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|  **UNIVERSITY OF NIŠ** |
| **Course Unit Descriptor** | **Faculty**  | Faculty of Electronic Engineering |
| **GENERAL INFORMATION** |
| Study program  | **Control Systems** |
| Study Module (if applicable) | Automatic Control, Computer Control Systems and Measurement Techniques |
| Course title | Embedded Systems |
| Level of study | [ ] Bachelor [x]  Master’s [ ]  Doctoral |
| Type of course | [ ]  Obligatory [x]  Elective |
| Semester  |  [x]  Autumn [ ] Spring |
| Year of study  | First |
| Number of ECTS allocated | 4 |
| Name of lecturer/lecturers | Tokić I. Teufik |
| Teaching mode |  [x] Lectures [ ] Group tutorials [ ]  Individual tutorials [x] Laboratory work [x]  Project work [ ]  Seminar [ ] Distance learning [ ]  Blended learning [ ]  Other |
| **PURPOSE AND OVERVIEW (max. 5 sentences)** |
| *The main objective is adoption of hardware design techniques of embedded systems. Student is expected to design hardware and software of embedded systems, taking into account their specificities.* |
| **SYLLABUS (brief outline and summary of topics, max. 10 sentences)** |
| **Embedded processing. Characteristics of embedded computers. Specifications, requirements, models of computation, language characteristics. Embedded system hardware, input, communication, processing units, memory, output. Embedded operating systems, execution planning, prediction of execution time, Midleware. Implementation of Embedded systems, hardware / software codesign, Concurrent management at tasks level, compiler for embedded systems. Reducing power consumption, dynamic power management. SoC design. SoC architecture, accelerator processor. Complex SoC architecture. Application-specific and configurable processors. multiprocessor SoC's. Validation, simulation, emulation and prototyping, testing, fault simulation, fault injection, formal verification.** |
| **LANGUAGE OF INSTRUCTION** |
| [x] 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** | **20** |
| **Practical teaching** | **40** | **Oral examination** | **40** |
| **Teaching colloquia** |  | **OVERALL SUM** | **100** |
| **\*Final examination mark is formed in accordance with the Institutional documents** |