

ISyE 3232

Probabilistic Operations Research

Fall 1996

Administrative Info

Instructor: Anton J. Kleywegt
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Teaching Assistant: To be announced

Class Room: IC211
Class Times: Tuesdays & Thursdays 3:00–4:30pm

Description:

An introduction to models and techniques for studying systems with uncertainties. The objectives are

- to develop an intuitive understanding of a variety of models;
- to understand the assumptions, limitations and suitable applications of these models;
- to develop skill in applying the techniques to solve problems.

Prerequisites:

Probability at the level of ISyE 3027. Those who are rusty, should master basic probability a.s.a.p. The sooner the better!

Textbook:

- Feldman, R.M. and Valdez-Flores, C., *Applied Probability and Stochastic Processes*, PWS Publishing Company, Boston, 1996.

or

- Ross, S.M., *Introduction to Probability Models*, 4th or 5th edition, Academic Press, Boston, 1993.

Topics Covered:

- Basic Probability
- Discrete-Time Markov Chains
- Poisson Processes
- Continuous-Time Markov Chains
- Some applications; an introduction to Queueing Theory, Inventory Theory, Markov Decision Processes

Grading:

Grades will be assigned as follows:

- Homework: 15%
- Quizzes: 15%
- Midterm exam 1: 20%
- Midterm exam 2: 20%
- Final exam: 30%

Homework:

Homework will be assigned approximately once a week. Late homework will be accepted only in case of unavoidable occurrences, such as illness or death in the family. Students are encouraged to discuss homework and learn from each other, but each student must submit his/her own work. You should start working on each homework early, that way you will have time to ask (and understand) questions in class before the homework is due. Any queries on homework grades must be submitted in writing to the instructor, together with the homework in question.

Quizzes:

Quizzes will cover material discussed in class, and especially problems such as those assigned in homework. It is therefore in your best interest to make sure you understand the solution of the homework problems well. Quizzes may be given without prior notice.

Exams:

Exams will cover material discussed in class, as well as homework and quizzes. The final exam will be comprehensive. Exams will be closed book. Any queries on exam grades must be submitted in writing to the instructor, together with the exam in question. Make-up exams will be scheduled only in case of unavoidable occurrences. It is your responsibility to take the exams at the designated times. Travel arrangements are not sufficient reason to warrant a make-up exam or an incomplete grade.