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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 | Industrial and flexible automation in production  |
| 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 | Vladislav A. Blagojević |
| Teaching Mode | ☒ Lectures | ☐ Group tutorials | ☐ Individual tutorials |
| ☒ Laboratory work | ☒ Project work | ☒ Seminar |
| ☐ Distance learning | ☐ Blended learning | ☐ Other |
| **Purpose and Overview (max. 5 sentences)** |
| *Introduce students to the basics of industrial automation and flexible manufacturing systems, principles of automation machines and systems, types of control and applications thereof. The course is targeting both the theoretical and practical aspects of automation.* |
| **Syllabus (brief outline and summary of topics, max. 10 sentences)** |
| 1) General introduction to digital systems, 2) The concept of digital systems employed for the automation of production processes, 3) System control technology and structure, 4) Designing and maintenance of hydraulic, pneumatic and electric circuits , 5) Designing of electro-pneumatic and electro-hydraulic schemes, 6) Computer in production systems, 7) PLCs, 8) PLC programming , 9 ) CNC, 10) Adaptive systems, 11) Robots. |
| **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** | **25** | **Written Examination** | **25** |
| **Practical Teaching** | **0** | **Oral Examination** | **25** |
| **Teaching Colloquia** | **25** | **Overall Sum** | **100** |
| **\*Final examination mark is formed in accordance with the Institutional documents** |