

Study Program: Mathematics				
Type and level of studies: Bachelor studies				
Course name: Mathematical Analysis 1				
Lecturer: Stana D. Cvejić				
Status: Compulsory				
ECTS: 9				
Attendance prerequisites: none				
Course aims				
Getting acquainted with the basic concepts of mathematical analysis of real functions of one real quantity (application of sets, relations, mapping; arrays, functions, differential calculus, differential calculus theorems) and acquiring other knowledge about research.				
Course outcome				
The student should learn the basic concepts of Mathematical Analysis - limits, continuity and derivatives and should be able to apply this knowledge. The students should have an in-depth understanding of the theorem, as well as of the corresponding principles for their proving. The students should also grasp the different techniques for solving mathematical problems.				
Course content				
Theoretical part				
Set theory, Cartesian production and consequences, binary relations, mapping (functions), binary operations, real numbers and properties, complex numbers, numerical sequences, notion of properties, convergence, operations, real change comparison theorems, functions in polar and parametric coordinates, classification basic elementary functions, limit value and continuity function, functions of limited variation; differential calculus (derivative, concept and geometric interpretation, rules of differentiation, derivatives of basic elementary functions, functions in polar and parametric coordinates, differential function and geometric interpretation, rules for calculating differentials, basic theorems of differential calculus, derivatives and higher order differentials), L'hopital rules, logarithmic differential equations.				
Practical part				
Exercises, Other forms of teaching, Study research work				
Task and problem solving from the same areas as in the theoretical part of teaching.				
Literature				
1. Д. Аднађевић, З. Каделбург: Математичка анализа I, Математички факултет, Београд, 2008,				
2. И.И.Љашко, А.К.Бојарчук, Ј.Д.Головач: Збирка задатака из математичке анализе „IBC” 98, Београд 2002				
3. Љ.Ђ.Такачи и аутори: Збирка задатака из Анализе I, Институт за матем. ПМФ, Нови Сад, 2000				
Number of active classes				Other classes
Lectures: 3	Practical classes: 3	Other forms of teaching:		
Teaching methods				
Classes are conducted in the form of lectures; consultations are available. Term tests, homework, seminar papers are obligatory.				
Assessment (maximum 100 points)				
Course assignments	points	Final exam	points	
activity during lectures	5	written exam	30	
practical classes	-	oral exam	35	
term test(s)	30		
seminar(s)				