Tentative outline

1. Brownian motion

References: Stochastic calculus notes, Breiman (*Probability*), Karatzas and Shreve (*Brownian Motion and Stochastic Calculus*)

2. Stochastic calculus

References: Stochastic calculus notes, Karatzas and Shreve

3. Applications

References: Stochastic calculus notes, Karatzas and Shreve, Revuz and Yor (*Continuous Martingales and Brownian Motion*)

4. Weak convergence and invariance principles

References: Bass (*Probabilistic Techniques in Analysis*), Billingsley (*Convergence of Probability Measures*), Breiman

5. Markov processes

References: Loève (*Probability Theory*), Blumenthal and Getoor (*Markov Processes and Potential Theory*)