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|  **UNIVERSITY OF NIŠ** |
| **Course Unit Descriptor** | **Faculty**  | Faculty of Occupational Safety in Niš |
| **GENERAL INFORMATION** |
| Study program  | Occupational Safety Engineering  |
| Study Module (if applicable) | - |
| Course title | Noise and Vibration Control |
| Level of study | ☐ Bachelor ⌧ Master’s ☐ Doctoral |
| Type of course | ⌧ Obligatory ☐ Elective |
| Semester  | ⌧ Autumn ☐ Spring |
| Year of study  | I |
| Number of ECTS allocated | 5 |
| Name of lecturer/lecturers | Dragan Cvetković, Momir Praščević |
| Teaching mode |  ⌧ Lectures ☐Group tutorials ☐ Individual tutorials ⌧ Laboratory work ☐ Project work ☐ Seminar ☐Distance learning ☐ Blended learning ☐ Other |
| **PURPOSE AND OVERVIEW (max. 5 sentences)** |
| *Acquiring theoretical knowledge and practical skills in noise and vibration control. Enabling students to solve concrete occupational environment problems caused by noise and vibration through source identification and characterization, as well as to design systems of noise and vibration protection. Learning outcomes: advanced techniques for noise and vibration measurement, diagnostic application of noise and vibration, calculation of sound absorption and vibroabsorption, calculation of sound isolation and vibroisolation.* |
| **SYLLABUS (brief outline and summary of topics, max. 10 sentences)** |
| Basic principles of vibration isolation. Vibroabsorption. Vibroisolation. Calculation of the system for vibroabsorption and vibroisolation. Diagnostics of machine system condition through vibration monitoring. Diagnostic tools: FFT, CPB, Kepstrum, Envelop, Order analysis. State of occupational noise level. Noise sources and their properties. Models for indoor noise prediction. Model structure. Noise control. Basic principles. Sound absorption and soundproofing. Elements and materials for noise control. Point source noise control. Noise source shielding. Transfer route control. Screens. Reception point control. Use of personal protective tools. Soundproofing and absorption, sound protection of buildings. Resonant area of a homogeneous single‐layer barrier. Mass law. Coincidence effect. Soundproofing of a double‐layer infinite barrier and real double‐layer barrier. Effect of lateral conduction on barrier soundproofing abilities. Sound permeability of floor slabs. Reduction of sound permeability. Calculation of floating floor sound permeability. Noise reduction through increase in room absorption. Design of sound protection for construction elements; protection form installation noise and noise from machinery. |
| **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** | **Oral examination** | **20** |
| **Teaching colloquia** | **30** | **OVERALL SUM** | **100** |
| **\*Final examination mark is formed in accordance with the Institutional documents** |