SUBJECT NO-MA41031, SUBJECT NAME- STOCHASTIC PROCESSES IN FINANCE

LTP- 3-1-0,CRD- 4

SYLLABUS :-

Definition and classification of stochastic processes, Poisson process, Birth and death process, Markov process in discrete time, random walks, gambler s (ruin), first return probabilities. Diffusion Processes - Brownian motion (introduction), Weiner process, Simulation of Brownian motion, Brownian Bridge, scaling symmetry, Brownian motion with drift, waiting times, geometric Brownian motion, applications in financial modelling. Introduction to Martingales. Stochastic Calculus - stochastic differential equations, stochastic integral (Ito s formula), applications in financial modelling.