

Study program: Communication Technologies / Modern computer technologies			
Course title: Mathematics 1			
Professor/assistant: Nataša Savić			
Type of course: compulsory			
ECTS credits: 6			
Pre-requisites: none			
Aims of the course: Acquiring the necessary knowledge to successfully follow vocational subjects.			
Learning outcomes: -practical application of knowledge; making difference between methods for solving systems of linear equations and applying appropriate methods for solving a particular system; -students should define and explain the matrices and determinants, enumerate their properties and uses in the matrix calculus; -students should make difference between scalar and vector quantities and use the technique of calculus.			
Syllabus			
<i>Theoretical part</i> Basic concepts of mathematical logics and theory of sets. Sets of numbers. Binomial formula. Polynomials and rational functions. Matrices and operations with them. Determinants. Inverse matrix. Systems of linear equations. Matrix equations. Vectors. Scalar, vector and mixed product of the vector. Basics of analytical geometry in space. Straight line and plane.			
<i>Practical part</i> Introduction to higher mathematics (exponentiation, inverse exponentiation, equations, inequalities, logarithms, trigonometry). Mathematical induction. Binomial formula. Complex numbers. Polynomials. Matrix account. Linear equation systems. Vector algebra. Straight line and plane in space.			
Literature			
1. S. Minčić, Viša matematika I sa rešenim primerima i zadacima za vežbu, Univerzitet u Nišu, 2014 2. Grupa autora, Matematika za Više tehničke škole, Zajednica viših škola, 1989. 3. Grupa autora, Zbirka zadataka iz matematike za više tehničke škole, Zajednica viših škola, 1989. 4. Ušćumlić, M., P., Miličić, P., M., Zbirka zadataka iz više matematike, Naučna knjiga, Beograd, 1990.			
Number of active classes 60			Other forms of teaching:
Lectures: 30	Practical classes: 30	Research work:	
Teaching methods Theoretical and practical teaching in combination with interactive teaching with practical problem solving.			
Grading system (maximum 100 points), grading scale from 5 to 10: below 51 points grade 5, grade 6 from 51-60 points, grade 7 from 61-70 points, grade 8 from 71-80 points, grade 9 from 81-90 points, grade 10 from 91-100 points.			
Pre-exam obligations	points	Final exam	points
activity during theoretical lectures	10	written exam	30
practical training	20	oral exam	
colloquium(s)/seminar papers	40		
Sum	70	Sum	30