

Study Program: Mathematics			
Type and level of studies: Bachelor studies, IV semester			
Course name: Mathematic Analysis 4			
Lecturer: Jelena Z. Vukajović			
Status: Compulsory			
ECTS: 9			
Attendance Prerequisites: Mathematic Analysis 1, Mathematic Analysis 2			
Course aims Acquiring knowledge of Mathematical Analysis related to uniform convergence, curvilinear and surface integrals.			
Course outcome The students have grasped the concepts of functions of several real variables, the concepts of curvilinear and surface integrals and be able to apply them. They understand the concept of uniform convergence, and are able to apply it to functional series (especially Fourier) and to parametric integrals.			
Course content <i>Theoretical part</i> Multiple integrals. Jordan measure, n-integral. Integral on Jordan measurable sets. Properties of n-integrals. Reduction of an n-integral to an n-double integral. Change variables. Application of integrals. Improper integral. Curvilinear and surface integrals. Curvilinear integrals of the first and second kind. Vector fields and curvilinear integral. Independence of integration from trajectory, Green's theorem, Stieltjes integral (existence and calculation). Surface integrals of the first and second kind. Gradient, divergence, rotor. Stokes formula, Gauss-Ostrogradsky formula. Integrals as parameter functions. Inherent parametric integrals. Improper integrals, uniform convergence. Functional properties of inherent integrals. Euler integrals. Fourier series. Ordinary convergence. Conditions of uniform convergence, differentiation and integration. Fourier integral. <i>Practical part</i> Practice is done in accordance with the theoretical part.			
Literature 1. Д. Аднађевић, З. Каделбург, Математичка анализа II, Математички факултет, Београд 2008. 2. С. Раденовић, Математичка анализа II-методска збирка задатака, Математички факултет, Београд 2002			
Number of active classes		Lectures: 3	Practical classes: 3
Teaching methods Lectures, calculation exercises, laboratory exercises, consulting, term papers, homework, written exam.			
Assessment (maximum 100 points)			
Course assignments	points	Final exam	points
activity during lectures	10	written exam	20
practical classes	-	oral exam	30
term test(s)	40		
seminar(s)			
Total:	50		50