

## Second Midterm – Information

PLACE AND TIME: Thursday, November 19, 11:00, VV B211 (our usual classroom)

WHAT'S ON THE TEST?

- All material covered in weeks 5-11 of the course, everything on assignments 6-10. (Read the list of covered topics on the course web site for a more detailed list!) You should also know everything covered up to the first midterm. (See the corresponding list on the course website.)
- All material covered in the following sections of the textbook: 4.4-4.6, 5.1-5.3, Chapter 6-7 (what we covered in class) and Sections 8.1-8.3, 9.1, 10.1-10.2 (only the parts about discrete random variables)
- You should be able to solve problems related to the following material (not an extensive list!):
  - Expectation and variance of random variables (E.g. review problems from Chapter 4: 5, 7, 9, 10)
  - Recognizing special discrete random variables (Bernoulli, binomial, Poisson, negative binomial, hypergeometric), computing expectations and variances, using the Poisson approximation of binomial random variables, the Poisson process (E.g. all the review problems from Chapter 5)
  - The basic definitions and ideas about continuous random variables (density function, computing expectations), uniform, normal and exponential variables (E.g. review problems from Chapter 6: 2, 4, 5 and Chapter 7: 1, 5, 12)
  - Joint probability mass function of two or more random variables, computing marginals, conditional probability mass functions, expectations, working with independent random variables (E.g. review problems from Chapter 8: 1, 2, 3, 4, 10 and Chapter 9: 1, 2, 5)
  - Computing the expectation of a sum, computing expectations of 'complicated random variables' by rewriting them as sum of simpler ones, covariance of random variables (E.g. review problems from Chapter 10: 1, 9, problems from Assignment 10.)