Program	Level of studies		First cycle	
	Program name		Educational 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	The aim of the course is to develop the ability to calculate and use integrals in various applications. Students are expected to: -apply the notions of integrals in physics problems -deal with various techniques for calculating integrals - use integration in physics problems			

Course content

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

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