Program	Level	First cycle
	Name of the program	Mathematics Education, Pure Mathematics, Mathematics and Informatics Educations

COURSE				
Course title	**Combinatorics**			
Course code	Semester	Course status	ECTS	Contact hours (L+AE+LE)
PMAT 280	I V	Mandatory / Elective course	5	2+2+0
Lecturer				
Course Goals	The goal is to teach students the basis of enumerative combinatorics, how to solve the combinatorial problems and how to teach combinatorics in schools.			
Learning Outcomes	Ability of solving combinatorial problems.			

COURSE CONTENT

The Fundamental Counting Principle, (combinations, variations, permutations, combinatorial identities).
The binomial and Multinomial Theorems
Partitions, Stirling Numbers of the First and the Second Kind.
The principle of Inclusion and Exclusion.
Ordinary and Exponential generating functions.
Graph theory (connected graphs, planarity, coloring of the graphs, the Euler and the Hamilton cycles)

LITERATURE

[1] Merris, Combinatorics, PWS Publishing Company
[2] Veljan Darko, Kombinatorika s teorijom grafova, Školska knjiga-Zagreb
[3] Mikols Bona, A walk through Combinatorics, World Scientific Publishing, 2011.

STUDENT WORKLOAD (hours in a semester)							
Lectures	30	Tutorial	30	Individual work	65	T o t a l	125

GRADING			REMARKS
Criterion	Maximum points	Minimum points	
Midterm exams	50	25	
Homework assignment			
Project			
Laboratory assignments			
Final exam	50	25	
T o t a l	100	55	