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|  **UNIVERSITY OF NIŠ** |
| **Course Unit Descriptor** | **Faculty**  | Faculty of Occupational Safety in Niš |
| **GENERAL INFORMATION** |
| Study program  | Occupational Safety |
| Study Module (if applicable) | / |
| Course title | System Reliability and Safety |
| Level of study | ☒Bachelor ☐ Master’s ☐ Doctoral |
| Type of course | ☐ Obligatory ☒ Elective |
| Semester  | ☐ Autumn ☒Spring |
| Year of study  | Third year |
| Number of ECTS allocated | 6 |
| Name of lecturer/lecturers | Suzana Savić, Evica Stojiljković |
| 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 indicators and qualitative and quantitative methods of system reliability and safety analysis and about technological solutions for increasing safety system reliability. Students will be able to quantify and interpret reliability and safety indicators, to apply methods for identification, assessment, and evaluation of hazards and to evaluate technical safety measures.* |
| **SYLLABUS (brief outline and summary of topics, max. 10 sentences)** |
| System reliability – the term, indicators, and distribution functions of repairable and un repairable systems. Time distribution functions up to/between failures. Continual and discrete distributions. System reliability models. System reliability analysis methods. Operator reliability. Human-machine system reliability. Relationship between system reliability and safety. System safety – the term, structure, functions, aims, indicators. Equivalence of reliability and safety indicators. System safety requirements and functional safety. Methods to identify safety functions. Risk and safety levels. Methods of safety level quantification. Increase of system reliability and safety. Cost optimization. Optimal back‐up. Technological solutions for the increase in system reliability and safety. |
| **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** | **20 (term paper)** | **Oral examination** | **20** |
| **Teaching colloquia** | **30** | **OVERALL SUM** | **100** |
| **\*Final examination mark is formed in accordance with the Institutional documents** |