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|  **UNIVERSITY OF NIŠ** |
| **Course Unit Descriptor** | **Faculty** | Faculty of Mechanical Engineering |
| **GENERAL INFORMATION** |
| Study program  | **Mechanical Engineering** |
| Study Module (if applicable) |  |
| Course title | MEASUREMENT TECHNIQUES IN MECHATRONICS |
| Level of study | ☐Bachelor ☐ Master’s ☒Doctoral |
| Type of course | ☐ Obligatory ☒Elective |
| Semester  | ☒ Autumn ☐Spring |
| Year of study  | II |
| Number of ECTS allocated | 10 |
| Name of lecturer/lecturers | Petrović B. Tomislav |
| Teaching mode | ☒Lectures ☒Group tutorials ☐ Individual tutorials☒Laboratory work ☒ Project work ☐ Seminar☐Distance learning ☐ Blended learning ☐ Other |
| **PURPOSE AND OVERVIEW (max. 5 sentences)** |
| *Introducing students to the measuring systems, measuring instruments, and methods of measurement parameters in Mechatronics. Acquiring knowledge of the theory of experimental research parameters in Mechatronic systems. Acquiring skills in the methodology for measuring and testing the characteristics of power and process systems. Gaining the ability to independently design measurement systems in Mechatronics with the purpose of performing measurements for a doctoral thesis.* |
| **SYLLABUS (brief outline and summary of topics, max. 10 sentences)** |
| Measurement techniques in Mechatronic systems;Structure measuring procedures;Accuracy and measurement uncertainty, the impact of errors on the measurement results;Statistical and systematic errors;Types of transducers ( resistive, capacitive, inductive ... );Processing of measurement signals ( analog and digital processing );Measurement of mechanical parameters;Measurement of thermal parameters;Measurement of hydraulic and pneumatic parameters |
| **LANGUAGE OF INSTRUCTION** |
| ☒Serbian (complete course) ☐ English (complete course) ☐ Other \_\_\_\_\_\_\_\_\_\_\_\_\_ (complete course)☒Serbian with English mentoring ☒ Serbian with German mentoring \_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| **ASSESSMENT METHODS AND CRITERIA** |
| **Pre exam duties** | **Points** | **Final exam** | **points** |
| **Activity during lectures** | **0** | **Written examination** | **0** |
| **Practical teaching** | **25** | **Oral examination** | **50** |
| **Teaching colloquia** | **25** | **OVERALL SUM** | **100** |
| **\*Final examination mark is formed in accordance with the Institutional documents** |