

<b>Study program:</b> Mathematics				
<b>Type and level of studies:</b> Undergraduate studies				
<b>Course unit:</b> Mathematical Analysis				
<b>The teacher in charge:</b> Assistant Professor, Suzana Aleksić				
<b>Language of instruction:</b> English				
<b>ECTS:</b> 9 (nine)				
<b>Prerequisites:</b> /				
<b>Semester:</b> <i>Winter Semester</i>				
<b>Course unit objective:</b> This course covers some fundamentals of mathematical analysis: differentiability, Riemann integral, convergence of series. It shows the utility of abstract concepts and teaches an understanding and construction of proofs.				
<b>Course unit contents</b>				
<b>Lectures:</b> Metric spaces $\mathbf{R}$ (ball neighborhoods, open subsets, limit points, closed subsets, dense subsets); Convergence (convergent sequences; Cauchy sequences, completeness, compact subsets of $\mathbf{R}$ ); Separable space; Connectedness; Continuity of real functions; Derivatives, the chain rule; Rolle's theorem; Mean value theorem; Taylor's theorem; L'Hospital's rule; Riemann-Stieltjes integral: definition, basic properties; Fundamental theorems of calculus; Convergence of series of numbers using the Cauchy criterion, the comparison, ratio, and root tests; Convergence of alternating series; Dirichlet's and Abel's test.				
<b>Practical teaching:</b> study research work				
<b>Literature</b>				
1. W. Rudin, <i>Principles of Mathematical Analysis (International Series in Pure and Applied Mathematics)</i> , 3rd ed. McGraw-Hill, 1976.				
2. M. Spivak, <i>Calculus</i> , 4th ed. Publish or Perish, 2008.				
<b>Number of active teaching hours</b>				<b>Other classes</b>
Lectures: 3	Practice: 3	Other forms of classes: mentoring system 1	Independent work: 0	
<b>Teaching methods</b>				
Lectures in traditional manner using black board, discussions, consultation with the professor				
<b>Examination methods (maximum 100 points)</b>				
<b>Exam prerequisites</b>		<b>No. of points:</b>	<b>Final exam</b>	<b>No. of points:</b>
Student's activity during lectures		<b>4</b>	oral examinations	<b>50</b>
tests		<b>46</b>		
<b>Grading system</b>				
<b>Grade</b>	<b>No. of points</b>		<b>Description</b>	
<b>10</b>	<b>91-100</b>		Excellent	
<b>9</b>	<b>81-90</b>		Exceptionally good	
<b>8</b>	<b>71-80</b>		Very good	
<b>7</b>	<b>61-70</b>		Good	
<b>6</b>	<b>51-60</b>		Passing	
<b>5</b>	<b>0-50</b>		Failing	