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|  **UNIVERSITY OF NIŠ** |
| **Course Unit Descriptor** | **Faculty**  | Faculty of Electronic Engineering |
| **GENERAL INFORMATION** |
| Study program  | Electrical Engineering and Computing |
| Study Module (if applicable) | Applied Mathematics |
| Course title | Simulation of Industrial Systems |
| Level of study | ☐Bachelor ☐ Master’s ⊠ Doctoral |
| Type of course | ☐ Obligatory ⊠ Elective |
| Semester  | ⊠ Autumn ⊠Spring |
| Year of study  | First |
| Number of ECTS allocated | 10 |
| Name of lecturer/lecturers | Antić S. Dragan, Milojković T. Marko |
| Teaching mode |  ⊠Lectures ☐Group tutorials ☐ Individual tutorials ☐Laboratory work ☐ Project work ☐ Seminar ☐Distance learning ☐ Blended learning ⊠ Other |
| **PURPOSE AND OVERVIEW (max. 5 sentences)** |
| Modern trends of industrial development impose the growing need for simulation, especially where operations and tests on systems themselves are impractical, unprofitable or dangerous. High quality of performed simulation requires both good mathematical basis and knowledge of industrial systems and related software. |
| **SYLLABUS (brief outline and summary of topics, max. 10 sentences)** |
| The concept of simulation and methods. Design of simulation models. Simulation tools. The mathematical foundation of digital simulation. Numerical methods implemented in simulation tools. Simulation of systems with distributed parameters. Errors in the simulation and methods for overcoming them. The application of simulation in the identification, design and optimization of automatic control systems. Real-time simulation, hardware and software aspects, algorithms for numerical integration. Simulation of industrial systems. Simulation of complex systems. Modern trends in the simulation of industrial systems. |
| **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** | **0** |
| **Practical teaching** | **0** | **Oral examination** | **50** |
| **Project** | **50** | **OVERALL SUM** | **100** |
| **\*Final examination mark is formed in accordance with the Institutional documents** |