Syllabus Draft for MATH 573

Applied Probability and Stochastic Processes

Books for Reference:

1. N. C. van Kampen, Stochastic Processes in Physics and Chemistry.
2. B. Oksendal, Stochastic Differential Equations, An Introduction with Applications

Topics:

1. General info and examples of stochastic processes
2. Markov processes
3. Queues and renewal processes
4. Brownian motion
5. Stochastic Integrals and Ito Formula
6. SDEs and Diffusions