

DESCRIPTION OF A STUDY COURSE – SYLLABUS

Title of a course	Mathematics				
Head of course	MSc Katarina Volarić Nižić, Lecturer				
Study programme	Professional undergraduate study Occupational Safety				
Status of a course	Obligatory				
Year of study	1.	Semester	I	ECTS credits	8
Teaching plan (L + E + S+ Pr)	4+0+5+0				
Goals of a course					
Introduce students to the basic concepts of linear algebra, the function of a single variable and the infinitesimal calculus. Prepare students for their practical application.					
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 2: Perform and interpret measurements in the field of occupational safety in a laboratory and in the work environment. outcome 13: Use quantitative and qualitative methods in the analysis of data in the field of occupational safety					
Expected learning outcomes on a level of a course					
<ol style="list-style-type: none"> 1. Explain concepts from the basics of linear algebra. 2. Solve problems from the basics of linear algebra. 3. Explain concepts from the basics of mathematical analysis for single variable functions. 4. Apply the basics of mathematical analysis to a single variable function. 5. Explain concepts from the basics of infinitesimal calculus. 6. Solve problems from infinitesimal calculus. 					
Content of a course					
Basic symbols of mathematical logic. Sets, operations with sets. Concept, way of setting functions and some of their features. Concept of function domain. Function composition. Inverse function. Classification of functions. Elementary functions. Graphical representation and characteristics of some elementary functions. Definition of vector Addition and subtraction of vectors. Multiplying of vectors by a scalar. Linear combination of vectors. Dependence and independence. Basis and dimension of vector space. Vectors in rectangular co-ordinate system. Concept of series. Arithmetic and geometric series. Finite and infinite series. Series limiting value. Convergence and divergence. Limiting value and continuity of a function. Concept of derivative. Definition and geometric meaning of derivative. Differential of a function. Rules of derivation. Derivatives of elementary functions. Derivative of a composite function. Higher order derivatives. Equation of tangent.					
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	Pre-exam 3	Test 1	Test 2	Test 3	Threshold	Max
Outcome 1				10 %			5%	10%
Outcome 2	20%						10%	20%
Outcome 3					10 %		5%	10%
Outcome 4		25%					12,5%	25%
Outcome 5						10%	5%	10%
Outcome 6			25%				12,5%	25%
Percentage of ECTS	1,6	2	2	0,8	0,8	0,8	-	-
Total	20%	25%	25%	10%	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		10 %	10 %
Outcome 2	20%		20%
Outcome 3		10 %	10 %
Outcome 4	25%		25%
Outcome 5		10 %	10 %
Outcome 6	25%		25%
Percentage of ECTS	5,6	2,4	
Total	70%	30%	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. Štambuk, Lj.: Matematika, Veleučilište u Rijeci, Rijeka, 2007.
2. Štambuk, Lj., Peranić, Z., Matija, M.: Matematika – zbirka zadataka s riješenim primjerima, Veleučilište u Rijeci, Rijeka, 2008.
3. Mataija, M., Gligora Marković, M., Rakamarić Šegić, M.: Matematika - zbirka ispitnih zadataka, Veleučilište u Rijeci, Rijeka, 2014.

4. Štambuk, Lj.: Elementarna matematika, Veleučilište u Rijeci, Rijeka, 2008.
5. Jursić, K., Dražić, I.: Matematika I – zbirka zadataka, Zigo – Tehnički fakultet Sveučilišta u Rijeci, Rijeka, 2008.

Additional literature
Tutorials and course collections covering the topics covered in the course.

