

Program	Level of studies		First cycle	
	Program name		Physics	
Course name	MATHEMATICAL ANALYSIS FOR PHYSICISTS II			
Course ID	Semester	Course status	ECTS	L+E
POT2811	II	MANDATORY	8	3+4
Lecturer	Prof. dr. Nacima Memić			
Aims and intended learning outcomes	<p>The aim of the course is to develop the ability to calculate and use integrals in various applications.</p> <p>Students are expected to:</p> <ul style="list-style-type: none"> -apply the notions of integrals in physics problems -deal with various techniques for calculating integrals - use integration in physics problems 			
Course content				
<ol style="list-style-type: none"> 1. Integration table - Integration methods 2. Integration of rational and trigonometric functions 3. Integration of irrational functions- Binomial integral 4. Definite integral - Riemann sum 5. Riemann integrability criterion 6. First mean value theorem for integrals 7. fundamental theorem of calculus 8. Change of variables in definite integral 9. Second mean value theorem for integrals 10. Area of a plane surface- Volume of a rotating solid 11. Arc length formula - Area of a rotating curve 12. Ordinary and uniform convergence of a sequence of functions 13. Properties of uniformly convergent series of functions 14. Power series - Convergence radius of power series 15. Differentiation and integration of power series 				
Student workload (hours)		Grading		
		Assessment method	Points	
Lectures and Exercises	90	Midterm exam	50	
Exam preparation	110	Final exam	50	
Total	200	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				