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|  **UNIVERSITY OF NIŠ** |
| **Course Unit Descriptor** | **Faculty**  | Faculty of Electronic Engineering |
| **GENERAL INFORMATION** |
| Study program  | **Computing and Informatics** |
| Study Module (if applicable) | Computer engineering |
| Course title | Algorithms and Architectures of Dedicated Computer Systems |
| Level of study | [ ] Bachelor [x]  Master’s [ ]  Doctoral |
| Type of course | [ ]  Obligatory [x]  Elective |
| Semester  |  [x]  Autumn [ ] Spring |
| Year of study  | 1 |
| Number of ECTS allocated | 4 |
| Name of lecturer/lecturers | Milentijević Z. Ivan, Vojinović M. Oliver |
| Teaching mode |  [x] Lectures [ ] Group tutorials [ ]  Individual tutorials [x] Laboratory work [ ]  Project work [ ]  Seminar [ ] Distance learning [ ]  Blended learning [ ]  Other |
| **PURPOSE AND OVERVIEW (max. 5 sentences)** |
| *The main objective is adoption of hardware design techniques and hardware implementation of DSP algorithms. Student is expected to design and implement DSP algorithms on streaming procesors.* |
| **SYLLABUS (brief outline and summary of topics, max. 10 sentences)** |
| **Typical DSP algorithms. Presentation of algorithms. Mapping DSP algorithms into special-purpose hardware. Timing. Folding and unfolding of architectures. Systolic architectures. Compromise techniques and their application in hardware accelerators for digital signals. Power management. Consumption analysis and reduction estimations. Streaming processors. Multimedia data processing. The design and description of stream processors in Maxeler environment using Java programming language. Dataflow computational model. Dataflow description in Java. Big-data problem.** |
| **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** | **10** | **Written examination** |  |
| **Practical teaching** | **50** | **Oral examination** | **40** |
| **Teaching colloquia** |  | **OVERALL SUM** | **100** |
| **\*Final examination mark is formed in accordance with the Institutional documents** |