Program	Level	Third cycle		
	Name of the program	SEE Doctoral Studies in Mathematical Science		
COURSE				
Course title	**Algebraic topology I**			
Course code	Semester	Course status	ECTS	Contact hours
PMAT 630	I	Elective course	10	30
Lecturer	**Prof. Dr. Ismar Volić**			
Course Goals	Algebraic topology uses the techniques from the algebra for study of topological space. The goal is to develop the algebraic invarijants as the fundamental group and (co)homology that have been easing at the classification of space and drawing its geometrical forms that remains unforced during deformation. This case will present the basis of the algebraic topology but also put to some new applications as the topological analysis of data.			

COURSE CONTENT

- Homotopic equivalence
- Fundamental group
- Van Kampen Theorem
- Overcovering
- Simplicity complex
- Chain complex
- Homology
- Homological algebra
- Categories and functors
- Topological analysis of data

LITERATURE

[1] Allen Hatcher, Algebraic Topology, Cambridge University Press, 2002
[2] Tammo Tom Dieck, Algebraic Topology, European Mathematical Society, 2008
[3] James Davis and Paul Kirk, Lecture Notes in Algebraic Topology, American Mathematical Society, 2001
[4] J. Peter May, A Concise Course in Algebraic Topology, University of Chicago Press, 1999

GRADING			**REMARKS**
Criterion	Maximum points	Minimum points	
Homeworks	70	40	
Final exam	30	15	
T o t a l	100	55	