

Study program: Environmental Protection			
Course title: Mathematics 1			
Professor/assistant: Milica Cvetković			
Type of course: compulsory			
ECTS credits: 6			
Pre-requisites: -			
Aims of the course: Prepare students to: acquire the necessary knowledge to successfully follow the teaching of vocational subjects, apply mathematical apparatus in solving engineering problems, systematize and extend knowledge about matrices, determinants, vectors and their applications.			
Learning outcomes: Student will be able to: apply the basic operations of the complex numbers to the algebraic and trigonometric forms, calculate the arbitrary order determinants, know when there is an inverse matrix and how to calculate it, distinguish the methods for solving the linear equations system and apply them appropriately, calculate the dot product, cross product and scalar triple product of the vectors and apply them, know the equations of the plane and lines in 3D coordinate system and determine mutual position (distances, angles, intersections) of points, lines and planes.			
Syllabus			
<u>Theoretical part</u> Elementary algebra (number sets, polynomials). Linear algebra (matrices, determinants, linear equations, vectors). Analytical geometry in space.			
<u>Practical part</u> Introduction to higher mathematics (exponentiation, rooting, equations, inequations, logarithm, trigonometry). Complex numbers. Polynomials. Use of matrices in technique. Use of vectors in technique. Lines and planes in space.			
Literature			
<ol style="list-style-type: none"> 1. S. Minčić, Viša matematika 1 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. 			
Number of active classes			Other forms of teaching:
Lectures: 2	Practical classes: 2	Research work:	
Teaching methods Combined and interactive methods.			
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	5	written exam	30
practical training	5	oral exam	-
homework and tests practices	20		
colloquium(s)/seminar papers	40		
Sum	70	Sum	30