



AYDIN ADNAN MENDERES UNIVERSITY COURSE INFORMATION FORM

Course Title		Applied Advanced Operations Research							
Course Code		FEK516		Course Level		Second Cycle (Master's Degree)			
ECTS Credit	5	Workload	125 (<i>Hours</i>)	Theory	3	Practice	0	Laboratory	0
Objectives of the Course		The objective of this course is to provide students with capabilities of using operational research techniques and applications,quantitative techniques for decision making, problem identification, model building and solving.							
Course Content		The concept of Operational Research topics such as problem definition, model building, linear programming, transportation - assignment problems, network problems and project management with CPM / PERT methods will be examined to build the models and their solution techniques.							
Work Placement		N/A							
Planned Learning Activities and Teaching Methods				Explanation (Presentation), Case Study, Problem Solving					
Name of Lecturer(s)									

Assessment Methods and Criteria

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

Recommended or Required Reading

1	Yöneylem Araştırması, Ahmet Öztürk, Ekin Kitabevi, 1997
2	Yöneylem Araştırması, Hamdy A. Taha, Literatür Yayıncılık/İşletme ve Ekonomi Dizisi, 2000
3	Yöneylem Araştırması Nicel Karar Teknikleri, Prof. Dr. Şule Özkan, Nobel Yayın Dağıtım, 2005

Week	Weekly Detailed Course Contents	
1	Theoretical	The structure of decision problems, problem identification and model building
2	Theoretical	Introduction to linear programming and the graphical solution method
3	Theoretical	Solution of linear programming problems with Simplex method (I)
4	Theoretical	Solution of linear programming problems with Simplex method (II)
5	Theoretical	The realization of duality and sensitivity analysis after the optimal solution
6	Theoretical	Computer application (the solution of linear programming and sensitivity analysis)
7	Theoretical	Integer programming: Gomory cutting plane method and Branch and bound method
8	Intermediate Exam	Midterm
9	Theoretical	Transportation models and solution algorithms
10	Theoretical	Assignment models and solution algorithms
11	Theoretical	Transshipment models and solution algorithms
12	Theoretical	Network analysis; creation and solution of network models
13	Theoretical	Network analysis; CPM method
14	Theoretical	Network analysis; PERT method
15	Theoretical	Time-cost relationship in the planning of the project and acceleration of the project
16	Final Exam	Final Exam

Workload Calculation

Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	14	2	3	70
Lecture - Practice	7	2	2	28
Midterm Examination	1	10	1	11
Final Examination	1	15	1	16
Total Workload (Hours)				125
[Total Workload (Hours) / 25*] = ECTS				5

*25 hour workload is accepted as 1 ECTS



Learning Outcomes

1	Explains econometric concepts
2	Models problems using the knowledge of Mathematics, Statistics, and Econometrics
3	Acquires the ability to analyze, benchmark, evaluate and interpret at conceptual levels to develop solutions to problems
4	Gives a consistent estimate for the model and analyzes and interprets its results
5	Questions traditional approaches and their implementation and develops alternative study programs when required

Programme Outcomes (*Econometrics Master*)

1	Understanding the concept of econometric
2	Ability to estimate econometric models
3	Test to the estimated reliability of the econometric model
4	Learning time series analysis
5	Recognition of financial assets and analysis that estimates the decisions of economic units
6	Be able to use econometric methods developed specifically for analysis of financial data
7	To be able to use computer programs needed in the field financial economics as well as information and communication technologies in advanced levels
8	Provision of the information that will be base for the econometric applications on money theories, theories of international trade and finance
9	Considering a scientific research, to be able to make a profound literature research, analysis, estimations and reporting findings in a scientific work

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	5	5	4	4	4
P2	5	5	4	5	2
P3	4	4	4	5	4
P4	4	4	3	2	5
P5	2	3	2	5	3
P6	5	5	5	5	5
P7	3	5	4	3	4
P8	4	4	2	4	5
P9	4	2	5	3	3

