Syllabus

Introduction to Stochastic Processes

Lectures: TTh, 10:10-12:05, Amundson Hall 162
Instructor: Nicolai Krylov, VinH 225, tel. 625-8338, nkrylov@umn.edu, http://www-users.math.umn.edu/~nkrylov
Office hours: TTh, 13:25-14:15
Prerequisites: Math 5651 or Stat 5101
Final examination: 8:00-10:00, Saturday, May 9

We intend to cover essentially the whole book. The main topics are: Markov chains (Definitions, Classification, Limit behavior), Poisson process, Renewal theory (Law of large numbers, Applications to queueing theory), Continuous-time Markov chains (Limiting behavior, Queueing chains), Martingales (Conditional expectations, Optional stopping theorem), Mathematical finance (Option pricing, The Black-Scholes formula).

Homeworks and Midterms: The intention is to have two midterms and 7 homework assignments. The dates will be specified later.

The total possible score on each HW assignment will be 36. The best 6 assignments will be chosen for each student, giving a total possible score of 216. The raw score will be then divided by 6 to give a net score.

Evaluation: The grade for the semester will be based on 144 possible points, 72 of which will be on the final examination. The other 72 will come from two possible 36-points contributions, one being the net score for homeworks and another being one half of the sum of the scores for two 115-minute midterm examinations.