

Antalya Bilim University
Department of Economics, Econ 1312
Operations Research
Fall 2021

Class Time & Place: TBA
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(A2-31)

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. 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 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.

Assessment Criteria:

- 1) **Attendance and Participation (10%):** Students are responsible for all class material covered until the midterm exam.
- 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!

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