



COURSE / MODULE / BLOCK DETAILS

ACADEMIC YEAR / SEMESTER

Offered by: Endüstri Mühendisliği			
Course Title: QUANTITATIVE TECHNIQUES IN INDUSTRIAL ENGINEERING		Course Org. Title: QUANTITATIVE TECHNIQUES IN INDUSTRIAL ENGINEERING	
Course Level: Lisans		Course Code: IND 4917	
Language of Instruction: İngilizce		Form Submitting/Renewal Date 19/02/2013	
Weekly Course Hours: 3		Course Coordinator: DOÇENT BİLGE BİLGEN	
Theory	Application	Laboratory	National Credit: 3
3	0	0	ECTS Credit: 4



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Offered to:

Course Status: Compulsory/Elective

Name of the Department:

Industrial Engineering

Elective Course

Wire: 0 232 301 72 15

Fax: 0 232 301 72 10

Access: <http://www.eng.deu.edu.tr>

Address: Dokuz Eylül Üniversitesi Tınaztepe Yerleşkesi 35160 Buca/İZMİR E-mail: muhendislik@deu.edu.tr



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Instructor/s:

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Course Objective:

The primary purpose of this course is to provide students with a more detailed understanding of various operations research techniques, their underlying assumptions, the procedures for implementing them, and how to interpret them in the context of industrial engineering operational situations.

Learning Outcomes:

- 1 An ability to define application areas of quantitative techniques
- 2 An ability to use optimization techniques in industrial engineering decision making
- 3 Develop skills in structuring, solving analyzing industrial engineering problems
- 4 An ability to solve design optimization problems via mathematical programming models
- 5 An ability to use mathematical programming languages such as ILOG OPL studio in the solution phase

Learning and Teaching Strategies:

The presentations which are prepared by using books, articles and proceedings as well as class board will be used in the scope of the course programme.
Theoretical Lectures, Case studies and Projects

Assessment Methods:

Name	Code	Calculation formula
Vize	VZ	
Ödev	OD	
Final	FN	
Bütünleme Notu	BUT	
BNS	BNS	$VZ*035+D *015+FN * 050$
Bütünleme Sonu Başarı Notu	BBN	$VZ*035+D *015+BUT * 050$

Further Notes about Assessment Methods:



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Assessment Criteria:

Textbook(s)/References/Materials:

Textbook(s): Operations Research: Applications and Algorithms, Cengage Learning, Wayne L. Winston

Supplementary Book(s):

Quantitative Analysis for Management, Pearson, Prentice Hall, 2009, Render B., Stair, R.M., Hanna, M.E.

An Introduction to Management Science Quantitative Approaches to Decision Making, South-Western Cengage Learning

Course Policies and Rules:

Contact Details for the Instructor:

Office Hours:

Course Outline:

Week	Topics:	Notes:
1	Introduction	
2	Decision Theory	
3	Advanced Linear Programming Applications	
4	Advanced Linear Programming Applications	



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5	Advanced Integer Programming Applications
6	Advanced Integer Programming Applications
7	Network Model Formulations
8	Convex and Concave Functions
9	Nonlinear Programming
10	Mid Term Exam
11	Nonlinear Programming
12	Stochastic Programming Applications
13	Presentations
14	Presentations



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ECTS Table

Course Activities	Number	Duration (hour)	Total Work Load (hour)
In Class Activities			
Lectures	14	3	42

Exams

Final	1	1,5	2
Midterm	1	1,5	2

Out Class activities

Preparations before/after weekly lectures	14	2	28
Preparation for midterm exam	1	10	10
Preparation for final exam	1	12	12
Preparing presentations	1	10	10
Total Work Load (hour)			106
ECTS Credits of the Course= Total Work Load (hour) / 25			4