

Math 11 Elementary Statistics Spring 2020

Course Syllabus

General Information

Instructor

Veronica Andrade-Romeo

Office

FEM 4A

Office Hours

Monday & Wednesday 11:00 – 12:50 in my office and a virtual office hour on Fridays 9:00 – 9:50

Email me if you need to meet with me and my office hours do not work for you.

Email

maria.andrade-romeo@reedleycollege.edu

Prerequisites

none

Course Description

Math 11 is an introduction to statistical methods and techniques for business, behavioral, and social science majors. Topics include descriptive measures of central tendency and variability, probability, binomial and normal distributions, random variables, sampling, estimating, hypothesis testing (parametric and nonparametric), correlation and regression.

Text and Required Material

1. Triola, "Elementary Statistics" 13th Edition MyMathLab Access Card.

The best and cheapest way to purchase the access card is with a credit card through CANVAS. You may also purchase it at the bookstore but it will cost a little more. You have two options. Option one purchase the MyMathLab Access Card only or Option Two Purchase both the textbook and the MyMathLab Access Card. In other words, the MyMathLab access card is required and the actual textbook is completely optional. The text book is Triola "Elementary Statistics" 13th Edition.

2. Calculator (does not have to be a graphing calculator but if you can get a graphing calculator without purchasing one such as checking one out from the library or borrowing one then get one. Otherwise get an inexpensive calculator.)
3. Printing Paper (I prefer you do math on non-lined paper)

Reasons for which you may be dropped

I may drop students at any time starting on Wednesday January 15th through Sunday March 15th. Here are the reasons for which you may be dropped:

1. You may be dropped if you have not signed up for MyMathLab by Wednesday January 15th. DO NOT purchase the access code by January 15th use the free trial at this point (this is important if you buy the 18-week access code because this semester has 19 weeks, so it is very important that you use the free trial for a week. Also, be sure to register through CANVAS not through Pearson. Which means that I will NOT give you a course ID. When you sign up through CANVAS MyMathLab will automatically know what course you need to enroll in.
2. You may be dropped IF YOU HAVE NOT PURCHASED the access code by Wednesday January 29th. (Remember if you purchase an 18-week access code use the free trial first and pay for it after 1/20/2019 but before 1/29/2019)

3. You may be dropped if you have TWO or more consecutive missing assignments at any point within the dropping period.

NOTE: If you want to drop the class, make sure that you do so on Webadvisor, do not depend on me to drop you.

Absences and Tardies

- There are no excused absences, emailing me or calling me does not excuse an absence.
- If you arrive after I take attendance but less than 20 minutes late you will be marked tardy, or if you leave less than 20 minutes early you will be marked tardy. (Make sure to write your name on the board if you arrive tardy, so that I remember to change your status from absent to tardy)
- If you arrive more than or equal to 20 minutes late or leave more than or equal to 20 minutes early then you will be marked absent.
- You will be deducted 5 points of participation for a tardy and 10 points for an absence

Classroom Behavior

- Absolutely no cell phones (You may lose participation points for the day, unless we are using them as part of the lesson).
- In general, be considerate. We are here to learn.

Important Dates

1/24/2020: Census-Last Day to ADD/DROP a full-term class for a full refund

1/31/2020: Last day to drop to avoid a "W" in person

2/2/2019: Last day to drop to avoid a "W" on Webadvisor

3/13/2019: Final Drop Deadline, a letter grade will be assigned after this date

5/20/2019: Final Exam 1:00 – 2:50

Grading

Grade	Range
A	90 – 100%
B	80 – 89%
C	70 – 79%
D	60 – 69%
F	0 – 59%

Grade Category	Weight
Tests	70%
Quizzes, Activities	5%
Participation	5%
Homework	20%

YOUR GRADE IS THE GRADE ON THE CANVAS GRADEBOOK (NOT THE GRADE ON MYMATHLAB).

Testing

Follow Directions, be prompt, NO CELL PHONES allowed. Testing must be completed in a single sitting, you may not leave the room. The SCCCD policy regarding ACADEMIC DISHONESTY will be applied when appropriate.

Academic Dishonesty

Cheating is the act or attempted act of taking an examination or performing an assigned, evaluated task in a fraudulent or deceptive manner, such as having improper access to answers, in an attempt to gain an unearned academic advantage. Cheating may include, but is not limited to, copying from another's work, supplying one's work to another, giving or receiving copies of examinations without an instructor's permission, using or displaying notes or devices inappropriate to the conditions of the examination, allowing someone other than the officially enrolled student to represent the student, or failing to disclose research results completely.

Plagiarism is a specific form of cheating: the use of another's words or ideas without identifying them as such or giving credit to the source. Plagiarism may include, but is not limited to, failing to provide complete citations and references for all work that draws on the ideas, words, or work of others, failing to identify the contributors to work done in collaboration, submitting duplicate work to be evaluated in different courses without the knowledge and consent of the instructors involved, or failing to observe computer security systems and software copyrights. Incidents of cheating and plagiarism may result in any of a variety of sanctions and penalties, which may range from a failing grade on the particular examination, paper, project, or assignment in question to a failing grade in the course, at the discretion of the instructor and depending on the severity and frequency of the incidents.

Students with Disabilities

If you have any special needs addressed by the American Disability Act and need course materials in alternate modes, or alternate testing circumstances, it is your responsibility to notify me as soon as possible. Upon notification, immediate reasonable efforts will be made to accommodate your special needs.

Student Learning Outcomes

Upon completion of this course, students will be able to:

1. Organize, analyze, and utilize appropriate methods to draw conclusions based on sample data by using tables, graphs, measures of central tendency, and measures of dispersion.
2. Apply concepts and terminology of statistics.
3. Implement the rules of probability.
 - Apply mathematical models to real world situations
 - Demonstrate the ability to use symbolic, graphical, numerical and written representations of mathematical ideas.
 - Use critical thinking of mathematical reasoning to solve a variety of problems.
4. Collect data, interpret and communicate the results using statistical analyses such as confidence intervals, hypothesis tests, and regression analysis.

Course Objectives

In the process of completing the course, the student will:

1. Distinguish among different scales of measurement and their implications;
2. Identify the standard methods of obtaining data and identify advantages and disadvantages of each;
3. Interpret data displayed in tables and graphically;
4. Calculate measures of central tendency and variation for a given data set;
5. Apply concepts of sample space and probability;
6. Calculate the mean and variance of a discrete distribution;
7. Calculate probabilities using normal and t-distributions;
8. Distinguish the difference between sample and population distributions and analyze the role played by the Central Limit Theorem;
9. Construct and interpret confidence intervals;
10. Determine and interpret levels of statistical significance including p-values;
11. Interpret the output of a technology-based statistical analysis;
12. Identify the basic concept of hypothesis testing including Type I and II errors;
13. Formulate hypothesis tests involving samples from one and two populations;
14. Select the appropriate technique for testing a hypothesis and interpret the result;
15. Use linear regression and ANOVA analysis for estimation and inference, and interpret the associated statistics; and
16. Use appropriate statistical techniques to analyze and interpret applications based on data from disciplines including business, social sciences, psychology, life science, health science, and education.

Course Outline

A. Introduction to Statistics

1. Summarizing data graphically and numerically
 - a. Frequency distributions
 - b. Graphs
2. Descriptive statistics:
 - a. measures of central tendency: mean, median, mode
 - b. measures of variation: variance, standard deviation, quartiles, range
 - c. relative position
 - d. levels/scales of measurement

B. Probability

1. Sample spaces and probability
2. Random variables and expected value
3. Sampling and sampling distributions
4. Discrete distributions – Binomial
5. Continuous distributions – Normal

C. Sampling Theory

1. Simple random sample
2. Central Limit Theorem

D. Estimating Population Parameters

1. Estimation and confidence intervals from a small or large sample.
2. Sample size.

E. Hypothesis Testing (Parametric/Nonparametric)

1. One population, one and two sided tests.

- a. z-test for means and proportions.
- b. t-test for means (independent and dependent samples)
- 2. Two populations, sampling distributions
- 3. Chi-square (Goodness of Fit and Contingency Tables)
- F. Correlation and Simple Linear Regression
 - 1. Correlation coefficient
 - 2. Regression coefficient
 - 3. Test of hypothesis about the value of correlation/regression coefficient.
 - 4. Analysis of variance (ANOVA)G. Applications/Technology
 - 1. Applications using data from disciplines including business, social sciences, psychology, life science, health science, and education
 - 2. Statistical analysis using technology such as SPSS, EXCEL, Minitab, or graphing calculators

Disclaimer

Ms. Andrade-Romeo reserves the right to make changes to the syllabus with whole class notification