



Меѓународен Универзитет Визион - International Vision University
 Universiteti Ndërkombëtar Vizion - Uluslararası Vizyon Üniversitesi

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SYLLABUS

COURSE NAME	COURSE CODE	SEMESTER	COURSE LOAD	ECTS
FUNDAMENTALS OF OPERATIONS RESEARCH	4037	7	180	6

Prerequisite(s)	None
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Course Language	Turkish
Course Type	Elective
Course Level	First Cycle
Course Lecturer	
Course Assistants	
Classroom	
Extra-Curricular Office Hours and Location	

Course Objectives	The aim of this course is to enable students to teach model construction in decision analysis, solution of the problems in decision analysis, necessary techniques for a constructed model, to explore the validity of that model and to interpret the results of the solution for that model.
Course Learning Outcomes	<ul style="list-style-type: none"> 1-To provide students skill of modeling a problem by linear programming model 2-To enable students to learn the methods of linear programming like graphic solution method and simplex algorithm 3-To enable students to understand the usage and limits of the simplex algorithm 4-To enable students to apply sensitivity analysis for modeled problems by linear programming 5-To enable students to explore linear programming in various problems by using a software package 6-To enable students to model transportation and assignment problems by using suitable optimization algorithms 7-To enable students to know decision theory and decision making approaches 8-To enable students to solve decision problems related with game theory.
Course Contents	In this course description and historical development of Operational Research, Solution methods of linear programming, sensitivity analysis, transportation and assignment problems, giving basic information about the decision analysis and game theory, the creation of relevant models and solutions will be examined.

WEEKLY SUBJECTS AND RELATED PREPARATION STUDIES

Week	Subjects	Related Preparation
1	Introduction to Operations Research	Related Chapters of Course Sources
2	Linear Programming (LP) problems and modelling	Related Chapters of Course Sources
3	Examination of LP models	Related Chapters of Course Sources
4	Solution methods of LP models	Related Chapters of Course Sources
5	The graphical solution of LP problems	Related Chapters of Course Sources
6	The solution of LP Problems with Simplex Method	Related Chapters of Course Sources
7	Mid-term Exam	Related Chapters of Course Sources
8	Simplex Method- Maximization model applications	Related Chapters of Course Sources
9	Sensitivity analysis and applications	Related Chapters of Course Sources
10	Transportation models: The northwest corner method, the minimum cell cost method, Vogel's Approximation Model (VAM)	Related Chapters of Course Sources
11	Transportation models application	Related Chapters of Course Sources
12	Assignment models and its applications	Related Chapters of Course Sources
13	Decision analysis and its applications	Related Chapters of Course Sources
14	Game theory and its applications	Related Chapters of Course Sources
15	Final Exam	Related Chapters of Course Sources

ECTS / WORKLOAD TABLE

Presentation / Seminar			
Hours for off-the-classroom study (Pre-study, practice)	14	3	42
Midterm Exam	1	12	12
Final examination	1	14	14
Total Work Load			
ECTS		6	

GENERAL PRINCIPLE RELATED WITH COURSE

Dear students,

You need to be included in the flow, please follow the course of learning and using that to achieve our success you deserve, you need to practice every day on topics that are covered by the course. It takes practice reading basic and auxiliary literature that is strictly recommended. You should visit classes course I need to make an effort to visit all the professors' lectures. Your activity on the session will be assessed by your professors and the Battle active participant in the discussions that will take place during the time. Students visiting lectures for all at the end if an additional 15 points.

SOURCES

COMPULSORY LITERATURE		
No	Name of the book	Author's Name, Publishing house, Publication Year
1	Yöneylem Araştırması (Introduction to Operations Research)	1.Taha H.A., (Çeviren) Ş. Alp Baray, Şakir Esnaf, Ekin Kitabevi, (2004).
2		
3	Introduction to operations	FREDERICK S. HILLIER, GERALD j. LIEBERMAN

ADDITIONAL LITERATURE		
No	Name of the book	Author's Name, Publishing house, Publication Year
1		
2		
3		

EVALUATION SYSTEM

Underlying the Assessment Studies	NUMBER	PERCENTAGE OF GRADE
Attendance/Participation	15	% 10
Project / Event	1	%20
Mid-Term Exam	1	%35
Final Exam	1	%35
TOTAL	17	%100

ETHICAL CODE OF THE UNIVERSITY

In case students are cheating on exams or preparation the same, it is not making reference to the source to be used in studies, as for example in assignments, projects and presentation (plagiarism), in accordance with legislations by Ministry of Education and Science of the Republic of Macedonia and International Vision University, apply relevant disciplinary rules. International Vision University students are expected never attempts in this kind of behavior.