

<b>Study programmes:</b> Bachelor studies - Informatics				
<b>Course name:</b> R219 - Theory of Computability				
<b>Lecturers:</b> Predrag Janičić and other teachers of the Department of Informatics and Computer Science				
<b>Status:</b> Optional				
<b>ECTS:</b> 6				
<b>Attendance prerequisites:</b> M105				
<b>Course aims:</b> Acquisition of general and specific knowledge of Computability Theory.				
<b>Course outcome:</b> Upon completion of the course, students understand the fundamental notions and concepts of Computability Theory: informal versus formal algorithms, decidable and undecidable problems and their role in Computer Science.				
<b>Course content:</b> Turing Machines and their variants; Register machines; Primitive recursive functions, Recursive functions; Indices and enumerations, Universal machines, Kolmogorov Complexity; Decidability, undecidability and partial decidability, Recursive and recursively enumerable sets; Undecidability of first-order logic; Reducibility and degrees; Recursion theorems.				
<b>Literature:</b>				
1. George S. Boolos, John P. Burgess, Richard C. Jeffrey: Computability and Logic. Cambridge University Press, 2007.				
2. Irena Spasić, Predrag Janičić: Teorija algoritama, jezika i automata - zbirka zadataka, Matematički fakultet, Beograd, 2000.				
(the teacher can choose another relevant literature)				
<b>Number of hours: 5</b>	<b>Lectures: 2</b>	<b>Tutorials: 3</b>	<b>Laboratory: -</b>	<b>Research: -</b>
<b>Teaching and learning methods:</b> Lectures / Tutorials				
<b>Assessment (maximal 100 points)</b>				
<b>Course assignments</b>	<b>points</b>	<b>Final exam</b>	<b>points</b>	
Lectures	4	Written exam	-	
Exercises / Tutorials	-	Oral exam	-	
Colloquia	32	Written-oral exam	60	
Essay / Project	4			