**DESCRIPTION OF A STUDY COURSE – SYLLABUS**

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| **Title of a course** | **Production processes and systems** | | | | |
| **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)** | 3+1+0+0 | | | | |
| **Goals of a course** | | | | | |
| The aim of the course is to acquaint students with the various processes of material processing and design and the dangers that arise during such processes. | | | | | |
| **Conditions for enrolling course** | | | | | |
| No conditions | | | | | |
| **Expected learning outcomes on a level of a course** | | | | | |
| 1. Razlikovati i objasniti dijelove proizvodnog sustava 2. Kategorizirati i planirati proizvodni sustav kao skup više podsustava koristeći se različitim vrstama normiranja. 3. Izabrati tehnologije obrade lijevanjem te postupak obrade deformiranjem. 4. Objasniti proces dobivanja gotovih proizvoda metodom sinteriranja. 5. Klasificirati i usporediti postupke obrade metala deformacijom, rezanjem i spajanjem te odvajanjem čestica. 6. Describe the parts of a production system. 7. Evaluate the production system as a set of multiple subsystems. 8. Explain the technology of forming metal objects by casting. 9. Explain the process of obtaining finished products by sintering.   Distinguish metal processing by deformation, cutting and joining, as well as separation of particles. | | | | | |
| **Content of a course** | | | | | |
| Basic concepts and classification of production processes and systems. Machine less material processing. Casting: moulding, mould and core mould designing, melting furnace and cast refining. Sintering. Processing of materials by deformation: cutting, punching, bending, deep drawing and forging. Processing of materials by dividing and joining: electric arc, welding, soldering and pasting. Machine material processing. Theoretical basis: kinematics and elementary geometry of work-piece and tools, tool cutting-edge consumption and durability, cutting tools. Different types of machining: turning lathe, planning, drilling, milling, broaching, grinding and fine machining procedures. Thermal treatment of metals: metallographic presentation of structure, types of annealing, tempering, improving and cementing. Projecting of production processes: preliminary study, technological concept, definition of location and production resources, area calculations, material flow and arrangement of production resources. | | | | | |
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