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| **UNIVERSITY OF NIŠ** | | | | | | |
| **Course Unit Descriptor** | | **Faculty** | | | Faculty of Electronic Engineering | |
| **GENERAL INFORMATION** | | | | | | |
| Study program | | | | Electrical Engineering and Computing | | |
| Study Module (if applicable) | | | | Electronics - Embedded Systems, Multimedia Technologies, Circuits and Systems | | |
| Course title | | | | Data Converters | | |
| Level of study | | | | X Bachelor ☐ Master’s ☐ Doctoral | | |
| Type of course | | | | Obligatory X Elective | | |
| Semester | | | | Autumn XSpring | | |
| Year of study | | | | III | | |
| Number of ECTS allocated | | | | 6 | | |
| Name of lecturer/lecturers | | | | Petrović D. Branislav | | |
| 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)** | | | | | | |
| Introduce students to the basic techniques of conversion signals from analog to digital domain and vice versa, as well as the acquisition of practical knowledge about current circuits for this purpose.  Conversion methods. Application of the converter. | | | | | | |
| **SYLLABUS (brief outline and summary of topics, max. 10 sentences)** | | | | | | |
| Data Converter History, Coding and Quantizing. Sampling Theory. Data Converter Errors. Data Converter Architectures. Testing Data Converters. Interfacing to Data Converters. Voltage References, takt generators, analog switches and multiplexers, Sample ana hold circuits. Data Converter Applications: Precision Measurement and Sensor Conditioning, Digital Potentiometers, Digital Audio, Digital Video and Display Electronics, Software Radio, Direct Digital Synthesis.  Weighted DACs, Ladder Network DAC, Capacitive Binary-Weighted DAC. Successive Approximation ADCs, Flash Converters, Dual Slope ADCs, VF Converters, First-Order Sigma-Delta ADC. | | | | | | |
| **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** | | | | | | |