

Subject code	Credits
INF5008	6

Course title in Lithuanian

OPERACIJŲ TYRIMAS IR VALDYMAS

Course title in English

OPERATION RESEARCH AND MANAGEMENT

Short course annotation in Lithuanian (up to 500 characters)

Kurso tikslas supažindinti studentus su operacijų tyrimo teorija. Mokoma taikyti operacijų tyrimo metodus versle ir gamybos operacijų valdyje. Paaiškinama kaip integruojami operacijų tyrimo ir valdymo metodai su informacinėmis technologijomis ir taikomi praktiniams uždaviniams spręsti.

Short course annotation in English (up to 500 characters)

The objectives of the course are to teach students theoretical concepts of the subject Operations Research and Management, and to train them to apply OR methods for effective decision making, modelling real world problems in business and production operations management. After completing the course students will be able to integrate methods of OR and operations management with information technologies, and to apply these methods to practical problems, especially in business operations management.

Prerequisites for entering the course

Discrete Structures, Mathematical Analysis, Linear Algebra

Course aim

To teach students theoretical concepts of the subject, and to train them to apply OR methods for effective decision making, modelling real world problems in business and production operations management.

Content

No	Content (topics)
1.	Introduction to operations research and management
2.	Transportation problems and Simplex method
3.	Special cases of transportation problems
4.	Network models
5.	CPM and PERT
6.	Decision Making: Fuzzy, AHP
7.	Multi-objective optimization
8.	Dynamic programming
9.	Queuing. Waiting Line Models
10.	Portfolio optimization
11.	Forecasting

Distribution of workload for students (contact and independent work hours)

Lectures	45 hours
Laboratory work	15 hours
Individual students work	100 hours
Total:	160 hours

Structure of cumulative score and value of its constituent parts

Final written exam (50%), mid-term written exam (17%), and assessments of laboratory (practical) work (33%).

Recommended reference materials

No.	Publication year	Authors of publication and title	Publishing house	Number of copies in		
				University library	Self-study rooms	Other libraries
<i>Basic materials</i>						
1.	2010	H. Taha, Operations research: An Introduction	Prentice Hall		1	
2.	2014	F.S. Hillier, Introduction to operations research	McGraw-Hill		1	
3.	2000	A. Žilinskas, Mathematical programming (in Lithuanian language)	VDU	46		electronic
<i>Supplementary materials</i>						
4.	2007	S. Kalanta, Taikomosios optimizacijos pagrindai	Technika	Unlimited online content biblioteka.vdu.lt		

Course programme designed by

Dr. Audrius Varoneckas, Systems Analysis Department