Content

Course Code	Course Name	Semester	Theory	Practice	Lab	Credit	ECTS
PM546	Operational Research İn Marketing	2	3	0	0	3	7

Prerequisites	
Admission Requirements	

Language of Instruction	Turkish
Course Type	Compulsory
Course Level	Masters Degree
Objective	Course objective is to give to the student an in-depth presentation of the tools and techniques of management science as applied to real-word problems. The subject matter includes decision analysis, goal programming, forecasting, PERT/CPM, game theory and simulation models.
Content	1) Integer and mixed integer programming. 2) Multi-objective optimization and goal programming. 3) Analytic hierarchy process. 4) Markov chains, transition matrix and prediction of future state. 5) Absorbing Markov chains and resolution of Markov chain problems with the use of computers. 6) Game theory. Representation of games, applications and challenges. 7) Graph theory in management and networks. 8) Project management. Technics of PERT and CPM 9) Systems, models and simulation technics.
References	Brémaud, Pierre. Markov chains : Gibbs fields, Monte Carlo simulation and queues. Springer, New York, 1999. Forgo, Ferenc. Introduction to the theory of games: concepts , methods and applications. Kluwer Academics, Boston, 1999. Haggstrom, Olle. Finite Markov chains and algoritmic applications. Cambridge University Press, New York, 2002. Saaty, Thomas L. Models, methods, concepts and application of the Analytic Hierarchy Process. Kluwer Academics, Boston, 2001. Timor, Mehpare. Yöneylem Araştırması ve İşletmecilik Uygulamaları, İstanbul : İ.Ü. Basımevi, 2001.

Theory Topics

Week	Weekly Contents
1	Integer and mixed integer programming.
2	Integer and mixed integer programming.
3	Multi-objective optimization and goal programming.
4	Multi-objective optimization and goal programming.
5	Analytic hierarchy process.
6	Markov chains, transition matrix and prediction of future state.
7	Absorbing Markov chains and resolution of Markov chain problems with the use of computers.
8	Midterm Exam 1.
9	Game theory. Representation of games, applications and challenges.
10	Graphic solution of games. Resolution of games as linear programming models.

Week	Weekly Contents
11	Graph theory in management and networks.
12	Project management. Technics of PERT and CPM.
13	Project management. Technics of PERT and CPM.
14	Systems, models and simulation technics.