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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) | | | | **Computer Control Systems and Measurement Techniques** | | |
| Course title | | | | **Virtual Measuring Instrumentation** | | |
| Level of study | | | | ☐Bachelor **X** Master’s ☐ Doctoral | | |
| Type of course | | | | ☐ Obligatory **X** Elective | | |
| Semester | | | | ☐ Autumn **X** Spring | | |
| Year of study | | | | 1 | | |
| Number of ECTS allocated | | | | **4** | | |
| Name of lecturer/lecturers | | | | **Dragan B. Zivanovic** | | |
| Teaching mode | | | | **X** Lectures **X** Group tutorials **X** Individual tutorials  **X** Laboratory work **X** Project work ☐ Seminar  **X** Distance learning ☐ Blended learning ☐ Other | | |
| **PURPOSE AND OVERVIEW (max. 5 sentences)** | | | | | | |
| **Aim of the subject is introduction with concept, hardware and techniques for programming of virtual measuring instruments, as with specific examples of measuring systems. Providing capability of students to select components of measuring system, on the basis of specific project tasks, also to develop software based instrument in „LabVIEW“ graphical programming language.** | | | | | | |
| **SYLLABUS (brief outline and summary of topics, max. 10 sentences)** | | | | | | |
| **Hardware of virtual instruments. Types of acquisition modules, characteristics. Programming language LabVIEW, concept and basic techniques. Front panel, block diagram, functions palettes. Data stream and parallel execution of code segments. Signal analysis. Reduction of measurement errors in virtual instruments. Linearization, compensation of influential quantities, calibration. Advanced data presentation. Serial communication with separated instruments. Connection of sensors and actuators. Examples for specific implementations of virtual measuring systems.** | | | | | | |
| **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 60** | | **Final exam** | | | **Points 40** |
| **Activity during lectures** | **10** | | **Written examination** | | | **20** |
| **Practical teaching** | **20** | | **Oral examination** | | | **20** |
| **Teaching colloquia** | **30** | | **OVERALL SUM** | | | **100** |
| **\*Final examination mark is formed in accordance with the Institutional documents** | | | | | | |