

Study programme(s): Mathematics (M3)				
Level: bachelor				
Course title: Introduction to Analysis				
Lecturer: Nenad M. Teofanov				
Status: obligatory				
ECTS: 8				
Requirements: none				
Learning objectives Introduction to the basic notions of mathematical analysis. Understanding the basic theorems and properties of real numbers and sequences, and limits and continuity of real functions.				
Learning outcomes It is expected that a student meets and learns the basic notions of mathematical analysis: real numbers, sequences and continuous functions and theorems concerning their basic properties. It is desirable that students obtain the knowledge of basic theorems, their proofs and corresponding proof techniques and become able to solve exercises.				
Syllabus <i>Theoretical instruction</i> Real numbers – definition and basic properties. Completeness axiom and its equivalent formulations. Topological structure of real numbers. Sequences, convergence, monotone sequences, Cauchy sequences. Real functions, limit of a function, monotone functions, asymptotes. Continuity, local and global properties of continuous functions. <i>Practical instruction</i> Exercises which illustrate theoretical results with respect to topics delivered on theoretical instructions. Introduction to techniques for examination and determination of limits of sequences and functions. Determination of asymptotes of real functions. Examination of continuity and uniform continuity at points or on sets.				
Literature <ol style="list-style-type: none"> 1. Ljiljana Gajić, Predavanja iz Uvoda u analizu, PMF, 2004. 2. Đurđica Takači, Arpad Takači, Zbirka zadataka iz analize 1, prvi deo. 				
Weekly teaching load				Other:
Lectures: 4	Exercises: 3	Other forms of teaching:	Student research:	
Teaching methodology Presentations of the theoretical basics with comments. Applications of theory through various exams.				
Grading (maximum number of points 100)				
Pre-exam obligations	points	Final exam	points	
Colloquia	60	Oral exam	40	