

Study programmes: Bachelor studies - Mathematics				
Course name: RM02 - Programming 2				
Lecturers: Gordana Pavlović-Lažetić, Filip Marić and other lecturers of the Department of Computer science				
Status: Compulsory				
ECTS: 6				
Attendance prerequisites: RM01				
Course aims: Acquiring general and specific knowledge about advanced programming techniques, program development methods and complex data structures and algorithms. Getting more familiar with details of C programming language.				
Course outcome: After completion of the course, students have adopted advanced concepts of procedural programming, programming techniques and program development techniques. They can independently implement programs in C programming language, which rely on advanced programming techniques (e.g., pointers, recursion, dynamic data structure).				
Course content: Advanced data types, unions, bit operators and bit fields Pointers; pointers and arrays; multidimensional arrays and arrays of pointers; pointers to functions Files; standard library; command line arguments of C program Notion of time and space complexity of algorithms Search and sorting algorithms - iterative and recursive implementations; search and sorting functions of standard library Dynamic memory allocation; dynamic data structures: list, queue, stack, tree Dynamic memory allocation functions Formal definition of algorithm and algorithmically unsolvable problems Overview of programming languages and programming paradigms				
Literature: 1. B. Kernighan, D. Ritchie: The C Programming Language, Prentice Hall, 1988. 2. G. Pavlović-Lažetić: Programiranje 1, Faculty of Mathematics, 2014. 3. F. Marić, P. Janičić: Osnove programiranja kroz programski jezik C, Faculty of Mathematics, 2014. (a lecturer can recommend different literature if deemed appropriate)				
Number of hours: 5	Lectures: 2	Tutorials: 2	Laboratory: 1	Research: -
Teaching and learning methods: Frontal/Lectures/Exercises				
Assessment (maximal 100 points)				
Course assignments	points	Final exam		points
Lectures	20	Written exam		-
Exercises / Tutorials	20	Oral exam		-
Colloquia	-	Written-oral exam		60
Essay / Project	-			