Title of the course: Introduction to set theory

Course instructor: Miloš Kurilić

Status of the course: non-obligatory

Number of ESPB points:

Prerequisites: none.

Aim of the course:

Students should get familiar basic notions of set theory, in the usual axiomatic system ZFC.

Expected results of the course:

At the end of the course a student is expected to show understanding of covered material of set theory through presenting proofs of theorems and familiarity with basic examples in this area.

Syllabus:

Lectures:

Zermelo-Fraenkel axioms of set theory. Partially and well-ordered sets. Ordinals. Theorems about transfinite induction and recursion. Ordinal arithmetic (addition, multiplication and exponentiation of ordinals). Cardinals and cardinal arithmetic. Well-founded sets. Almost-disjoint and quasi-disjoint sets. Martin's axiom and its equivalents. Filters and ideals, closed unbounded, stationary, and thin sets.

Recommended literature:

- 1. Thomas Jech, Set Theory, Springer, 1997.
- 2. Kenneth Kunen, Set Theory: an Introduction to Independence Proofs, North-Holland, 1980.
- 3. Frank R. Drake: Set Theory: an Introduction to Large Cardinals, North-Holland, 1974.

Number of teaching hours:	Lectures:	Tutorial:
Methods of teaching:		
Lectures, problem-solving, and student presentations.		
Grade (maximum number of points 100)		
Seminar or homework: 50 points.		
Oral exam: 50 points.		