Study Program: Mathematics

Type and level of studies: Bachelor studies, VIII semester

Course name: Topology

Lecturer: Ivan D. Aranđelović

Status: Compulsory

ECTS:7

Attendance Prerequisites: Real analysis

Course aims

Introduction to the basic properties of topological spaces, as well as to the applications of topological procedures in mathematical analysis and geometry.

Course outcome

The students have grasped the basic concepts of the theory of topological spaces; they have achieved the synthesis of knowledge about different properties of continuous mappings and convergence adopted in previous schooling.

Course content

Axiomatic set theory. Equivalents of the axiom of choice. Cardinal numbers. Partially ordered sets. Networks. Tarski's theorem. Ordinal numbers.

Topological spaces. Basic terms, definitions, features and examples. Inner point, interior, exterior and set edge. Base and pre-base. Axioms of separability and countability. Convergence. Continuous functions. Homeomorphisms. Infinite products of topological spaces. Quantitative spaces. Separation axioms. Spaces of Kolmogorov, Freche, Haudorf and Tikhonov. Regular and normal spaces. Urison's theorems. Compact spaces. Compactness and axioms of separation. Weierstrass theorems. Products of compact spaces. Sequentially compact spaces. Locally compact spaces. Countable compactness and paracompactness. Connected spaces. Products of connected spaces. Locally connected spaces. Road-connected spaces. Even spaces. Topological groups.

Practical part: Exercises, Other forms of teaching, Study research work

Classroom exercises follow the course of lectures, on the same thematic units. The exercises also include consultations for the preparation of a seminar paper that is done in the field of topological properties of Euclidean spaces.

Literature

1. М. Марјановић, С. Врећица, Топологија, „Завод за уџбенике“, Београд 2012.
2. М. Мршевић, Збирка решених задатака из топологије, Научна књига, Београд 1982.
3. М. Курилић, Основи опште топологије, ПМФ Нови Сад 1998.
4. Д. Аднађевић, Топологија, Научна књига, Београд 1980.

Number of active classes				Other classes
Lectures: 4	Practical classes: 3	Other forms of teaching:	Students' research work	

Teaching methods

Lectures, consultations, term tests, hospitation.

Assessment (maximum 100 points)

Course assignments	**points**	Final exam	**points**
activity during lectures	**5**	written exam	**35**
practical classes	**-**	oral exam	**30**
term test(s)	**20**	.....	
seminar(s)	**10**		
Total	**35**		**65**