

STA 2122 Statistics for Behavioral and Social Sciences I

(Fall 2017, M, W & F 13:00-13:50)

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Office Hours: Monday and Wednesday 14:00-16:00, Friday 11:00-12:00

Prerequisite: High School Algebra

Textbook:

McClave and Sincich, Statistics, FIU Custom Edition (based on the Thirteenth Edition), Pearson.

Note: Students are required to use MyStatLab to get access to homework problems. You should purchase textbook with MyStatLab code. My course ID is chen24864.

Coverage

- Statistics, Data, and Statistical Thinking? (Chapter 1)

Discuss the basic concepts of Statistics: data, population, sample, parameter, and statistic. Discuss the role of statistics in the scientific method. Explain the goal of statistics. Discuss types of data, data collection and the role of statistics in critical thinking.

- Methods for Describing Sets of Data (Chapter 2: Sections 2.1-2.7, 2.8 optional and 2.10 read only)

Discuss graphical methods for qualitative and quantitative data, measures of central tendency, measures of variability, interpreting the standard deviation, and measures of relative standing.

- Probability (Chapter 3: Sections 3.1-3.7)

Discuss the basic concepts in probability: experiment, sample space, simple event, event, complement of an event, union and intersection of events, probability of an event, conditional probabilities, independent events, mutually exclusive events and Venn diagrams. Introduce random sampling.

- Discrete Random Variables (Chapter 4: Sections 4.1-4.4)

Define random variable. Introduce the types of random variable. Introduce probability distributions for discrete random variables. Compute the mean and variance of a discrete random variable. Give the characteristics of a binomial random variable, and use the binomial tables to find the probability for possible outcomes of a binomial experiment.

- Continuous Random Variables (Chapter 5: Sections 5.1 and 5.3)

Introduce probability distributions for continuous random variables with emphasis on the normal distribution. Use the standard normal table to find probabilities.

- Sampling Distributions (Chapter 6: Sections 6.1-6.3)

Define sampling distribution of a sample statistic, and list the desired properties of a good estimator. Introduce the sampling distribution of the sample mean from a normal distribution. State the Central Limit Theorem in terms of the sampling distribution of the sample mean. Use the standard normal table to find probabilities associated with the sample mean.

- Inferences Based on A Single Sample: Estimation (Chapter 7: Sections 7.1-7.4)

Define confidence interval. Compute confidence intervals for μ based on both large and small samples and confidence intervals for the binomial parameter, p , for large samples.

- Inferences Based on A Single Sample: Tests of Hypotheses (Chapter 8: Sections 8.1-8.6)

Discuss the elements of a test of hypothesis. Define Type I and Type II errors. Perform tests of hypotheses about μ and p based on large samples and about μ based on small samples. Define the observed significance level of the test statistic, p -value.

Quizzes, Tests and Exams:

1. Keep four decimal places for all your answers. Caution: You may lose points for tests and/or the final exam if you fail to do so.
2. Completely mark out any work which you do not want to show to the instructor. If you provide two or more solutions to the same problem the worst one will be picked for grading.
3. You must show your complete work to receive full/partial credit for all the problems except True/False problems and Multiple Choice problems.
4. To receive credit for True/False problems and Multiple Choice problems, correct answers must be circled. If you fail to circle the correct answer or circle more than one answer, you will get no credit for that question. Your work for True/False problems and Multiple Choice problems will be ignored.
5. You are allowed to use a scientific calculator during the tests and the final exam.
6. Do not use red pen. The instructor will use this color for grading.

Grading:

1. Your grades will be based on statistics lab participation (10%), quizzes (20%), three non-cumulative tests (30%) and the cumulative final exam (40%).
2. The lowest quiz score and the lowest test score will be dropped before averaging. The final exam score will not be dropped.
3. No makeup quizzes or tests will be given.

Grading Scale:

95% - 100% A	83% - 86% B	70% - 76% C
90% - 94% A-	80% - 82% B-	60% - 69% D
87% - 89% B+	77% - 79% C+	0% - 59% F

Homework assignments will be posted on Blackboard Learn after each lecture. The homework problems will appear on MyStatLab as well. Although homework assignments will not be counted toward your final grades, it is extremely important that you work on all the homework problems before you take quizzes, tests and the final exam. For any questions about the homework problems, contact the instructor during the instructor's office hours, or use our free statistics tutoring service. You can also get help from our learning assistants in the statistics lab located in GL 266.

Mastery Math Lab Participation

- You are required to spend at least two hours in the lab (GL 266) each week. The week runs Monday through Sunday. You need to complete your lab hour requirement by each Sunday at 6 PM. The time can be continuous or broken into smaller time periods. The total time you spend in the lab will be recorded and if it is smaller than 2 hours = 120 minutes (119 is smaller than 120), you will get 0 for that period.
- The lab participation makes up 10% of your grade in this course.
- The hours you spend in the lab do not “roll over” to the next period. If you spend 5 hours in one week, you still have to spend a minimum of 2 hours in the next week. There is also no partial credit for earning less than required 2 hours
- You are responsible for tracking your own hours. There is a monitor in the lab that will tell you how many minutes you have accrued each week.
- You need to sign out whenever you leave the lab. This includes to take a phone call or visit the restroom.
- Lab hours are Monday through Friday, 8 am - 8 pm and Sunday, 1-6 pm.
- There is no food, gum or drink allowed in the lab.
- Cell phones must be on vibrate and put away (not on lap or in chair). If you need to answer a phone call you must sign out and leave the lab for the duration of the call.

Tentative Test Schedule

September 15 (Friday) Test 1
October 13 (Friday) Test 2
October 30 (Monday) Last day to drop
November 3 (Friday) Test 3
November 10 (Friday) Veterans Day (no class)
November 24 (Friday) Thanksgiving Holiday (no class)
December 4-8 Final Exam Week
December 14 (Thursday) Grades Posted

All the test and exam dates are listed here. Before you decide to register, please make sure that you will be available on those dates. Quizzes are generally based on homework assignments. The instructor can give quizzes on any day and at any time during the classes. No makeup quizzes or tests will be given.

Florida International University is a community dedicated to generating and imparting knowledge through excellent teaching and research, the rigorous and respectful exchange of ideas, and community service. All students should respect the right of others to have an equitable opportunity to learn and honestly to demonstrate the quality of their learning. Therefore, all students are expected to adhere to a standard of academic conduct, which demonstrates respect for themselves, their fellow students, and the educational mission of the University. All students are deemed by the University to understand that if they are found responsible for academic misconduct, they will be subject to the Academic Misconduct procedures and sanctions, as outlined in the Student Handbook.