Study programmes: Bachelor studies – Mathematics

Course name: M1.17 Mathematical Logic in Computer Science

Lecturers: Žarko Mijajlović, Milan Božić, Zoran Petrović

Status: Compulsory

ECTS: 5

Attendance prerequisites: Introduction to Mathematical Logic

Course aims: Acquisition of general and specific knowledge of Mathematical Logic in Computer Science

Course outcome: Upon completion of the course, the students have knowledge of Mathematical Logic in Computer Science. The students understand the following concepts: Tarskian semantics, Deductive systems, First-order theories, Decidability. The students know fundamental results of Automated Theorem Proving. They will be able to solve problems in the field, and to attend advanced courses in which the acquired concept and techniques should be applied.

Course content:
Syntax of propositional logic; syntax of first-order logic. Tarskian semantics. Some methods for checking first-order validity (the method of tableaux; the resolution method). Deductive systems: System K, Natural Deduction, Sequent Calculus. First-order theories; decidability and decision procedures.

Literature:
Z. Ognjanović, N. Krdžavac, *Uvod u teorijsko računarstvo,* Beograd – Kragujevac 2004.

Number of hours: 4	**Lectures: 2**	**Tutorials: 2**	**Laboratory: -**	**Research: -**

Teaching and learning methods: Lectures/ Tutorials

Assessment (maximal 100 points)

Course assignments	**points**	**Final exam**	**points**
Lectures	-	Written exam	30
Exercises / Tutorials	-	Oral exam	40
Colloquia	30	Written-oral exam	-
Essay / Project	-		