Course description

Department/Unit /	KMA / DM			**Academic Year**	2023/2024
Title	Discrete Mathematics and Optimization			**Type of completion**	State Final Exam
Accredited/Credits	Yes, 0 Cred.			**Type of completion**	
Number of hours					
Occ/max	Status A	Status B	Status C	**Course credit prior to**	No
Summer semester	2 / -	0 / -	0 / -	**Counted into average**	YES
Winter semester	0 / -	0 / -	0 / -	**Min. (B+C) students**	1
Timetable	Yes			**Repeated registration**	NO
Language of instruction	Czech			**Semester taught**	Summer semester
Optional course	Yes			**Internship duration**	0
Evaluation scale	1|2|3|4				
No. of hours of on-premise					
Auto acc. of credit	No				
Periodicity	every year				
Specification periodicity					
Substituted course	None				
Preclusive courses	KMA/DMI				
Prerequisite courses	KMA/TGD1 and KMA/TGD2 and KMA/AVS or KMA/KO				
Meet all prerequisites before registering	NO				
Informally recommended courses	N/A				
Courses depending on this Course	N/A				

Course objectives:

The state examination in Discrete Mathematics verifies understanding of concepts and relationships in the field and student's ability of active application of basic methods in Discrete Mathematics, Graph Theory and Combinatorial Optimization, and has a general overview of algorithmic aspects and computational complexity of basic problems in the field. Emphasis is given on understanding relations between particular concepts. The exam also verifies level of mathematical thinking and culture of presentation.

Requirements on student

Passing all prerequisite courses.

Content

Final state examination is an oral exam, consisting in a presentation in front of a jury. Usual duration of about 30-45 minutes total, with 15 minutes for eaxh partial exam. Main contents of the state exam generally corresponds to the prerequisite courses. Detailed contents is annually published by the Department of Mathematics.

Fields of study

Guarantors and lecturers

- **Guarantors:** prof. RNDr. Zdeněk Ryjáček, DrSc. (100%)

Literature

- **Recommended:** *Literatura je dána literaturou podmiňujících předmětů a doporučením garanta oboru./ Literature as given by the conditional courses and recommended by the course guarantor..*

assessment methods

Knowledge - knowledge achieved by taking this course are verified by the following means:

Oral exam

prerequisite

Knowledge - students are expected to possess the following knowledge before the course commences to finish it successfully:

The student has to pass successfully all prerequisite courses.
KMA/TGD1, KMA/TGD2, KMA/MSR, KMA/AVS nebo KMA/KO

learning outcomes

Knowledge - knowledge resulting from the course:

Passing the final state examination in Discrete Mathematics verifies that the student has obtained knowledge, skills and competences in Discrete Mathematics, Graph Theory, Combinatorial Optimization and Computational Complexity.

Course is included in study programmes:

Study Programme	Type of	Form of	Branch	Stage	St. plan v.	Year	Block	Status	R.year	R.
Mathematics for Business Studies	Postgraduate Master	Full-time	Matematika a finanční studia	1	2023	2023	Státní závěrečná zkouška a obhajoba diplomové práce	A	2	LS
Mathematics for Business Studies	Postgraduate Master	Full-time	Matematika a finanční studia	1	2018 akr	2023	Státní závěrečná zkouška a obhajoba diplomové práce	A	2	LS