Statistics 447
Spring 2018

Instructor: Vivek Roy
Office: 3415 Snedecor Hall
Phone: 294- 8701
E-mail: vroy@iastate.edu
Website: Canvas

Office hours: M 2– 3 pm, W 10 -11am in 3415 Snedecor
              And by appointment

Lectures: TR 4:10-5:30pm, W 3:10-4pm Carver 0232

Grader: Name: Yifan Zhu
             Office: Snedecor 3406
             E-mail : yifanzhu@iastate.edu
             Office Hours: **H**- 1 –2 Snedecor 3406
                           F- 1 – 2 Snedecor 3406

Textbook: *John E. Freund's Mathematical Statistics, 8th ed., By I. Miller & M. Miller*

Grading System: The following system will be used to determine course grades:

            Assignments   20%
    Lowest percentage score of Exams 1, 2 = 15%, Other exam = 30%
               Final   35%
(Guaranteed grade: Overall score 90% => A⁻ or up, 80% => B⁻ or up, 70% =>C⁻ or up)

Tentative Course Topics:

1. Review of set operations and combinatorics
2. Definitions and properties of probability
3. Discrete and continuous distributions
4. Marginal and conditional distributions
5. Expectation, moments and moment generating function of probability distribution
6. Various useful probability distributions
7. Transformation of random variables
8. Sampling Distributions
9. Properties of estimators
10. Methods for obtaining estimators
11. Interval estimation
12. Basic theory of hypothesis testing
13. Methods for obtaining statistical tests
14. Examples of statistical tests

Tentative Schedule: Spring 2018

Jan 8-12: Week 1   Chapter 1 – Permutations and Combinations
                                          Chapter 2 - Probability
Jan 15-19: Week 2   Chapter 2 (Cont.)
                                            Chapter 3 (3.1-3.4 –Discrete and Continuous
                                                    Random Variables and Probability)
Jan 22- Jan 26: Week 3   Chapter 3 (3.5-3.7)- Joint Distributions/densities

Jan 29- Feb 2: Week 4   Chapter 3 (Cont.)
                                          Chapter 4 (4.1-4.5)–Expectation, Moments & MGF
                                          Chapter 4 (4.6-4.8)- Product Moments, …

Feb 5- 9: Week 5   Chapter 4 (Cont.)
                                          Chapter 5 –Special Probability Distributions

Thursday 2/8/18   *EXAM 1 over materials through part of week 5

Feb 12- 16: Week 6   Chapter 5(cont.)
                                          Chapter 6 - Special Probability Densities
Feb 19- Feb 23: Week 7   Chapter 6 (cont.)

Feb 26- Mar 2: Week 8   Chapter 7 –Functions of Random variables

Mar 5-9: Week 9   Chapter 7 (cont.), Chapter 8–Sampling Distributions

Thursday, 3/8/18   *EXAM 2 over materials from part of Week 5 – Week 9

Mar 12-16: Week 10   Spring Break: No Class

Mar 19- 23: Week 11   Chapter 8 –Sampling Distributions

Mar 26- Apr 6: Week 12, 13 Chapter 10 - Estimation :Properties

Apr 9- 13: Week 14   Chapter 10(cont), Chapter 11 –Interval Estimation

Apr 16- 20: Week 15   Chapter 12 -Testing of Hypothesis

Apr 23 – 27: Week 16   Chapter 12 (cont), Chapter 13 (reference)
                                          Additional topics, if time permits.
April 30- May 4: Week 17   Final Exam on Wednesday, May 2, 2:15-4:15 pm.

- Iowa State University complies with the American with Disabilities Act and Section 504 of the Rehabilitation Act. Any student who may require an accommodation under such provisions should contact me as soon as possible and no later than the end of the second week of class or as soon as you become aware. **No retroactive accommodations will be provided in this class.**

- Please make sure that a Disability Resources staff send a SAAR form verifying your disability and specifying the accommodation you will need.

- The Disability Resources (DR) office is located on the main floor of the Student Services Building, Room 1076, 515-294-7220.