Course: Theory of ordered sets

Course instructors: Andreja P. Tepavčević

Course type: Elective

Credit points ECTS: 12

Prerequisites: No

Course objectives:

Introducing students to the most important orderings in mathematics, their properties and role in other mathematical disciplines.

Learning outcomes:

Minimal: Understanding the fundamental concepts and properties of ordered sets.

Desirable: Ability to independently and creatively solve more complex problems from ordered sets and a deeper under-standing of all significant features of ordered sets.

Course description (outline):

Basic concepts and results: fixed points, closure operators; completion.

Chains and anti-chains. Well-orderings.

Linear orders and linear extensions.

Products of orders and cardinal degree. Lattices.

Complete, algebraic and compact ordered sets.

References:

- 1. B.S.W. Schröder, Ordered sets, an Introduction, Birkhäusser, 2003.
- 2. E. Harzheim, Ordered Sets, Springer, 2005.
- 3. M. Erne, *Algebraic ordered sets and their generalizations*, In: Rosenberg, I., and Sabidussi, G. (eds.), Algebras and Orders. Kluwer, Amsterdam, 1993.

Active teaching hours: 5	Theoretical classes: 5	Practice classes:
Methods of teaching:		
Theoretical classes with constant interaction with students.		
Grading structure (100 points)		
Colloquia: 50 points; oral exam: 50 points.		