Study programme(s): M3: Mathematics

Level: bachelor

Course title: Analysis 1 (M3-05)

Lecturer: Aleksandar V. Pavlović

Status: obligatory

ECTS: 8

Requirements: none

Learning objectives

Getting familiar with foundations of mathematical analysis of real functions of the real variables and calculus.

Learning outcomes

Students are expected to adopt concepts and theorems about the basic properties of those concepts. Desired outcomes would be in-depth understanding of theorems and principles used in proving them, as well as adopting various techniques of problem-solving.

Syllabus

Theoretical instruction

Differential calculus. Derivative, its properties and calculations, basic theorems. Application in examination of monotonicity.

Integral calculus, definite and indefinite integral and its applications. Improper integral. Infinite series and its convergence. Functional sequences and series. Convergence and uniform convergence. Power series.

Practical instruction

Solving problems from the topics done during the theoretical instruction classes.

Literature

1. Ljiljana Gajić, Predavanja iz Analize 1, PMF.
2. Ljiljana Gajić, Stevan Pilipović, Nenad Teofanov, Zbirka zadataka iz analize 1, drugi deo.

Weekly teaching load				Other: 0
Lectures: 3	Exercises: 3	Other forms of teaching: 0	Student research: 0	

Teaching methodology

Lectures: Classical methods of presenting theoretical topics with comments.

Exercises: adoption of theories by solving problems.

Grading (maximum number of points 100)

Pre-exam obligations	**points**	**Final exam**	**points**
Colloquia	50	Oral exam	50