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| **UNIVERSITY OF NIŠ** | | | | | | |
| **Course Unit Descriptor** | | **Faculty** | | | Faculty of Electronic Engineering | |
| **GENERAL INFORMATION** | | | | | | |
| Study program | | | | **Electrical Engineering and Computing** | | |
| Study Module (if applicable) | | | | Common | | |
| Course title | | | | Fundamentals of Algorithms and programming | | |
| Level of study | | | | ☒Bachelor ☐ Master’s ☐ Doctoral | | |
| Type of course | | | | ☒ Obligatory ☐ Elective | | |
| Semester | | | | ☐ Autumn ☒Spring | | |
| Year of study | | | | 1 | | |
| Number of ECTS allocated | | | | 7 | | |
| Name of lecturer/lecturers | | | | Prof. Dr. Dragan Janković  Prof. Dr. Dejan Rančić  Ass. Prof. Dr. Vladimir Ćirić | | |
| Teaching mode | | | | ☒Lectures ☐Group tutorials ☐ Individual tutorials  ☐Laboratory work ☐ Project work ☐ Seminar  ☐Distance learning ☐ Blended learning ☐ Other | | |
| **PURPOSE AND OVERVIEW (max. 5 sentences)** | | | | | | |
| *To enable students to acquire knowledge of algorithmic problem solving and structured programming. To introduce basic data types, basic programing structures, and programming in language C.* | | | | | | |
| **SYLLABUS (brief outline and summary of topics, max. 10 sentences)** | | | | | | |
| **Algorithms, basic programming concepts and different algorithms representations. The graphical representation of algorithms. Control structures. Nested control structures. Types and data structures. The basic data types. Structured data types: linear, nonlinear. Examples of algorithms. Programming language C. Phase in the development of C programs. The structure of the program. Data Types in C. Constants. Operators. Operators priority. The structure of C and the main function. Standard input and output. Flow control. Arrays and matrices. Decomposition and functions in the C-in. Functions and parameters. The parameters of the function main. Recursive functions. Standard C libraries. Derived data types: pointers, structures, nested structures, self-referencing structures, unions. Dynamic memory allocation. Preprocessor directives. Memory class identifiers. Strings. Arrays of pointers, a matrix of strings. Input, output. Files. Text and binary file types.** | | | | | | |
| **LANGUAGE OF INSTRUCTION** | | | | | | |
| ☒Serbian (complete course) ☒ English (complete course) ☐ Other \_\_\_\_\_\_\_\_\_\_\_\_\_ (complete course)  ☒Serbian with English mentoring ☐Serbian with other mentoring \_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | | | | | |
| **ASSESSMENT METHODS AND CRITERIA** | | | | | | |
| **Pre exam duties** | **Points** | | **Final exam** | | | **points** |
| **Activity during lectures** | **20** | | **Written examination** | | | **40** |
| **Practical teaching** |  | | **Oral examination** | | | **40** |
| **Teaching colloquia** | **40** | | **OVERALL SUM** | | | **100** |
| **\*Final examination mark is formed in accordance with the Institutional documents** | | | | | | |