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|  **UNIVERSITY OF NIŠ** |
| **Course Unit Descriptor** | **Faculty**  | Faculty of Science and Mathematics |
| **GENERAL INFORMATION** |
| Study program  | **Computer Science** |
| Study Module (if applicable) |  |
| Course title | Software design |
| 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 | Rancic Svetozar |
| Teaching mode |  ☒Lectures ☒Group tutorials ☐ Individual tutorials ☐Laboratory work ☐ Project work ☐ Seminar ☐Distance learning ☐ Blended learning ☐ Other |
| **PURPOSE AND OVERVIEW (max. 5 sentences)** |
| To familiarize students with theoretical basis and practical implementation of compiler and interpreter. Students are able to design and implement individual phases of translation using existing tools and programming languages. |
| **SYLLABUS (brief outline and summary of topics, max. 10 sentences)** |
| **Description of programming languages, syntax diagrams, Backus Normal Form (BNF) and extended Backus Normal Form (EBNF), context-independent-grammars, LL, LR and related grammar, generators, compilers, attributed grammar, examples of compiler generator, compiler examples for a subset of procedural or object-oriented programming language, the basic parts of compilers, management tables of symbols, the basic elements of lexical analysis, syntax analysis - a method of recursive descent, LL analysis, semantic analysis of alignment types, the abstract machine, code generation, code optimization, advanced methods of syntax analysis, application of LL and LR grammars.** |
| **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** | **0** | **Written examination** | **25** |
| **Practical teaching** | **25** | **Oral examination** | **25** |
| **Teaching colloquia** | **25** | **OVERALL SUM** | **100** |
| **\*Final examination mark is formed in accordance with the Institutional documents** |