

<b>Study programmes:</b> PhD STUDIES - Mathematics				
<b>Course name:</b> CODE 3M102 – Analysis 4				
<b>Lecturers:</b> Miloš Arsenović				
<b>Status:</b> Optional				
<b>ECTS:</b> 9				
<b>Attendance prerequisites:</b> No prerequisites.				
<b>Course aims:</b> Mastering the concepts and methods of measure theory.				
<b>Course outcome:</b> The student needs to understand and apply notions and techniques of measure theory.				
<b>Course content:</b> INTEGRATION ON LOCAL COMPACT SPACES. Regularity properties of Borel measures. Representation theorems for positive and bounded linear functionals on the space of continuous finite functions. MAXIMAL FUNCTION. Weak type inequality Lebesgue differentiation theorem. Boundedness of a maximal function in $L^p$ . Marciniwicz interpolation theorem. Riesz – Thorin theorem.				
<b>Literature:</b>				
1. W. Rudin: <i>Real and Complex Analysis</i> .				
2. E. M. Stein: <i>Singular Integrals and Differentiability Properties of Functions</i> .				
<b>Number of hours:</b> 10	<b>Lectures:</b> 4	<b>Tutorials:</b> -	<b>Laboratory:</b> -	<b>Research:</b> 6
<b>Teaching and learning methods:</b> Frontal, tutorial and practical				
<b>Assessment (maximal 100 points)</b>				
<b>Course assignments</b>	<b>points</b>	<b>Final exam</b>		<b>points</b>
Lectures	-	Written exam		-
Exercises / Tutorials	50	Oral exam		50
Colloquia	-	Written-oral exam		-
Essay / Project	-			