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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** | | | | | | |