|  |
| --- |
|  **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 JankovićProf. Dr. Dejan RančićAss. 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** |