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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 | Hydraulic and pneumatic elements on mechatronics |
| Level of Study | ☒Bachelor | ☐ Master’s | ☐ Doctoral |
| Type of Course | ☐ Obligatory | ☒ Elective |
| Semester | ☒ Autumn | ☐ Spring |
| Year of Study | III |
| Number of ECTS Allocated | 6 |
| Name of Lecturer/Lecturers | Dragiša Nikodijević  |
| Teaching Mode | ☒ Lectures | ☐ Group tutorials | ☐ Individual tutorials |
| ☒ Laboratory work | ☐ Project work | ☐ Seminar |
| ☐ Distance learning | ☐ Blended learning | ☐ Other |
| **Purpose and Overview (max. 5 sentences)** |
| *The aim of the course is to introduce all students with the hydraulic and pneumatic elements in mechatronics. The course is targeting both the theoretical and practical aspects of the design of mechatronics systems.* |
| **Syllabus (brief outline and summary of topics, max. 10 sentences)** |
| 1) Elements for energy transformation: displacement pumps (piston, vane, gear, screw). 2) Hydraulic motor, compressors, hydraulic and pneumatic cylinders, hydraulic accumulators. 2) Control and regulation: control valves, the pressure valves, flow valves. 3) Additional elements: fuel, rigid and flexible piping, assembling elements. 4) Sealing. |
| **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** |
| **Lecture (participation) + Homework** | **5 + 5** | **Written Examination** | **0\* (50)** |
| **Laboratory** | **10** | **Oral Examination** | **Max. 30**  |
| **Two midterm exams** | **50** | **Overall Sum** | **100** |
| **\*** **Refers to students who have already gained points by completing pre-exam requirements** |