

**İSTANBUL KÜLTÜR UNIVERSITY**  
**FACULTY OF ENGINEERING AND ARCHITECTURE**  
**Department of Industrial Engineering**

**Spring 2011**

**IE 421 OPERATIONS RESEARCH I**

**Instructors** : Prof. Tülin Aktin : Assist. Prof. Fadime Üney-Yüksektepe  
☎ (212) 498 4252 ☎ (212) 498 4874  
✉ t.aktin@iku.edu.tr ✉ f.yuksektepe@iku.edu.tr

**Teaching Assistant** : İlayda Karabulut & Kayahan Kaya

**Lecture Hours** : Wednesday 10:00-12:45 @ Amfi Z-A1 (Sessions A+B)  
Wednesday 14:00-16:45 @ Amfi Z-A2 (Sessions C+D)

**Problem Sessions** : Thursday 15:00-16:45 @ 2-B-11/13 / Lab 239 (Practical A)  
Thursday 17:00-18:45 @ 2-B-11/13 / Lab 239 (Practical B)  
Friday 09:00-10:45 @ 2-B-11/13 / Lab 239 (Practical C)  
Friday 11:00-12:45 @ 2-B-07/09/ Lab 239 (Practical D)

**Course Outline**

1. Introduction to Operations Research
2. Linear Programming Models and Model Formulation
3. Graphical Solution Procedure
4. Simplex Method
5. Duality
6. Dual Simplex Method
7. Sensitivity Analysis
8. Transportation Problem
9. Transshipment Problem
10. Assignment Problem
11. Network Models
12. Integer Programming

**Grading**

Quizzes	10%	
Midterm I	25%	(Week of March 14, 2011; the exact date will be announced later!)
Midterm II	25%	(Week of April 25, 2011; the exact date will be announced later!)
Final	40%	

**Course Materials** @ <http://ie.iku.edu.tr/coursehome.asp?CourseID=563&PeriodID=45>

**Reference Books**

- Winston, Wayne L., Operations Research: Applications and Algorithms, Fourth Edition, Brooks/Cole-Thomson Learning, 2004.
- Taha, Hamdy A., Operations Research: An Introduction, Ninth Edition, Prentice-Hall International, Inc., 2011.
- Hillier, Frederick S. and Lieberman, Gerald J., Introduction to Operations Research, Ninth Edition, McGraw-Hill, 2009.