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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 | | | | Machine and device 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 | | | | Zarko Jankovic | | |
| Teaching mode | | | | ☒ Lectures ☐Group tutorials ☐ Individual tutorials  ☐Laboratory work ☒Project work ☐ Seminar  ☐Distance learning ☐ Blended learning ☒ Other**(**term paper) | | |
| **PURPOSE AND OVERVIEW (max. 5 sentences)** | | | | | | |
| *Acquiring knowledge about processes, development, construction, and use of various machine and device safety systems. Students will acquire theoretical and practical knowledge about using technical solutions for machine safety, requirements for safety system installation, design principles, and risk assessment for machine operators.* | | | | | | |
| **SYLLABUS (brief outline and summary of topics, max. 10 sentences)** | | | | | | |
| Development of machine and device safety system. Characteristics of machine hazards (analysis of machine and device  hazardous zones). Safety modes and requirements for safety system installation in machines and devices (safety devices, blocking devices, and safety armours). Constructive solutions for machine safety systems where insertion and removal of  processed items is manual. Important requirements for machine design and construction (safety of operating systems, protection from mechanical hazards). Risk assessment for machine operators and risk reduction by adequate construction. Machinery directive and machine safety standards. Safety systems on cutting machines: lathes, planers, drills, mills, and sanders. Machine risk level analysis: example of a sander. Safety systems on wood processing machines: band saws, circular saws, planers, mills, and sanders. Safety systems on machines for primary and secondary processing of wood. Safety systems on deformationprocessing machines: mechanical and hydraulic presses. Safety device systems on various machines. Safety requirements for machine construction (closed‐tool construction, movement blocking system for central executive mechanism etc.). Safety system on machines with two‐hand controls: installation requirements, activation principles, place of installation, safety conditions. Safety light curtain systems: types, installation, operating principle, construction. Safety system made by adequate construction of operating devices, commands, gadgets, blockings, control instruments, and signalling devices. Declaration of Conformity. Technical  documentation for machines, CE marking. Conformity evaluation procedure.  Introduction to principles of constructive machine safety solutions and types of controlling and testing machine and device safety functions. Inspection and testing of work equipment and provision of professional opinion regarding safety. Instructions for proper use, maintenance, and safe operation. | | | | | | |
| **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** | | | **10** |
| **Practical teaching** | **20 +15** | | **Oral examination** | | | **30** |
| **Teaching colloquia** | **15** | | **OVERALL SUM** | | | **100** |
| **\*Final examination mark is formed in accordance with the Institutional documents** | | | | | | |