

## IE 202: Operations Research I

Fall 2017, Ilhan OR

### Course Description

The purpose of this course is to introduce the most widely used deterministic operations research methodologies. The course will start with basic linear programming then move into duality, transportation and assignment problems. Integer programming (cutting plane and branch and bound solution procedures) and network models will also be introduced. Popular OR software will be highlighted and used in assignments.

### Course Outline

1. Week Sept.18 Intro to O.R. and LP Modeling
2. Week Sept.25 LP: Graphical Solution Procedure  
LP: Model Formulation
3. Week Oct. 02 LP: Simplex Method
4. Week Oct. 09 LP: Starting Methods
5. Week Oct. 16 LP: Matrix Form of Simplex, Revised Simplex  
LP: Duality
6. Week Oct.23 LP: Dual Simplex  
LP: Sensitivity Analysis
7. Week Oct.30 Midterm  $\neq$  1  
LP: Sensitivity Analysis
8. Week Nov.06 The Transportation Problem  
The Transshipment Problem
9. Week Nov.13 The Assignment Problem
10. Week Nov.20 Network Problems
11. Week Nov.27 Network Problems  
Midterm  $\neq$  2
12. Week Dec.04 Integer Programming (IP): Modelling  
IP: The Cutting Plane Method
13. Week Dec.11 IP: The Branch and Bound Method  
The Bic Mac Problem

### Textbooks

- i) Introduction to Operations Research (Ilhan Or, Lecture Notes, 2017)
- ii) Operations Research, An Introduction (Hamdy Taha, 10<sup>th</sup> Edition, Prentice Hall)

### Teaching Asistant:

TA:

Room:

e-mail:

Web Page: EnrollKey:

You may reach the course website at this address and register using your username & password

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|----------------|-----------------------|---------------------------------|
| <u>Grading</u> | 1st Midterm % 20 - 24 | Assignments (Quizzes) % 10 - 15 |
|                | 2nd Midterm % 20 - 24 | FINAL % 40 - 47                 |

Time&Room: TT ThThF 34 34 3 M2230 M2230 M3120 M3120 M2200