

IE 255
Probability for Industrial Engineers

Instructor : Refik Güllü

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Lecture Hours : Monday 10:00-12:00, Wednesday 15:00-17:00

Office Hours: Wednesday 13:30-14:30, Thursday 13:00-14:00

Teaching Assistant: Nihan Karali (nihan.karali@boun.edu.tr)

Office Hours: Tuesday, 13:00-14:00, Wednesday 11:00-12:00.

This course is intended as an elementary introduction to the theory of probability, probabilistic models, and decision making under uncertainty. At the end of the course, the students should be equipped with basic skills for building and analyzing IE models that involve uncertainties. Through this end we'll discuss IE related models and applications as a supplement of the course. This course also provides necessary background for the statistical decision making and data analysis concepts that will be covered in IE 256 (Statistics for Industrial Engineers). The main outline of the course is as follows.

Introduction (0.5 week)

A review of sets (0.5 week)

Definition and axioms of probability (1.5 week)

Conditional probability and independence (1.5 week)

Random variables (1 week)

Expected values and higher moments (1 week)

Important discrete and continuous random variables (2 weeks)

Functions of a random variable (1 week)

Joint probability distributions and conditional expectations (1 week)

The normal distribution and the Central Limit Theorem (1 week)

Sampling distributions (1 week)

Textbook : Walpole, Myers, Myers, and Ye, "Probability and Statistics for Engineers and Scientists", 8th Edition, Pearson. (Class attendance is important, we'll cover stuff not contained in the book)

Grading: Quizzes (10 %), Midterm 1 (20 %), Midterm 2 (30 %), Final Exam (40 %).

Midterm Dates: Midterm 1: October 28, 2009, Midterm 2: November 25, 2009.

Quiz Dates: October 21, 2009, November 18, 2009, December 16, 2009.