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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 | Computer Systems for Acquisition and Control | | | | | | | |
| 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 | Žarko Ćojbašić | | | | | | | |
| Teaching Mode | ☒ Lectures | | | ☐ Group tutorials | | | | ☐ Individual tutorials |
| ☒ Laboratory work | | | ☒ Project work | | | | ☒ Seminar |
| ☐ Distance learning | | | ☐ Blended learning | | | | ☐ Other |
| **Purpose and Overview (max. 5 sentences)** | | | | | | | | |
| *Introduction of students to various techniques of analysis and design of contemporary computer systems for acquisition and control, for diverse classes of mechatronic objects. Provide students with ability to define and design computer systems for acquisition and control for diverse classes of mechatronic objects.* | | | | | | | | |
| **Syllabus (brief outline and summary of topics, max. 10 sentences)** | | | | | | | | |
| **Theory classes \*** Application of computers in process industry, in CNC machines and in communal systems control. \* Process visualization–SCADA. Activity detection and recognition. \* Acquisition and processing of measured data. Application of PLCs in process control. \* RTEthernetTCP/IPand Internet based automation concept. Operator and touch panels. \* Problems of control of complex technological processes. Centralized control. Distributed control. \* Application of microprocessors in design and implementation of control systems. Hierarchical control. Choice of computer for real time control. Input-output devices. \* Software support for real time systems control. Computer coupling with technological processes.  **Guided independent research \*** Preparation of students for independent research into the written literature, scientific journals, and web portals within the field of application of computer systems for acquisition and control in mechatronics, laboratory research. | | | | | | | | |
| **Language of Instruction** | | | | | | | | |
| ☒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** | **Final Exam** | | | **Points** | | |
| **Activity During Lectures** | | **0** | **Written Examination**  **(2 term papers)** | | | **50** | | |
| **Practical Teaching** | | **0** | **Oral Examination** | | | **50** | | |
| **Teaching Colloquia** | | **0** | **Overall Sum** | | | **100** | | |
| **\*Final examination mark is formed in accordance with the Institutional documents** | | | | | | | | |