

Random Processes

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This is an advanced module in probability, introducing various probability models used in physical and life sciences and economics. It serves as an introduction to stochastic modelling and stochastic processes. It covers discrete time processes including Markov chains and random walks, and continuous time processes such as Poisson processes, birth-death processes and queueing systems. It builds on previous probability modules but needs no background in statistics; some experience of linear algebra is also desirable.

1.

Taylor, Howard M., Karlin, Samuel. An introduction to stochastic modeling. 3rd ed. San Diego: Academic Press; 1998.

2.

Norris JR. Markov chains [Internet]. 1st pbk. ed. Vol. Cambridge series on statistical and probabilistic mathematics. Cambridge, UK: Cambridge University Press; 1998. Available from: <http://catdir.loc.gov/catdir/toc/cam027/96031570.html>