Study program: Modern Computer Technology / Communication Technology / Civil Engineering
Course: Mathematics 2
Professor/Assistant: PhD Nataša Savić / PhD Nataša Savić
Status of course: compulsory
ECTS credits: 6
Pre-requisites: none

Aims of the course:
- acquiring necessary knowledge for successful teaching of professional subjects;
- application of mathematical tools in solving engineering problems;
- systematization and deepening knowledge related to the functions of a real variable, differential and integral account.

Learning outcomes:
A student is able to:
- defines the function and explains the basic characteristics of a function of one variable (definition, parity, non-transparency, periodicity, boundary value, and continuity)
- calculates derivative and differential of a function;
- apply a derivative in determining characteristics of a function;
- analyze and draw a function graphic;
- calculates the limit value of the function using Lopital's rule;
- different integration methods for indefinite integrals and apply the Newton-Leibniz formula for closed integrals;
- apply a closed integral in calculating the area, volume, and length of the curve;
- it distinguishes types of differential equations of the first order and applies the appropriate method for solving them.

Syllabus:

Theoretical part
Functions: concept, properties, limit and continuity, asymptotes. Numerous series, concept, properties and limit value. Differential and integral account. Differential equations of the first order. An equation that separates variables. Homogeneous differential equation. Linear differential equation. Bernoulli differential equation. Numerous order.

Practical part
The exercise program follows the theoretical lessons.

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.

Number of active classes			Other forms of teaching:
Lectures: 2	Practical classes: 2	Laboratory classes: 0	

Teaching methods:
Combined and interactive classes with solving practice cases.

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-commitments	**points**	**Final exam**	**points**
activity during lectures	10	written exam	-
homework	20	oral exam	30
colloquium(s)	20 + 20		
Sum	**70**	**Sum**	**30**