Elementary Statistics

Class Time: TF 11 A.M.-12:15 P.M.   *Class Room*: RLC 102

Instructor: Angel R. Pineda, Ph.D.   *Office*: RLC 201.J
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Office Hours: Tuesday 10-10:50 A.M., Wednesday 11-11:50 A.M., Friday 10-10:50 A.M. and or by appointment.

Textbook: Lock, Lock, Lock, Lock, Lock, Statistics: Unlocking the Power of Data, Wiley, 2013.

Software: This course will use a statistical tool which accompanies our text (StatKey): http://www.lock5stat.com/statkey/index.html

Course Description:
An introduction to statistical methods: descriptive statistics, association between two variables, sampling distributions, bootstrapping, confidence intervals, hypothesis test and tests of significance.

Prerequisite: None.

Course Objectives:
After completing this course, the students should be able to:
- Apply and interpret the results of a variety of statistical techniques, including both descriptive and inferential methods.
- Understand many of the fundamental ideas of statistics, such as variability, distribution, association, causation, sampling, experimentation, confidence, and significance.
- Analyze and assess statistical arguments, such as those found in the popular press as well as in scholarly publications.
- Use statistical software to analyze data.
- Communicate your knowledge of statistical ideas effectively.

Course Homepage (Moodle):
Here you will find four features that will be used in this course:
- *Email:* make sure that your email on Moodle is one that you check regularly. Homework assignments, announcements and other class related information will be sent via email.
- *Course Information and Documents:* material covered each week, assignments and solution keys.
- *Student Discussion Board:* this online forum allows for students and faculty to communicate.
- *Grades:* students will be able to keep track of their grades online.

Grading:

Participation Grade (5 %)
There will be questions throughout lecture. Students should try to answer the questions and participate in the discussion. Participation points are gained by being engaged in the class. Distractions to class or lack of attention, such as using your cell phone will result in the loss of participation points for that class period. Any unexcused absence above two unexcused absences will result in a loss of points for that class period. Three class periods were a student is late to class will count as an unexcused absence.

Online Homework (15 %)
Assigned every week using Wiley Plus and always includes reading the text chapter. Make sure to use the online textbook and video explanations of concepts that accompany the online homework.

In-class Worksheets and Quizzes (10 %)
There will be weekly quizzes in the material covered in the lecture and HW. There may be some worksheets as well.

Midterm Exams: (15 % each)

Exam I	Exam II
Friday September 29	Friday November 3

Class Project (15 %): Friday December 1

Final Exam (25 %): Monday December 11, 1:30 P.M. – 3:30 P.M.

Tentative Grading Scale

Percent	93-100	90-92	87-89	83-86	80-82	77-79	70-76	67-69	60-66	0-59
Grade	A	A-	B+	B	B-	C+	C	D+	D	F

The exact grading scale will be determined after the final exam. The numerical scores in the tentative grading scale guarantee the associated letter grade but the instructor may change the scale to the student's benefit.

Dates to Remember
>September 1: Late Registration & Add/Drop Ends
>October 10: Monday Schedule (No Classes)
>October 16: Midterm Grades Due
>November 17: Last day to withdraw from Courses
>November 22-24: Thanksgiving (No Classes)
>December 8: Last Day of Classes

Class Policies
- Attendance is required. Students are expected to arrive on time.
- Failure to attend a class with an unexcused absence will result in a zero for quizzes given on that day. After four unexcused absences, the appropriate dean will be notified. To receive an excused absence, proper documentation and instructor approval is needed.
- Late worksheets/labs will not be accepted after the solutions are distributed. In case the worksheet/lab is handed in before the solutions are posted it will be marked 20% off for every day (or part thereof) it is late. There will be a penalty for late online HW.
- The lowest quiz grade will be dropped.
- No make-up exams will be given, unless you have a medical or family emergency. These emergencies require valid documentation. The grade for a missed exam is zero.
- Cell phones (or other technology not related to the class) in the classroom is only allowed with express permission of the instructor for special circumstances. In general cell phone or other potentially disruptive technology use is not allowed in class.

Calculator Policy
A calculator is not required for this course.

Suggestions
- The course requires a time commitment of about 6-9 hours outside of class time per week (2-3 per class hour). The material builds on itself, so it is very important not to fall behind.
- Find a study partner or group.
- Treat your homework, quizzes, and labs as a study guide for future exams. Write solutions to problems in a neat and organized fashion.

- I encourage you to come to office hours regularly. I will do my best to help you.

Sources of Support
- The Center for Academic Success provides tutoring to support students with their courses. It also provides writing assistance. See their website for a list of their services and hours: https://manhattan.edu/academics/academic-support/center-academic-success.php

Academic Integrity:
As students of Manhattan College, you have each signed The Manhattan College Honor Pledge:

As a Manhattan College student, I will not lie, cheat, or steal in my academic endeavors, nor will I accept the actions of those who do. I will conduct myself responsibly and honorably in all my activities as a Manhattan College student. I am accountable to the Manhattan College community and dedicate myself to a life of honor.

Whenever you put your name on work to be handed in for grading in this class, you are reaffirming the above pledge. Violations of the Honor Code include, but are not limited to, cheating, plagiarism, fabrication, and other forms of academic misconduct. Students should familiarize themselves with the Manhattan College Student Code of Conduct and Academic Policies found at: https://inside.manhattan.edu/student-life/dean-of-students/code-conduct.php

Special Accommodations:
- Students with special needs should bring appropriate documentation to the Specialized Resource Center, Miguel 300, https://manhattan.edu/academics/academic-support/specialized-resource-center.php, to obtain an Academic Adjustment/Auxiliary Aid form. Bring the completed form to me as soon as possible, and together we will decide on how best to fulfill the adjustments and/or aids listed on the form.
- Student athletes should bring their event schedules to me as soon as possible.

Course Outline:

Chapter 1. Collecting Data
    1.1 The Structure of Data
    1.2 Sampling from a Population
    1.3 Experiments and Observational Studies

Chapter 2. Describing Data
    2.1. Categorical Variables
    2.2. One Quantitative Variable: Shape and Center
    2.3. One Quantitative Variable: Measures of Spread
    2.4. Outliers, Boxplots, and Quantitative/Categorical Relationships
    2.5. Two Quantitative Variables: Scatterplot and Correlation
    2.6. Two Quantitative Variables: Linear Regression

Chapter 3. Confidence Intervals
    3.1. Sampling Distributions
    3.2. Understanding and Interpreting Confidence Intervals
    3.3. Constructing Bootstrap Confidence Intervals
    3.4. Bootstrap Confidence Intervals using Percentiles

Chapter 4. Hypothesis Tests
    4.1. Introducing Hypothesis Tests
    4.2. Measuring Evidence with P-values
    4.3. Determining Statistical Significance

The material in this syllabus may be changed at the instructor's discretion. Any changes will be communicated to the students.