Study programmes: Master – Mathematics

Course name: Operational Research

Lecturers: Aleksandar Savić

Status: Optional

ECTS: 8

Attendance prerequisites: No preconditions

Course aims: Earning general and specific knowledge from Operational research.

Course outcome: After conclusion of the cours, student should be able to solve different problems of opertional research.

Course content:
Modelling real problems (examples). Problem of integer and discrete programming. Knapsack problem. Dynammic programming method. Cutting planes methods, method of branch and boudn, implicit enumeration. Optimization on networks. Problems of maximal flow, shortets path, problems of covering and matching, problems of minimal spanning tree and traveling salesman problem..

Literature:
Dugošija Đ., Savić A.: Operaciona istraživanja, Matematički fakultet Univerziteta u Beogradu, 2018.
Cvetković D., Kovačević V., Dugošija Đ., Čangalović M., Simić S., Vuleta J.: Kombinatorna optimizacija, DOPIS, 1996.
Nemhauser G., Wolsey: Integer and Combinatorial Optimization, John Wiley and Sons, Inc, 1999.
Korte B., Vygen J.: Combinatorial Optimization, Springer 2005.

Number of hours: 5	**Lecures: 3**	**Tutorials: 2**	**Laboratory: -**	**Research: -**

Teaching and learning methods:
Frontal / Lectures / Exercises

Assessment (maximal 100 points)

Course assignments	**points**	**Final exam**	**points**
Lectures	5	Written exam	40
Exercises / Tutorials	5	Oral exam	20
Colloquia	30		
Essay / Project	-		