

Study programmes: Bachelor studies – Mathematics				
Course name: Discrete mathematics				
Lecturers: Žarko Mijajlović, Milan Božić, Aleksandar Jovanović, Zoran Petrović, Gojko Kalajdžić, Aleksandar Lipkovski				
Status: optional				
ECTS: 5				
Attendance prerequisites: Introduction to Mathematical Logic				
Course aims: Acquisition of general knowledge in discrete mathematics.				
Course outcome: Upon completion of the course, the students have basic knowledge from various fields of discrete mathematics. The students understand the following concepts: generating function, graph, tree, algorithm, computational complexity, coding. The students know fundamental theorems of discrete mathematics. They are able to solve problems in the field, and to attend more advanced courses in mathematics and computer science in which discrete mathematics have applications.				
Course content: Natural numbers, mathematical induction, well-ordering principle. Equivalence relations and partitions. Counting techniques (rule of sum and product, inclusion-exclusion principle, generating functions); computational complexity theory (basic concepts and complexity classes); applications in cryptography (symmetric and asymmetric cryptography systems).				
Literature: 1. Ž. Mijajlović, Algebra, Milgor, Beograd, 1998; 2. J. A. Anderson, Discrete Mathematics with Combinatorics, Prentice Hall, 2003.				
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	-			