Study programmes: Master studies - Informatics	
Course name: R319 - Computability Theory	
Lecturers: Predrag Janičić and other lecturers of the Department for Computer Science	
Status: Optional	
ECTS: 8	
Attendance prerequisites: No prerequisite	
Course aims: Acquiring knowledge about the theory of computational complexity.	
Course outcome: After the course, the student understands notions of computability, formal and informal notions of algorithms, notions of decidable and undecidable problems and their role in computer science.	
Course content: Turing machine and variations, UR machine, primitively recursive functions, recursive functions, enumeration, universal machines and Kolmogorov complexity. Reductions, decidability, undecidability, partial decidability, recursive and recursively enumerable sets. Undecidability of first order logic. Reductions and degrees, recursion theorems.	
Literature: 1. George S. Boolos, John P. Burgess, Richard C. Jeffrey: Computability and Logic. Cambridge University Press, 2007. 2. Ирена Спасић, Предраг Јаничић: Теорија алгоритама, језика и аутомата - збирка задатака, Математички факултет, Београд, 2000. (the lecturer can choose another appropriate literature)	

Number of hours: **7**	Lectures: **2**	Tutorials: **3**	Laboratory: **-**	Research: **2**
Teaching and learning methods: Frontal/Lectures/Exercises				

Assessment (maximal 100 points)			
Course assignments	**points**	**Final exam**	**points**
Lectures	4	Written exam	-
Exercises / Tutorials	-	Oral exam	-
Colloquia	32	Written-oral exam	60
Essay / Project	4		