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|  **UNIVERSITY OF NIŠ** |
| **Course Unit Descriptor** | **Faculty**  | Electronic Engineering |
| **GENERAL INFORMATION** |
| Study program  | Control Systems |
| Study Module (if applicable) | Automatic Control |
| Course title | Hydraulic and Pneumatic Control Systems |
| Level of study | ☐Bachelor ⊠ Master’s ☐ Doctoral |
| Type of course | ☐ Obligatory ⊠ Elective |
| Semester  |  ☐ Autumn ⊠ Spring |
| Year of study  | first |
| Number of ECTS allocated | 4 |
| Name of lecturer/lecturers | Nikolić D. Vlastimir |
| Teaching mode |  ⊠ Lectures ☐Group tutorials ☐ Individual tutorials ⊠ Laboratory work ☐ Project work ☐ Seminar ☐Distance learning ☐ Blended learning ⊠ Other |
| **PURPOSE AND OVERVIEW (max. 5 sentences)** |
| Theoretical and practical knowledge in basics of hydraulics and pneumatics, modeling of hydraulic and pneumatic systems, as well as analysis of hydraulic and pneumatic control systems.  |
| **SYLLABUS (brief outline and summary of topics, max. 10 sentences)** |
| Hydraulic drive, actuators, pumps and motors. Hydraulic control elements. Elements of the data transfer. Electro-hydraulic servo valves and electrohydraulic servomechanisms. Control concepts for hydraulic control systems. Methods for the analysis of electrohydraulic control systems. Nonlinearities in the hydraulic control system. Analysis of specific cases. Features of the air. Providing pressure, transmission and control. Pneumatic valves, compressors, pneumatic cylinders and motors, pneumatic drive. Pneumatic control techniques. |
| **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** | **10** | **Projects** | **20** |
| **Exercises** | **10** | **Oral examination** | **30** |
| **Teaching colloquia** | **30** | **OVERALL SUM** | **100** |
| **\*Final examination mark is formed in accordance with the Institutional documents** |