

**P-Exam Preparation**  
**June 2019**

**Tentative Course Outline** The weekly coverage might change as it depends on the progress of the class. However, you must keep up with the reading assignments.

**Week 1.**

- Session 1: Probabilities, Definitions and Properties & Conditional probability and independence.
- Session 2: Bayes Theorem.
- Session 3: Random Variables & Moment Generating Functions.
- Session 4: Chebyshevs Inequality & Univariate Transformations.

**Week 2.**

- Session 5: Discrete Random Variables (Part 1).
- Session 6: Discrete Random Variables (Part 2).
- Session 7: Discrete Random Variables (Part 3).
- Session 8: Continuous Random Variables (Part 1).

**Week 3.**

- Session 9: Continuous Random Variables (Part 2).
- Session 10: Continuous Random Variables (Part 3).
- Session 11: Joint Distributions & Marginal Distributions.
- Session 12: Conditional Distributions & Independence of random variables.

**Week 4.**

- Session 13: Covariance and coefficient of correlation & Joint moment generating functions & Multi-variate transformations.
- Session 14: Multinomial & Bivariate Uniform distributions.
- Session 15: Bivariate Normal distribution & Order Statistics & Insurance and Risk management.
- Session 16: Review.