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| **UNIVERSITY OF NIŠ** | | | | | | |
| **Course Unit Descriptor** | | **Faculty** | | | Faculty of Electronic Engineering | |
| **GENERAL INFORMATION** | | | | | | |
| Study program | | | | Electrical Power Engineering | | |
| Study Module (if applicable) | | | |  | | |
| Course title | | | | Control of Power Converters and Drives | | |
| Level of study | | | | ☐Bachelor x Master’s ☐ Doctoral | | |
| Type of course | | | | x Obligatory ☐ Elective | | |
| Semester | | | | x Autumn ☐ Spring | | |
| Year of study | | | | 1 | | |
| Number of ECTS allocated | | | | 6 | | |
| Name of lecturer/lecturers | | | | Mitrović N. Nebojša, Petronijević P. Milutin | | |
| Teaching mode | | | | xLectures xGroup tutorials ☐ Individual tutorials  xLaboratory work ☐ Project work ☐ Seminar  ☐Distance learning ☐ Blended learning ☐ Other | | |
| **PURPOSE AND OVERVIEW (max. 5 sentences)** | | | | | | |
| Acquiring knowledge about modern control methods in power converters, speed controlled drives, parameter calculation and settings and application of results on industry related equipment. Knowledge synthesis and its application in the AC and DC drives. | | | | | | |
| **SYLLABUS (brief outline and summary of topics, max. 10 sentences)** | | | | | | |
| *Core learning objectives for the course can be summarized as follows:* Basic electric drive components: control circuits, sensors.  Principle of operation and selection of control circuits and methods.  Electric drives control - basics, algorithms and hardware components.  DC drives control.  Basics, types and classification of Pulse Width Modulation (PWM).  Space Vector Modulation. Converters with PWM control: chopers, inverters.  Application of PWM inverters in AC drives.  Active Front End Converter, Scalar (V/Hz) and Vector Control of AC drives.  Sensorless control. Estimation of speed, torque and flux. | | | | | | |
| **LANGUAGE OF INSTRUCTION** | | | | | | |
| xSerbian (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** | **5** | | **Written examination** | | | **20** |
| **Practical teaching** | **15** | | **Oral examination** | | | **20** |
| **Teaching colloquia** | **40** | | **OVERALL SUM** | | | **100** |
| **\*Final examination mark is formed in accordance with the Institutional documents** | | | | | | |