem
- Fundamental group of polyhedron
- Classification of surfaces

Literature:

1. M. Marjanović, S Vrećica, Topologija
2. A. Hatcher, Algebraic Topology

Number of hours: 4	**Lectures: 2**	**Tutorials: 2**	**Laboratory: -**	**Research: -**

Teaching and learning methods: Lectures / Tutorials

Assessment (maximal 100 points)

Course assignments	**points**	**Final exam**	**points**
Lectures	-	Written exam	30
Exercises / Tutorials	-	Oral exam	40
Colloquia	30	Written-oral exam	
Essay / Project	-		