



AYDIN ADNAN MENDERES UNIVERSITY COURSE INFORMATION FORM

Course Title		Quantitative Analysis Techniques							
Course Code		ECO413		Course Level		First Cycle (Bachelor's Degree)			
ECTS Credit	6	Workload	150 (Hours)	Theory	3	Practice	0	Laboratory	0
Objectives of the Course		The aim of this course is to provide students with theoretical and practical knowledge about quantitative decision methods, which are widely used in the field of economics and finance.							
Course Content		Decision Analysis, Linear Programming, Transportation, Assignment, and Network Models, Integer Programming, Goal Programming, and Nonlinear Programming...							
Work Placement		N/A							
Planned Learning Activities and Teaching Methods				Explanation (Presentation), Demonstration, Discussion, Individual Study, Problem Solving					
Name of Lecturer(s)		Lec. Zümre ÖZDEMİR GÜLER							

Prerequisites & Co-requisites

ECTS Requisite	105
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Assessment Methods and Criteria

Method	Quantity	Percentage (%)
Midterm Examination	1	40
Final Examination	1	70

Recommended or Required Reading

1	Osman HALLAÇ - Kantitatif Karar Verme Teknikleri, Alfa Yayınları Ders Kitapları.
2	Alptekin ESİN - Yöneylem Araştırmasında Yararlanılan Karar Yöntemleri, Gazi Kitabevi.
3	Paul R. THIE, Gerard E. KEOUGH – An Introduction to Linear Programming and Game Theory, John Wiley and Sons.
4	David R. ANDERSON, Dennis J. SWEENEY, Thomas A. WILLIAMS, Jeffrey D. CAMM, Kipp MARTIN - Introduction to Management Science: Quantitative Approaches to Decision Making, South Western College Publishing.

Week	Weekly Detailed Course Contents	
1	Theoretical	Introduction to Quantitative Analysis
2	Theoretical	Decision Analysis
3	Theoretical	Linear Programming: Modeling
4	Theoretical	Linear Programming: Graphical Methods
5	Theoretical	Linear Programming: The Simplex Method
6	Theoretical	Linear Programming: Sensitivity Analysis and Duality
7	Theoretical	Transportation, Assignment, and Network Models
8	Intermediate Exam	Midterm Examination
9	Theoretical	Integer Programming, Goal Programming, and Nonlinear Programming
10	Theoretical	Project Management: PERT/CPM
11	Theoretical	Waiting Lines and Queuing Theory Models
12	Theoretical	Simulation
13	Theoretical	Game Theory
14	Theoretical	Statistical Quality Control
15	Theoretical	General Assessment
16	Final Exam	Final Examination
17	Final Exam	Final Examination

Workload Calculation

Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	14	0	3	42
Individual Work	14	0	5	70
Midterm Examination	1	15	1	16



Final Examination	1	21	1	22
Total Workload (Hours)				150
[Total Workload (Hours) / 25*] = ECTS				6
*25 hour workload is accepted as 1 ECTS				

Learning Outcomes

1	Gain knowledge about the basic numerical methods used in the fields of economy and finance.
2	Is able to demonstrate both mathematical and statistical techniques and apply them in the economic context.
3	Is able to make an econometrical model and choose the appropriate method to estimate it and test the hypothesis and select the best model.
4	Gains the ability to construct a mathematical model of decision-making problems, to search for the most appropriate solution and to solve by formulate it.
5	Gains the ability to use computer software such as Excel, SPSS, R etc. to research the solution of mathematical models.

Programme Outcomes (Economics)

1	It defines and evaluates the basic economic concepts, theories, and methods.
2	It offers a basic level of policy proposals towards current economic problems.
3	It analyzes in the context of economic and social events in a historical perspective.
4	It explains the role of economic actors (such as government, company, or household) in the economy.
5	It follows national and international economic indicators and developments and it uses economic knowledge and methods in different areas.
6	It provides methods, tools and techniques necessary for the modelling and analysis of economic data and evaluates outcomes accordingly.
7	It defines economic systems, decision-making, policies and problems and it provides feedback about them.
8	It benefits from other disciplines that contribute to economic basis and holds a basic knowledge of these disciplines.
9	It explains and comments on economic growth, development and productivity problems on basic grounds.
10	It provides sufficient know-how in sub-branches such as public economics, industry, agriculture, environment and natural resources, labor, knowledge and ownership of the economy, international finance, money, in political economy and econometrics.
11	It defines and evaluates the concept of business on basic grounds.
12	It provides a sufficient level of legal know-how that may be demanded from high skill labor in both public and private sectors.
13	It defines the role of innovation, creativity and technology in the dynamic global economy.
14	It shows skills that will be useful for future employment opportunities and the working environment.
15	It considers science as a rational individual with professional and ethical responsibility.

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

	L1	L2	L3	L4
P1	3	3	3	3
P2	2	2	2	2
P5	3	4	3	4
P6	5	5	5	5
P7	2	2	2	2
P8	3	4	3	4
P10	4	5	4	5

