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|  **UNIVERSITY OF NIŠ** |
| **Course Unit Descriptor** | **Faculty** | Faculty of Electronic Engineering |
| **GENERAL INFORMATION** |
| Study program  | Electronics and Microsystems |
| Study Module (if applicable) | Electronics |
| Course title | Digital Signal Controllers |
| Level of study | ☐Bachelor X Master’s ☐ Doctoral |
| Type of course | ☐ Obligatory X Elective |
| Semester  | ☐ Autumn XSpring |
| Year of study  | I |
| Number of ECTS allocated | 5 |
| Name of lecturer/lecturers | Petrović D. Branislav |
| Teaching mode | X Lectures ☐Group tutorials ☐ Individual tutorialsX Laboratory work X Project work ☐ Seminar☐Distance learning ☐ Blended learning ☐ Other |
| **PURPOSE AND OVERVIEW (max. 5 sentences)** |
| The goal of this course is to enable students to master the theoretical and practical knowledgerequired for the implementation of the basic algorithms used in the domain of digital signal processingusing Digital Signal Controllers |
| **SYLLABUS (brief outline and summary of topics, max. 10 sentences)** |
| The definition digital signal controllers - DSC. Characteristics and differences compared to conventional microprocessor. The basic architecture of DSC Texas Instruments C2000 family. Core (Data ALU, address generator, the control program, the logic for the patch program generator PLL, JTAG, peripherals). Memory mapping, development tools. The main types of operations, macro commands and routines. Connection to the C programming language. Presentation format numbers.Arithmetic operations, addressing modes. Structure for the implementation of digital filters. Implementation of FFT algorithm. DSC with moving Zare, IEEE-754th Application of DSC in digital audio signal processing. |
| **LANGUAGE OF INSTRUCTION** |
| X Serbian (complete course) X 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** | **20** |
| **Practical teaching** | **30** | **Oral examination** | **20** |
| **Teaching colloquia** | **20** | **OVERALL SUM** | **100** |
| **\*Final examination mark is formed in accordance with the Institutional documents** |