

DESCRIPTION OF A STUDY COURSE – SYLLABUS

Title of a course	Engineering fundamentals				
Head of course	PhD Marko Kršulja, Lecturer				
Study programme	Professional undergraduate study Occupational Safety				
Status of a course	Obligatory				
Year of study	2.	Semester	IV	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					
Learning outcomes on a level of a study programme which includes course					
Outcome 1: Explain the basic principles of mathematics, physics, chemistry, electrical engineering and mechanics required for work in the field of occupational safety and health. Outcome 11: Use appropriate information technology to address specific occupational safety problems. Outcome 15: Identify the basic characteristics of production processes, machines and materials.					
Expected learning outcomes on a level of a course					
<ol style="list-style-type: none"> 1. Distinguish the properties of basic materials in mechanical engineering. 2. Use manuals with information on materials and machine parts characteristics. 3. Describe mechanical properties of materials. 4. Describe the machine elements of connecting parts and transmitting power. 5. Draw and interpret three-dimensional shapes from their orthogonal projections. 6. 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.					
Teaching modes	<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 _____		
Comments					
Students' obligations					
Grading, evaluation and monitoring of students' work continuously during lectures and exams					
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	Test	Home assignment	Threshold	Max
Outcome 1	5%		10%		7,50%	15%
Outcome 2	10%		5%		7,50%	15%
Outcome 3	10%		5%	10%	12,50%	25%
Outcome 4		15%		10%	12,50%	25%
Outcome 5		10%		10%	10,00%	20%
Percentage of ECTS	1,25	1,25	1	1,5	2,5	5
Total	25%	25%	20%	30%	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	10%	10%	20%
Outcome 2	10%	10%	20%
Outcome 3	10%	10%	20%
Outcome 4	10%	10%	20%
Outcome 5	10%	10%	20%
Percentage of ECTS	2,5	2,5	4
Total	50%	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.

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. Bognolo D.: Predavanja - Inženjerske osnove 2017-18
2. Makovic, B. i drugi: Strojarsvo i osnove strojarstva 1. i 2. dio, Neodidacta, Zagreb, 2008.
3. Szivovicza, V. iSliepevcic, A: Nacrtnageometrija 1. i 2. dio, Element, Zagreb, 1997.
4. Hercigonja, E.: Tehnickagrafika, Školskaknjiga, Zagreb, 1999.
5. Lucic, M.: Crtanje u AutoCAD-u, NakladaLucic – Tenja, 2012. (www.naklada-lucic.hr)

Additional literature

1. Kraut, B.: Strojarskiprirucnik, Zagreb, 2009.

