

Stochastic Processes (MA494)

Second Semester 2009/2010

Lecture times and locations

- Tuesday 1400-1500 AM104
- Wednesday 1400-1500 AC203

NOTE: lecture rooms are in two different buildings!

Course lecturer

- Milovan Krnjajić
office: 205 Aras de Brun
email: milovan.krnjajic@nuigalway.ie
phone: 091 49 2327
office hours: Wed 1600-1700 or by appointment

Course web page

- All information will be communicated through the Blackboard or in the class

Course description

- The goal of the course is to introduce the main ideas and methods of stochastic models having in view applications to finance. We shall cover the following topics: a review of probability theory; examples of stochastic processes; simple random walks; discrete state, discrete time Markov chains; discrete state, continuous time Markov chains; Poisson processes; Martingales;

Course work and examination

- Continuous assessment, including homework assignments and in-class tests, will be worth (about) 20% of the final mark. Examination will be according to the University rules and schedule.

Reference books

- S. Ross, *Introduction to Probability Models*, Academic Press 1996.
- A. Papoulis, U. Pillai, *Probability, Random Variables and Stochastic Processes*, MacGraw Hill, 2002.
- Hoel, Port, and Stone, *Introduction to Stochastic Processes*, Houghton Mifflin, 1972.
- C. Grinstead and L. Snell, *Introduction to Probability*, American Mathematics Society, 1997.
NOTE: a version of the book available online at
http://www.dartmouth.edu/~chance/teaching_aids/books_articles/probability_book/book.html
- R.G. Gallager, *Discrete Stochastic Processes*, Kluwer, 1996.
- G. Grimmett and D. Stirzaker, *Probability and Random Processes*, Oxford University Press, 2001.
- G. Lawler, *Introduction to Stochastic Processes*, Chapman & Hall, 1995.