Study program: Mathematics (Ph.D. program)	
Course: Set Theory 1	
Course instructor(s): Miloš Kurilić	
Course type (compulsory/elective): elective	
Credit points: 10 ECTS	
Prerequisites: -	

Course objectives:
Introduction to elements of the classical set theory.

Learning outcomes:
Minimal:
Understanding of the studied parts of the set theory through reproduction of its main results.
Desirable:
Deeper understanding of the theory, through more sophisticated examples, applications and connections to other braches of mathematics.

Course description (outline):
The axiom system of the Zermelo-Fraenkel (ZF) set theory. Partially and well ordered sets. Ordinals, transfinite induction and recursion. Ordinal arithmetic (addition, multiplication, exponentiation). 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.

References:
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.

Active teaching hours	**Theoretical classes:** 2	**Practice classes:** -6

Methods of teaching:
Lectures, with active participation of the students, discussion, etc.

Grading structure			
Pre-exam obligations	**Points**	**Exam**	**Points**
Colloquia	**50**	Oral exam	**50**
Seminars			