

Study Programme: Computer Science – Master			
Course Unit Title: Model Theory in Computer Science			
Course Unit Code: CS755			
Name of Lecturer(s): Maja Pech			
Type and Level of Studies: Master Academic Degree			
Course Status (compulsory/elective): Elective			
Semester (winter/summer): Winter			
Language of instruction: Serbian (primary), English (secondary)			
Mode of course unit delivery (face-to-face/distance learning): Face-to-face			
Number of ECTS Allocated: 6			
Prerequisites: None			
Course Aims: In this course students shall acquire basic knowledge in model theory and will understand fundamental model theoretic results, as well as their applications in mathematics and computer science.			
Learning Outcomes: At the end of the course a successful student will be able to formulate and solve standard model theoretical problems, to apply standard techniques to examples and to explain applications.			
Syllabus: The course will include: <input type="checkbox"/> Basic definitions and results (e.g. classifying structures by formulas, relation of preservation, quantifier elimination, types, etc.) <input type="checkbox"/> Classical model theoretical results (e.g. Löwenheim-Skolem theorems, back-and-forth techniques, compactness for first-order logic and consequences, etc) Special topics and applications (e.g. skolemization, categoricity, etc.)			
Required Reading: W. Hodges, A Shorter Model Theory, 1997. C. C. Chang, H. J. Keisler, Model Theory, 3rd Ed., Dover 2012 B. Poizat: „A Course in Model theory“, Springer 2000			
Weekly Contact Hours: 4	Lectures: 2	Practical work: 2	
Teaching Methods: Lectures are presented using classical teaching methods supported by beamer presentations and continuous interaction with students. The ability of application of theoretical knowledge is checked through independent solving of exercises on two colloquia. The final exam is oral and a student is supposed to demonstrate general understanding of the presented theoretical material.			
Knowledge Assessment (maximum of 100 points):			
Pre-exam obligations	points	Final exam	points
Active class participation		written exam	
Practical work		oral exam	60

Preliminary exam(s)	20+20		
Seminar(s)			
The methods of knowledge assessment may differ; the table presents only some of the options: written exam, oral exam, project presentation, seminars, etc.			