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|  **UNIVERSITY OF NIŠ** |
| **Course Unit Descriptor** | **Faculty**  | Faculty of Occupational Safety in Niš |
| **GENERAL INFORMATION** |
| Study program  | Environmental Engineering |
| Study Module (if applicable) | - |
| Course title | Systems engineering |
| Level of study | ☐Bachelor ☒ Master’s ☐ Doctoral |
| Type of course | ☐ Obligatory ☒ Elective |
| Semester  | ☐ Autumn ☒Spring |
| Year of study  | I |
| Number of ECTS allocated | 4 |
| Name of lecturer/lecturers | Suzana Savić; Goran Janaćković |
| Teaching mode |  ☒Lectures ☒Group tutorials ☒ Individual tutorials ☐Laboratory work ☐ Project work ☐ Seminar ☐Distance learning ☐ Blended learning ☐ Other |
| **PURPOSE AND OVERVIEW (max. 5 sentences)** |
| *Acquiring knowledge about fundamental properties, processes, and disciplines of systems engineering and about models and methods of decision making and effectiveness assessment.* |
| **SYLLABUS (brief outline and summary of topics, max. 10 sentences)** |
| Introduction to systems engineering–modern environment and the necessity for systems engineering; systemic analysis. Systems engineering and system life cycle. Systems engineering process–identification of user demands, operative demands, and demands from the environment; identification and ranking of performance measures; functional analysis; optimization. Basic systems engineering disciplines–software engineering, reliabilityengineering, maintenance engineering, human factor engineering, safety engineering, logistics engineering, quality engineering, engineering economy (functions, fundamental processes, interaction of processes, methods of analysis). Systems engineering management–planning and organizing the process of systems engineering. Models and methods of multi‐criteria decision analysis: ELECTRE, PROMETHEE, AHP. Models and methods for evaluating safety system effectiveness.  |
| **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** | **40** |
| **Practical teaching** | **20** | **Oral examination** | **-** |
| **Teaching colloquia** | **30** | **OVERALL SUM** | **100** |
| **\*Final examination mark is formed in accordance with the Institutional documents** |