

### DESCRIPTION OF A STUDY COURSE – SYLLABUS

<b>Title of a course</b>	<b>Ergonomics and safety</b>				
<b>Head of course</b>	<b>Kristina Dundović, Lecturer</b>				
<b>Study programme</b>	<b>Professional undergraduate study Occupational Safety</b>				
<b>Status of a course</b>	Elective				
<b>Year of study</b>	3.	<b>Semester</b>	V	<b>ECTS credits</b>	4
<b>Teaching plan (L + E + S+ Pr)</b>	2+0+1				
<b>Goals of a course</b>					
Introduce students to the general principles and application of ergonomics in the design of workplaces, machines and tools, and workplaces with computers.					
<b>Conditions for enrolling course</b>					
No conditions					
<b>Learning outcomes on a level of a study programme which includes course</b>					
Outcome 7: Evaluate dangers, damage and effort. Outcome 12: Recommend solutions in the field of occupational ergonomics, security and safety in technological processes.					
<b>Expected learning outcomes on a level of a course</b>					
<ol style="list-style-type: none"> <li>1. Determine human effort and muscle fatigue in the work process.</li> <li>2. Define the role of anthropometry and biomechanics in ergonomic workplace design.</li> <li>3. Apply ergonomic design principles for workplaces, machines and tools, and workplaces with computers.</li> <li>4. Recommend working footwear and clothing in different working conditions from the standpoint of ergonomic work and safety.</li> <li>5. Identify the interdependence of mental fatigue, stress and boredom in the workplace from a safety standpoint</li> </ol>					
<b>Content of a course</b>					
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. Anthro-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.					
<b>Teaching modes</b>	<input checked="" type="checkbox"/> lectures <input type="checkbox"/> auditory exercises <input checked="" type="checkbox"/> seminars and workshops <input type="checkbox"/> distance learning <input type="checkbox"/> field classes		<input checked="" type="checkbox"/> individual assignments <input type="checkbox"/> multimedia and network <input type="checkbox"/> laboratory <input type="checkbox"/> supervisor's work <input type="checkbox"/> other _____		
<b>Comments</b>					
<b>Students' obligations</b>					
<b>Grading, evaluation and monitoring of students' work continuously during lectures and exams</b>					

Grading is based upon evaluation of course's learning outcomes' adoption. Grading is performed continuously during lectures and/or during exam, in compliance with the provisions of Regulation on the assessment of students.

**Continuous check-up:**

Outcomes	Pre-exam I	Pre-exam 2	Seminar work	Presentation of seminar work	Threshold	Max
Outcome 1	20 %				10 %	20 %
Outcome 2	20 %				10 %	20 %
Outcome 3			10 %	10 %	10 %	20 %
Outcome 4		20 %			10 %	20 %
Outcome 5		20 %			10 %	20 %
Percentage of ECTS	1,0	1,0	1,0	1,0	-	-
Total	40 %	40 %	10 %	10 %	50 %	100 %

A student has passed the exam if he has acquired a percentage of credits for each learning outcome higher or equal to defined threshold.

**Exam term:**

Outcomes	Written exam	Oral exam	Max
Outcome 1	20 %		20 %
Outcome 2	20 %		20 %
Outcome 3		20 %	20 %
Outcome 4	20 %		20 %
Outcome 5	20 %		20 %
Percentage of ECTS	3	1	
Total	80 %	20 %	100 %

A student has passed the exam if he has acquired a percentage of credits for each learning outcome higher or equal to defined threshold.

**Grading:**

A student has passed the exam if he has acquired at least 50% of anticipated credits of a specific learning outcome.

If a student has passed learning outcomes of all courses, the accomplished credits (percentages) of all passed learning outcomes are being added, while the final grade is defined upon following table:

Range of credits (percentages)	Numerical grade	ECTS grade
90,00 – 100,00	Excellent (5)	A
75,00 – 89,99	Very good (4)	B
60,00 – 74,99	Good (3)	C
50,00 – 59,99	Sufficient (2)	D
0,00 – 49,99	Insufficient (1)	F

**Obligatory literature**

1. Kroemer, K.H.E.: Prilagođavanje rada čovjeku, Ergonomski priručnik, Naklada Slap, Jastrebarsko, 2000.
2. Mikšić, D.: Uvod u ergonomiju, Fakultet strojarstva i brodogradnje, Zagreb, 1997.
3. Muftić, O.: Ergonomija u sigurnosti, Iproz, Zagreb, 2001.
4. Teaching materials published on the course pages

**Additional literature**

1. Rules from occupational safety areas



