Program	Type of studies (cycle)	Third cycle
	Name of the program	Doctoral Studies in Mathematical and Computer Science

Course

Course title	**Selected Areas of Combinatorics**

Course code	Semester	Course status	ECTS credits	Contact hours
PMAT 651	II	elective	10	30

Aims and intended learning outcomes	The primary objective of the course is for students to acquire knowledge and skills in selected advanced areas of combinatorics. The course content will not be strictly defined beforehand but rather tailored to the students' needs and interests. Upon successful completion of the course, the student should possess a deep understanding of the theory within the studied area and the ability to apply that knowledge in various contexts—whether within combinatorics itself or in other fields of mathematics and science. Furthermore, the student should develop the capacity to conduct independent research in the subject area and draw scientific conclusions related to it.

Course content/topics

Students may choose one of the following areas of combinatorics:

- Latin squares
- Partitions of numbers and elements of finite algebraic structures
- Analytic combinatorics

LITERATURE

[1] Miklós Bóna, A Walk Through Combinatorics, An Introduction to Enumeration and Graph Theory, World Scientific Publishing Co. Pte. Co. , 2002

[2] Russell Merris, Combinatorics, John Wiley & Sons, 2003

[3] Darko Veljan, Kombinatorika s teorijom grafova, Školska knjiga, Zagreb 1989

Grading

	Criterion	Points	Cut-off points
1.	Written assignment	30	15
2.	Project	30	15
3	Final exam	40	25
	Total	100	55