

Study program: Industrial Engineering			
Course title: Mathematics 2			
Professor/assistant: PhDMilica Cvetković			
Type of course: compulsory			
ECTS credits:6			
Pre-requisites: -			
Aims of the course: is preparing a student to: <ul style="list-style-type: none"> - acquire the necessary knowledge to successfully follow vocational subjects instruction; - apply a mathematical apparatus in solving engineering problems; systematize and extend knowledge about real valued functions of a real variable, differential and integral calculus.			
Learning outcomes: Student is able to: <ul style="list-style-type: none"> - find derivative and differentials of a function; - apply derivative in function analysis; - apply derivative in dynamics (speed and acceleration); - calculate the limit of a function by applying L'Hôpital's rule; - distinguish methods for indefinite integrals and apply the Newton-Leibniz formula to definite integrals; - apply definite integral in calculating the area, volume and arc length; distinguish the types of differential equations of the first order and apply the corresponding methods for their solving.			
Syllabus <i>Theoretical part:</i> Real valued functions of a real variable. Differential calculus. Integral calculus. Differential equations of the first order. <i>Practical part:</i> Real valued functions of a real variable and their properties. Limit of functions. Derivative and differential of a function. Derivative and differential of higher order. Derivative application in engineering. Indefinite integral. Methods of integration. Integration of rational, irrational and trigonometric functions. Definite integral and its applications. Differential equations of the first order and their applications in engineering.			
Literature			
1. S. Minčić, <i>Viša matematika 1 sa rešenim primerima i zadacima za vežbu</i> , Univerzitet u Nišu, 2014. 2. Grupa autora, <i>Matematika za više tehničke škole</i> , Zajednica viših škola, 1989. 3. Grupa autora, <i>Zbirka zadataka iz matematike za više tehničke škole</i> , Zajednica viših škola, 1989.			
Number of active classes			Other forms of teaching:
Lectures: 2	Practical classes: 2	Research work:	
Teaching 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	10	written exam	30
practical training	20	oral exam	
colloquium(s)/seminar papers	40		
Sum	70	Sum	30