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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 | Noise and Vibration |
| Level of study | ⌧ Bachelor ☐ Master’s ☐ Doctoral |
| Type of course | ⌧ Obligatory ☐ Elective |
| Semester  | ☐ Autumn ⌧ Spring |
| Year of study  | III |
| Number of ECTS allocated | 6 |
| 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 in mechanical and acoustic oscillations. Enabling students to identify the phenomena of noise and vibration in the occupational environment, to identify and characterize noise and vibration sources, to assess noise and vibration affecting workers, and to apply acquired knowledge to occupational safety engineering. Learning outcomes: understanding physical laws of generation and propagation of mechanical and sound waves, calculating indoor and outdoor noise level, calculate energy physiological quantities, measuring, analyzing, and assessing vibration affecting humans; implementing current standards and regulations.* |
| **SYLLABUS (brief outline and summary of topics, max. 10 sentences)** |
| Vibration: Basic terms and quantities for describing vibration. Vibration kinematics and dynamics. Fundamental principles of vibration generation and transfer. Fundamental principles of anti‐vibration foundation. Effects of vibration on humans. Vibration of the hand‐arm system. Vibration transferred onto humans. Wave equation. Wave types. Sound field types. Basic noise types. Classification according to time and frequency character of noise. Basic terms and quantities for describing noise. Outdoor generation and propagation of noise. Point sources of noise. Sound pressure, intensity, and strength. The term, addition, and subtraction of noise level. Subjective assessment of noise intensity. Energy physiological quantities. Indoor generation and propagation of noise. Noise level in diffuse sound field. Reverberation time. Noise level in spaces with high absorption coefficient. Sound isolation. Mechanisms of hearing organs and sound perception. Effects of noise on humans. Noise and vibration measurement. Measuring chain and basic measuring parameters. Selection of measuring points. Indicators of noise and vibration affecting humans. Allowed values. Noise and vibration assessment. Standards and regulations.Calculus problems in noise and vibration. Measurement in the field provides students with practical skills for basic measurement, calculations, and analyses of obtained experimental results. |
| **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** | **10** | **Oral examination** | **20** |
| **Teaching colloquia** | **40** | **OVERALL SUM** | **100** |
| **\*Final examination mark is formed in accordance with the Institutional documents** |