AYDIN ADNAN MENDERES UNIVERSITY
COURSE INFORMATION FORM

Course Title	Quantitative Methods in Logistics Management						
Course Code	LYM517		Couse Level	Second Cycle (Master's Degree)			
ECTS Credit	5	Workload	127 *(Hours)*	Theory	3	Practice	0	Laboratory	0

Objectives of the Course	This course aims at teaching a variety of methods useful in solving management problems in logistics activities so that the students can gain a quantitative foundation in basic mathematical modelling and problem solving that will be helpful in the higher level courses such as Design and Analysis of Logistics Systems and Simulation in Supply Chain and Logistics.
Course Content	The main emphasis of the course is how to model a managerial problem using mathematical modelling (Linear programming and Integer programming). Many examples from different application areas are given. Solution techniques for some special problems are discussed.
Work Placement	N/A
Planned Learning Activities and Teaching Methods	Explanation (Presentation), Discussion, Individual Study
Name of Lecturer(s)	

Assessment Methods and Criteria

Method	Quantity	Percentage (%)
Midterm Examination	1	40
Final Examination	1	60

Recommended or Required Reading

1	Course notes and reading material, Operations Research Applications and Algorithms, Wayne L. Winston, Fourth Edition, Thomson Books

Week	Weekly Detailed Course Contents	
1	Theoretical	Introduction to Modelling
2	Theoretical	Modelling with Linear Programming
3	Theoretical	Modelling with Linear Programming
4	Theoretical	Modelling with Linear Programming: Solving examples of linear programming models
5	Theoretical	Integer Linear Programming Models
6	Theoretical	Integer Linear Programming Models
7	Theoretical	Integer Linear Programming Models
8	Theoretical	Linear Programming Transportation Models
9	Intermediate Exam	Midterms
10	Intermediate Exam	Midterms
11	Theoretical	Network Optimization Models
12	Theoretical	Network Optimization Models
13	Theoretical	Network Optimization Models
14	Theoretical	Decision Making Models
15	Theoretical	Decision Making Models
16	Final Exam	Finals

Workload Calculation

Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	13	0	3	39
Reading	13	0	2	26
Midterm Examination	1	25	1	26

Final Examination	1	35	1	36
			Total Workload (Hours)	127
		[Total Workload (Hours) / 25*] = **ECTS**		5

*25 hour workload is accepted as 1 ECTS

Learning Outcomes

1	will be able to learn how to analyse complex management problems
2	will be able to learn how to apply the systems approach to complex management problems
3	will be able to solve public and private business decision making problems via linear and integer mathematical optimization models
4	will be able to solve complex mathematical models by means of computer software
5	will be able to interpret the solutions of mathematical optimization models

Programme Outcomes *(Logistics Management Interdisciplinary Master)*

1	Being able to contribute to the institution the participant works for and the logistics sector by the use of the knowledge and abilities gained during the education period; and manage change in the institution and the sector;
2	Reaching a competency about contemporary business and technology applications in the area of logistics and supply chain management and analysis and strategy development methods;
3	Being able to create opportunities by combining supply chain management with information technologies and innovative processes by the use of the interdisciplinary courses the participants take;
4	Having the ability to develop creative solutions by working on global logistics and supply chain subjects and realizing these by the use of their project management knowledge;
5	Having the knowledge, abilities and capabilities required for effective logistics and supply chain management by the use of a problem and case analysis based learning;
6	Being able to examine logistics and supply chain processes with the management science viewpoint, analyze related concepts and ideas by scientific methods;
7	If continuing to work in the academia, having the necessary information on logistics applications; if continuing to work in the sector, having the necessary knowledge on conceptual subjects;
8	Being able to specify appropriate research questions about his/her research area, conduct an effective research with the use of necessary methods and apply the research outcomes in the sector or the academia;
9	Being able to follow the changes and developments in the sector the participant works in, in order to keep his/her personal and professional competence updated and develop himself/herself when necessary;
10	Have the necessary capabilities to pursue doctoral studies in national and foreign institutions

Contribution of Learning Outcomes to Programme Outcomes *1:Very Low, 2:Low, 3:Medium, 4:High, 5:Very High*

	L1	L2	L3	L4	L5
P1	4	3	3	4	5
P2	3	3	3	2	5
P3	3	5	4	2	5
P4	2	4	4	4	4
P5		2	2	3	2
P6	4	2	2	5	3
P7	2	4	1		4
P8	2	2	4	1	3
P9	2	2	2	1	3
P10	5	4	3	4	4