

**Antalya Bilim University**  
**Department of Economics, Econ 1312**  
**Operations Research**  
**Fall 2020**

Class Time & Place: Online (Unless announced otherwise)

You may contact me via e-mail

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Welcome to the course. Operations Research takes tools from different disciplines such as mathematics, statistics, economics, psychology, engineering etc. and combines these tools to make a new set of knowledge for decision making. Today, O.R. became a professional discipline which deals with the application of scientific methods for making decision, and especially to the allocation of scarce resources. The main purpose of O.R. is to provide a rational basis for decisions making in the absence of complete information, because the systems composed of human, machine, and procedures may not have complete information.

**Course book:**

Operations Research: An Introduction, Global Edition, 10/E by Hamdy A. Taha, University of Arkansas  
Students are responsible to get a hard copy of the course book.

**Academic Honesty and Plagiarism**

Plagiarism and cheating is strictly forbidden. Each task you submit must be totally yours. Otherwise, University rules and regulations will be applied.

**Attendance**

Attendance is highly encouraged in Econ 1312. Actual physical presence (with any resulting verbal interaction between instructor and student) can be as necessary to understanding the course's subject matter as completing homework assignments and exams. For online lectures you may also find the saved lecture on LMS. Do not forget that this course requires your effort on regular basis. Otherwise it will be very difficult to catch up if not impossible. Do not miss any classes unless you have a very serious, legitimate reason! If you do miss any classes get lecture notes from a friend as there might be

changes in lecture plans and explorations. In addition, please contact me for any possible blind spot. If you miss any exam, be aware that you need to submit legitimate excuse not to get zero from the exam.

### **Promptness**

Make sure that you come to class fairly enough before the instructor comes. Entering the classroom/LMS after the instructor's presentation has started can be distracting both to the instructor as well as to other students.

### **Other Class Disruptions**

Unless there is an emergency stay seated during the lecture. Avoid distracting movements, talking to each other, eating, drinking and electronics. You need to pay attention to the lecture. Keeping self-discipline is still important during online lectures.

### **Assessment Criteria:**

- 1) **Attendance and participation (10%)**
- 2) **Midterm (40%):** Students are responsible for all class material covered until the midterm exam.
- 3) **Final exam (50%):** This exam is cumulative covering all units and topics studied throughout the course, but emphasis will be on the topics covered after the midterm.

Please note that you are required to receive a grade of 50 out of 100 to be able to pass the course!

The assessment criteria might change due to pandemic regulations.

### **Course Schedule**

**WEEK 1** Introduction to the Course

**WEEK 2** Defining the Model

**WEEK 3** Two Variable LP Model

**WEEK 4** Graphical LP solution and Computer Solution with Solver

**WEEK 5** LP Applications

**WEEK 6** Algebraic Solution to the LP Model

**WEEK 7** The Simplex Method

**WEEK 8** Midterm Exam

**WEEK 9** M-Method

**WEEK 10** Two-Phase Method

**WEEK 11** Investigation of the Solution when there is no Single, Finite, Feasible Solution

**WEEK 12** Sensitivity Analysis

**WEEK 13** Sensitivity Analysis

**WEEK 14** Review