

Course Unit Descriptor

<b>Study Program:</b> Information technology; Informatics and Technics in Education; Information Technology Management; Information Technology - Software Engineering; Engineering Management; Environmental Engineering; Clothing Engineering; Mechanical engineering; Industrial engineering in exploitation of oil and gas			
<b>Course Unit Title:</b> Mathematics 1			
<b>Course Unit Code:</b> OAS053			
<b>Name of Lecturer(s):</b> Professor Momčilo Bjelica, PhD			
<b>Type and Level of Studies:</b> Bachelor Academic Degree			
<b>Course Status (compulsory/elective):</b> Compulsory			
<b>Semester (winter/summer):</b> Winter			
<b>Language of instruction:</b> English			
<b>Mode of course unit delivery (face-to-face/distance learning):</b> Face-to-Face			
<b>Number of ECTS Allocated:</b> 7			
<b>Prerequisites:</b> None			
<b>Course Aims:</b> Acquisition of basic knowledge in advanced mathematics and enabling students for abstract thinking and application of acquired knowledge in general and other professional courses. Development of the calculation techniques used for practical problems, projects and professional Courses.			
<b>Learning Outcomes:</b> Acquired knowledge is used in further education and in professional courses. The student uses and solves mathematical models using acquired mathematical knowledge. Enabling students for logical thinking and making conclusions based on the data analysis results.			
<b>Syllabus:</b> <i>Theory</i> Basics of general algebra. Complex numbers – properties and operations. Polynomials – roots, Horner scheme, rational functions. Linear algebra – determinants properties and calculation, matrices – properties, operations, invertibility, range. Systems of linear equations – methods of solving, discussion of solutions. Vector algebra – linear dependence, vector operations, applications. Analytical geometry – plane and line in space. <i>Practice</i>			
<b>Required Reading:</b> 1. K. Hoffman, R. Kunze, <i>Linear Algebra</i> , Prentice-hall, Inc., Englewood Cliffs, New Jersey , 1961. 2. M. Bjelica, <i>Matematika</i> , Technical faculty Mihajlo Pupin, Zrenjanin 2011. 3. Z. Stojakovic, D Herceg, <i>Linearna algebra I analitička geometrija</i> , Institut za matematiku, Novi Sad, 2008. 4. R. Dimitrijevic, <i>Zbirka zadataka iz teorije polinoma</i> , Društvo matematičara Srbije, 2011.			
<b>Weekly Contact Hours:</b> 6	<b>Lectures:</b> 3	<b>Practical work:</b> 3	
<b>Teaching Methods:</b> Lectures and student learning group work			
<b>Knowledge Assessment (maximum of 100 points):</b> 100			
<b>Pre-exam obligations</b>	points	<b>Final exam</b>	points
Test I	20	written exam	40
Test II	20	oral exam	20