

## Content

Course Code	Course Name	Semester	Theory	Practice	Lab	Credit	ECTS
PM545	Quantitative Methods in Marketing	1	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-world problems. The subject matter includes linear programming, sensitivity analysis, distribution models, integer and mixed integer linear programming models.						
Content	1) Introduction to operational research and basic concepts. 2) Linear programming, assumptions and formulation of the model. 3) Graphical solution of a linear programming model. 4) Solution of a linear programming model- Solution of a standard maximization problem using Simplex method. 5) Solution of a linear programming model- Solution of a standard minimization problem using Simplex method. 6) Solution of a linear programming model with mixed constraints using Simplex method and special cases of a linear programming model by use of computer. 7) Sensitivity analysis. 8) Applications of a linear programming to the management problems. 9) The dual problem 10) Transportation problem and solving technics – Nord-West corner rule and stepping step method. 11) Transportation problem and solving technics – Modified distribution method and Vogel approximation method (VAM). 12) Transshipment, assignment and solving technics. 13) Travelling salesman problem						
References	Dantzig, George Bernard. Linear programming and extensions. Princeton : Princeton University Press. 1998 Darst, Richard B. Introduction to Linear Programming: Applications and extensions. New York : M. Dekker, 1991 Thie, Paul R. An introduction to linear programming and game theory. New York : Wiley, 1988. Timor, Mehpare. Yöneylem Araştırması ve İşletmecilik Uygulamaları, İstanbul : İ.Ü. Basımevi, 2001. Top, Aykut. Üretim Yönetimi, Ankara : Nobel Basımevi, 2006						

## Theory Topics

Week	Weekly Contents
1	Introduction to operational research and basic concepts. Linear programming, assumptions and formulation of the model. Graphic solution of a linear programming model.
2	Solution of a linear programming model- Solution of a standard maximization problem using Simplex method.
3	Solution of a linear programming model- Solution of a standard minimization problem using Simplex method.
4	Solution of a linear programming model with mixed constraints using Simplex method and special cases.
5	Solution of a linear programming model by use of a computer.
6	Sensitivity analysis.
7	Mid-term exam 1.
8	Applications of a linear programming to the management problems.
9	The dual problem.
10	Transportation problem and solving technics – Nord-West corner rule and stepping step method.
11	Transportation problem and solving technics – Modified distribution method and Vogel approximation method (VAM).
12	Mid-term exam 1.
13	Transshipment, assignment and solving technics.
14	Travelling salesman problem.