**DESCRIPTION OF A STUDY COURSE – SYLLABUS**

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| **Title of a course** | **Ergonomics and safety** | | | | |
| **Study programme** | **Professional undergraduate study Occupational Safety** | | | | |
| **Status of a course** | Elective | | | | |
| **Year of study** | 3. | **Semester** | W | **ECTS credits** |  |
| **Teaching plan**  **(L + E + S+ Pr)** |  | | | | |
| **Goals of a course** | | | | | |
| Introduce students to the general principles and application of ergonomics in the design of workplaces, machines and tools, and workplaces with computers. | | | | | |
| **Conditions for enrolling course** | | | | | |
| No conditions | | | | | |
| **Expected learning outcomes on a level of a course** | | | | | |
| 1. Determine human effort and muscle fatigue in the work process. 2. Define the role of anthropometry and biomechanics in ergonomic workplace design. 3. Apply ergonomic design principles for workplaces, machines and tools, and workplaces with computers. 4. Recommend working footwear and clothing in different working conditions from the standpoint of ergonomic work and safety. 5. Identify the interdependence of mental fatigue, stress and boredom in the workplace from a safety standpoint. | | | | | |
| **Content of a course** | | | | | |
| Definition and development of ergonomics. General principles and field of application. Necessity to use the theory of probability and statistics in ergonomics. Anthropometry and its variables. Anthropo-dynamic and anatomic features of man. Biomechanics of human locomotive system. Biomechanics of human hard and soft tissues. Methods of assessing human workload and muscle fatigue. Principles of ergonomically designed workplace, machines and tools. Theory of sitting and design of seats. Designing workplace environment by means of computers. Safety in projecting technical constructions from an ergonomically perspective. Workers' clothes and shoes for different working conditions from an ergonomically point of view. Characteristics of materials, their hygienic and warming peculiarities, textile material as a safety element. Mental activity at workplace, mental fatigue, stress, boredom and monotony in a safety perspective. Working hours, night shifts and nourishment. Noise and vibrations. Indoor climate. | | | | | |
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