Study programmes: Master studies - Informatics	
Course name: R310 - Design and analysis of algorithms 2	
Lecturers: Miodrag Živković and other teachers of the Department of Computing and Informatics	
Status: Optional	
ECTS: 8	
Attendance prerequisites: There are no prerequisites	
Course aims: Acquiring knowledge about advanced data structures, important graph algorithms, approximate algorithms for NP-complete problems and basic parallel algorithms.	
Course outcome: Upon completion of the course, the student has knowledge advanced data structures, important graph algorithms, approximate algorithms for NP-complete problems and basic parallel algorithms.	

Course content:
 - General techniques of design and analysis of algorithms.
 - Geometric algorithms.
 - Advanced Data Structures.
 - Linear Complexity Sorting, probabilistic algorithms.
 - Graph algorithms.
 - Solving the problems by reduction.
 - NP complete problems, approximate algorithms.
 - Parallel algorithms

Literature:
1. Miodrag Živković, Algoritmi, Matematički fakultet, Beograd, 2000.
2. T. H. Cormen, C. E. Leiserson, R. L. Rivest, C. Stein, Introduction to Algorithms, The MIT Press, Cambridge, 2009.
(the teacher can choose another relevant current literature)

Number of hours: **7**	Lectures: **2**	Tutorials: **3**	Laboratory: **-**	Research: **2**

Teaching and learning methods: Frontal, group and practical..

Assessment (maximal 100 points)			
Course assignments	**points**	**Final exam**	**points**
Lectures	-	Written exam	-
Exercises / Tutorials	-	Oral exam	-
Colloquia	30	Written-oral exam	70
Essay / Project	-		