

Program	Level of studies		First cycle	
	Program name		Physics	
Course name	MATHEMATICAL ANALYSIS FOR PHYSICISTS I			
Course ID	Semester	Course status	ECTS	L+E
POT1721	I	MANDATORY	7	3+3
Lecturer	Prof. dr. Nacima Memić			
Aims and intended learning outcomes	<p>Aim of the course is to develop the ability to deal with differential calculus. The students will be able to:</p> <ul style="list-style-type: none"> -apply calculus in physics problems. -use various convergence tests. - describe the behaviour of differentiable functions. 			
Course content				
<ol style="list-style-type: none"> 1. Axioms of the set of real numbers 2. Mathematical induction- Rational and irrational numbers- 3. The nested intervals theorem-Accumulation point theorem 4. Sequences-Limits- Number e 5. Series and sums 6. Series with positive terms 7. Convergence criteria of series 8. Real functions-Limits 9. Continuous functions- Elementary functions 10. Notion of derivative- Basic rules- 11. Higher order differentials 12. Basic theorems on calculus 13. L'Hopital rule 14. Taylor Formula 15. Convex functions 				
Student workload (hours)		Grading		
		Assessment method	Points	
Lectures and Exercises	90	Tests during course	50	
Exam preparation	85	Final exam	50	
Total	175	Total	100	
Literature				
<ol style="list-style-type: none"> 1. V. A. Zorich, Mathematical analysis I, Universitext, Springer, Berlin, 2003. 2. I. Ljaško i dr., Zbirka zadataka iz matematičke analize, IBC '98, 2002. 				
Remarks				