MS 302
Stochastic Models in Operations Research

Kerem Bülül
Manufacturing Systems & Industrial Engineering
Sabancı University
Spring 2013

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Office Hours: M 14:30-15:30, T 15:30-16:30
Lecture Hours: M 15:40-17:30 (FENS G032), T 13:40-15:30 (FENS G032)

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Office Hours: The TAs will hold their office hours in FENS 1021.
Monday: 09:40-11:30 (Nursen) 11:40-13:30 (Mert)
Tuesday: 09:40-11:30 (Halil)
Wednesday: 14:40-16:30 (Gulcin)
Thursday: 11:40-13:30 (Artun)
Recitation Hours:
Section A1: W 17:40-19:30 (FENS L055)
Section A2: W 17:40-19:30 (FENS L062)
Course Description and Objectives
The mission of this course is to continue the study of modeling and solution of decision problems using operations research techniques with a particular emphasis on stochastic aspects.

Course Outline
i. Markov Chains
   a. Discrete time Markov chains
   b. Continuous time Markov chains
ii. Queueing Theory
   a. Queueing models based on the birth-and-death process
   b. Other queueing models
iii. Dynamic Programming
   a. Deterministic dynamic programming
   b. Probabilistic dynamic programming
iv. Markov Decision Processes

Recitations
During the recitations, we will cover some of the assignment solutions in detail, and additional questions will be solved. If necessary, topics covered previously in class may be reviewed.

Grading
1. The assignments will not be graded. We strongly recommend that you complete the assignments individually. It will pay off in the exams.
2. Quizzes (10%). There will be a few pop quizzes during the semester. The level of the quiz questions will be strongly correlated with the homework questions. That is, do your assignments regularly and properly!
3. Midterms (50%). There will be 2 midterm exams during the semester. The dates are April 10 and May 15. Both exams are scheduled for 17:40-20:30.
4. Final (40%).
5. There will be a single comprehensive makeup exam after the final. Your makeup grade will replace your missing grade(s). NO medical report is required to attend the makeup if you miss an exam.
6. You may opt for taking the makeup exam even if you do NOT miss any of the midterms or the final. In this case, the average of your original final grade and the makeup grade will determine your final grade.
Textbook


Books on Reserve


SUCourse

All content, assignments, announcements, etc., will be administered through SUCourse.

1. Follow all important dates pertaining to this course (exam dates, assignment deadlines) under “Schedule.”
2. All lecture and recitation notes and assignment solutions will be available under “Resources.”
3. Assignment descriptions and associated files will be provided under “Assignments.”