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|  **UNIVERSITY OF NIŠ** |
| **Course Unit Descriptor** | **Faculty**  | Faculty of Electronic Engineering |
| **GENERAL INFORMATION** |
| Study program  | Control Systems |
| Study Module (if applicable) | Automatic Control, Computer Control Systems and Measurement Techniques |
| Course title | Large-scale System Control |
| 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 | Antić s. Dragan, Mitić B. Darko |
| Teaching mode |  ⊠ Lectures ⊠ Group tutorials ☐ Individual tutorials ☐Laboratory work ☐ Project work ☐ Seminar ☐Distance learning ☐ Blended learning ☐ Other |
| **PURPOSE AND OVERVIEW (max. 5 sentences)** |
| Gaining knowledge of the control of large-scale systems, multivariable systems, centralized and decentralized systems. |
| **SYLLABUS (brief outline and summary of topics, max. 10 sentences)** |
| Automatic control systems with centralized information and control structure. Multivariable control systems. The generalization of the classical methods for the synthesis of a multivariable automatic control systems. Robustness of multivariable systems. Linear quadratic and linear Gaussian quadratic controller. Robustness of control systems with linear quadratic regulator. Automatic control systems with decentralized information and control structure. Control of large-scale dynamical systems with decentralized information and control structure. Robustness of large-scale dynamical systems with decentralized information and control structure. Generalization and application of the results of the robustness of decentralized systems. Application. Modern concepts in the design of control systems of technological processes. The power system control. |
| **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** | **Written examination** | **20** |
| **Practical teaching** | **0** | **Oral examination** | **20** |
| **Exercises** | **10** | **Project** | **20** |
| **Teaching colloquia** | **20** | **OVERALL SUM** | **100** |
| **\*Final examination mark is formed in accordance with the Institutional documents** |