Math 4222 Stochastic Processes II

Math 4222 is not taught on a regular basis and is currently inactive.

Stochastic Processes II

Department: MATH
Course Number: 4222
Hours - Lecture: 3
Hours - Lab: 0
Hours - Recitation: 0
Hours - Total Credit: 3
Typical Scheduling: Typically every odd spring
Description:
Renewal theory, Poisson processes and continuous time Markov processes, including an introduction to Brownian motion and mart
Prerequisites:

Math 4221

Course Text:

At the level of *Introduction to Stochastic Processes*, Lawler, 2nd edition or *Introduction to Probability Models*, Ross, 10th edition

Topic Outline:

Introduction to Renewal Theory Renewal Theorem, Wald's Theorem, applications in random walk and use of generating functic especially for nonsymmetric walks
Introduction to counting processes especially the Poisson process Renewal counting process and renewal time process Continuous time Markov chains (jump processes) Birth and death process Reversed process and applications Brownian motior process) Introduction to second order theory Transformation of Gaussian processes Stochastic differential equations Introductic martingales