

Course Outline

A continuation of IEOR 6711, Stochastic Models I, (but covering a different set of topics), the focus of this course is on those stochastic processes and models that are fundamental to the study of queueing, production-inventory, and other engineering and service systems. The emphasis is on methodologies that are essential to proving theorems as well as solving problems.

Topics:

- Martingales: optional sampling, inequalities, convergence theorems.
- Brownian motion, and related stochastic calculus.
- Stationary processes and ergodic theory.

Text and References:

Lecture notes will be distributed.

S. Karlin and H. Taylor, *A First Course in Stochastic Processes*, Academic Press, 2nd edition, 1975.

S. Ross, *Stochastic Processes*, John Wiley, 2nd edition, 1996.

R. Durrett, *Probability: Theory and Examples*, Duxbury Press, 2nd edition, 1996.

Evaluation:

Homework 20%, Midterm (March 6/8) 40%, Final (May 1/3) 40%.

Office Hours:

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