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|  **UNIVERSITY OF NIŠ** |
| **Course Unit Descriptor** | **Faculty**  | Faculty of Occupational Safety in Niš |
| **GENERAL INFORMATION** |
| Study program  | Fire Protection Engineering |
| Study Module (if applicable) | / |
| Course title | Fire Resistance Theory |
| 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 | Stojiljković Dragan |
| Teaching mode |  ☒ Lectures ☐Group tutorials ☐ Individual tutorials ☐Laboratory work ☐ Project work ☐ Seminar ☐Distance learning ☐ Blended learning ☐ Other |
| **PURPOSE AND OVERVIEW (max. 5 sentences)** |
| *Adopting theoretical and practical knowledge necessary for the calculation of fire resistance of construction elements.* |
| **SYLLABUS (brief outline and summary of topics, max. 10 sentences)** |
| Basic elements of statics and material resistance. Basic types of trusses. Geometric properties of flat sections. Basic types of strain. Statically determinate and indeterminate trusses. Criteria for determining fire resistance. Minimal necessary fire resistance. Resistance of reinforced concrete elements. Thermal analysis – thermal balance. Static analysis of statically determinate reinforced concrete elements. Planar and linear trusses exposed to fire. Statically indeterminate reinforced concrete elements loaded in torsion. Statically indeterminate reinforced concrete elements loaded by pressure. Prestressed reinforced concrete elements and determination of their fire resistance. Steel constructions. Fire resistance of steel elements. Thermal analysis. Static analysis. Protection of steel elements and constructions. Resistance of composite elements and constructions. Resistance of aluminium alloy constructions. Resistance of wooden and other elements and constructions. |
| **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** | **5** | **Written examination** | **20** |
| **Practical teaching** | **5** | **Oral examination** | **20** |
| **Teaching colloquia** | **2 x 25** | **OVERALL SUM** | **100** |
| **\*Final examination mark is formed in accordance with the Institutional documents** |