Course title: Homogeneous structures 1 (ID024)

Lecturer(s): Mašulović M. Dragan, Dolinka V. Igor

Status: elective

ECTS: 7

Requirements: none

Learning objectives

Introducing students to the first priciples of the theory of countable homogeneous structures.

Learning outcome

At the end of the course, each successful student shall be able to construct and examine countable homogeneous structures using the method of Fraïssé.

Syllabus

Structures. Homomorphisms and substructures. Formulas and types. Maps and the formulas they preserve. Theorems of Skolem (without proof). Back-and-forth equivalence. Automorphisms. Interpreting one structure in another. Amalgamation and preservation. Fraïssé construction and ω-categorical structures. Ryll-Nardzevski theorem. Some important examples of countable homogeneous structures: random graph, random poset, rational Urysohn space

Recommended literature

1. W. Hodges, *A shorter model theory*, Cambridge University Press 2002
2. S. Hedman, *A first course in logic*, Oxford Texts in Logic 1, Oxford University Press, 2008
3. P. J. Cameron, *Oligomorphic permutation groups*, London Mathematical Society Lecture Note Series 152, Cambridge University Press, 2001

Weekly teaching load	Lectures: 2	Student research: 0

Teaching methodology

Theoretical instruction lectures are based on the classical teaching model (blackboard+video beam). Students are obliged to submit a seminar paper. At the oral exam students are expected to demonstrate the in-depth understanding of the material.

Grading method (maximal number of points 100)

Seminar paper 70, Oral exam 30