Stochastic Modeling

Description. This is an introduction to stochastic processes. Topics include: introduction to mathematical probability theory; filtrations and stopping times; Markov processes and martingales in discrete and continuous time; Poisson processes; Brownian motion.

Prerequisites. Undergraduate level probability theory.

Textbooks. There are two required textbooks for the course:

- *Markov Chains*, by J. R. Norris, Cambridge University Press, 1997.
- *Stochastic Calculus and Financial Applications*, by J. M. Steele, Springer, 2001.

The text by Steele is typically also used for ORF 527.

Grading. A homework set will be due every two weeks. There will also be a midterm and a final exam. The final grade breakdown is: homework 40%; midterm 20%; final 40%.

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