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|  **UNIVERSITY OF NIŠ** |
| **Course Unit Descriptor** | **Faculty**  | Faculty of Electronic Engineering, Niš |
| **GENERAL INFORMATION** |
| Study program  | Electrical Engineering and Computing |
| Study Module (if applicable) | Electronics |
| Course title | Reconfigurable Systems |
| Level of study | ☐ Bachelor ☐ Master’s ☐ Doctoral |
| Type of course | ☐ Obligatory ☐ Elective |
| Semester  |  ☐ Autumn ☐ Spring |
| Year of study  | II |
| Number of ECTS allocated | 10 |
| Name of lecturer/lecturers | Đorđević Lj. Goran,  |
| Teaching mode |  ☐Lectures ☐Group tutorials ☐ Individual tutorials ☐Laboratory work ☐ Project work ☐ Seminar ☐Distance learning ☐ Blended learning ☐ Other |
| **PURPOSE AND OVERVIEW (max. 5 sentences)** |
| The course objective is to teach students with architectures and design principles of reconfigurable systems and their applications in computing and embedded systems, including: a) fundamentals of reconfigurable system design at low-, middle- and high-level of abstraction; b) practical aspects of reconfigurable computing and implementation constraints; c) typical applications of reconfigurable systems.After successful completion of this course, students are expected to be able to design and implement fully and partially reconfigurable systems of small- to medium complexity on FPGA platforms. |
| **SYLLABUS (brief outline and summary of topics, max. 10 sentences)** |
| Introduction to reconfigurable systems. FPGA Architectures. FPGA design cycle. Technology-independent optimization. Technology mapping. Placement. Routing. Coarse-grained reconfigurable systems and multi-FPGA Systems. Hybrid architectures: soft-core microprocessors, hardware/software partitioning. FPGA arithmetic. Applications of reconfigurable systems: bioinformatics, image processing, cryptography, molecular dynamics, computational fluid dynamics, fault tolerant systems. FPGAs vs. multicore architectures. Advanced topics: dynamic reconfiguration, partial reconfiguration. |
| **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** |  | **Written examination** |  |
| **Practical teaching** | **50** | **Oral examination** | **50** |
| **Teaching colloquia** |  | **OVERALL SUM** | **100** |
| **\*Final examination mark is formed in accordance with the Institutional documents** |