Reference: https://iitk.ac.in/math/index.php/2014-05-21-10-30-47/courses (MTH 412)

Syllabus: Pre-requisite: MSO 201, None for M.Sc. 2 yr Stats

Definition and classification of general stochastic processes. Markov Chains: definition, transition probability matrices, classification of states, limiting properties. Markov Chains with Discrete State Space: Poisson process, birth and death processes. Renewal Process: renewal equation, mean renewal time, stopping time. Markov Process with Continuous State Space: Introduction to Brownian motion.

Reference materials:

1. Sheldon M Ross: Stochastic Processes, John Wiley and Sons, 1996.
2. S Karlin and H M Taylor: A First Course in Stochastic Processes, Academic Press, 1975.

Credits: 11