**DESCRIPTION OF A STUDY COURSE – SYLLABUS**

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| **Title of a course** | **Engineering fundamentals** | | | | |
| **Study programme** | **Professional undergraduate study Occupational Safety** | | | | |
| **Status of a course** | Obligatory | | | | |
| **Year of study** | 2. | **Semester** | S | **ECTS credits** | 5 |
| **Teaching plan**  **(L + E + S+ Pr)** | 2+2+0+0 | | | | |
| **Goals of a course** | | | | | |
| To acquaint students with the mechanical properties of materials, basic materials in mechanical engineering and the possibility of applying certain materials in practice. Students will learn about complex machine loads, deformation, fatigue and basic stresses (pressure, train). Introduce students to the basics of making basic technical drawings. | | | | | |
| **Conditions for enrolling course** | | | | | |
| No conditions | | | | | |
| **Expected learning outcomes on a level of a course** | | | | | |
| 1. Tumačiti svojstva temeljnih materijala u strojarstvu 2. Koristiti priručnike s podacima o značajkama materijala i strojnih dijelova 3. Analizirati mehanička svojstva materijala 4. Vrednovati povezivanje dijelova između strojnih elemenata te prijenosa snage 5. Konstruirati interpretirati trodimenzionalne oblike iz njihovih ortogonalnih pogleda 6. Izraditi crtežnu dokumentaciju koristeći AutoCAD 7. Distinguish the properties of basic materials in mechanical engineering. 8. Use manuals with information on materials and machine parts characteristics. 9. Describe mechanical properties of materials. 10. Describe the machine elements of connecting parts and transmitting power. 11. Draw and interpret three-dimensional shapes from their orthogonal projections.   Use a computer program to create simple technical drawings | | | | | |
| **Content of a course** | | | | | |
| Materials in engineering. Metal alloys. System Fe-C. Thermal processing of steel. Firmness, strain, Hook Law, Poisson number, banding, shear, torsion, buckling, firmness. Toleration and fits. Merging elements. Inseparably merge. Separate merge. Power carriers. Drawing geometry, sorts of projection. Projections of simple geometric elements. Zone side. Axonometry. Isometry. Aslope projection. Perspective. Technical drawing, introduction, sort of scathes, paper sizes, sorts of lines. Benchmark of drawings. European projection. Quotation. Technical letter. CAD – creation of drawing supported by computer. | | | | | |
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