STAT 305  Fall 2016

Final Exam Preparation

Logistical details:
- Date/time
  - Wed Dec 14 or Fri Dec 16, 7:10–10am
- Coverage
  - Roughly 40% on newer material
    - Handouts 15-16, HW 15-16
    - Sections 4.5, 5.1
  - Roughly 60% on earlier material
    - Probability rules, conditional probability, random variables, expected values, variance, discrete and continuous distributions, joint distributions
  - Roughly $1.5 \times$ longer than a midterm
    - But more than $3 \times$ as much time allotted
- Open book, notes, handouts, assignments, solutions
  - You may use anything that I have provided or that you have produced yourself
- Bring calculator, Table Z

Advice for preparing:
- Organize your notes
  - Helpful to have well-organized notes during exam
  - Very effective way to study regardless
- Make use of online resources
  - Handouts, HW solutions, quiz solutions, exam solutions
- Review key ideas, definitions, results from handouts
- Re-work questions from handouts, assignments
  - Without looking at answers first
- Work on odd-numbered exercises from text
  - Check answers in back
- Don’t study less because it’s open book/notes
  - Might refer to book, notes less than you expect
- Ask questions
  - Office hours for finals week: Mon 1 – 3, Tues 2 – 4, Thur 2 – 4

Advice during exam:
- Show method of solution
  - Use clear notation
  - State any assumptions
  - Indicate what rules you are using
  - Be on lookout for simplest way to solve problem
- Read carefully
  - Answer what is asked for
  - Make use of information provided
Outline of key ideas (since previous exam):

- Sampling distributions
  - Basic terminology
    - Random sample, i.i.d.
    - Statistic, sampling distribution
  - Exact calculation (for small sample sizes)
  - Approximation by simulation
  - Effect of sample size

- Central Limit Theorem (CLT) for sample mean
  - CLT for normally distributed population
  - CLT for any population distribution
  - Probability calculations
    - Sample size calculations, effects
  - CLT for sum
  - CLT for sample proportion

- Statistical estimators
  - Unbiasedness
  - Variance
  - Mean squared error (MSE)
  - Simulation analysis