**Math-11-56221: Elementary Statistics**

**REEDLEY COLLEGE, SPRING 2016**

**Instructor:** Francilyn A. O’Brien **email:** francilyn.obrien@reedleycollege.edu

**Class Schedule**: 12:00-12:50 **Room Number: MTW** AGR1; **TH** FEM3

**Prerequisites:** Math 103

**Required text:** Mario Triola, 12th ed. With MyMathLab Bundle. A hardcopy is required.

**Catalog Description:**

This course is an introduction to the use of probability techniques, hypothesis testing, and predictive techniques to facilitate decision making. Topics include descriptive statistics; probability and sampling distributions; statistical inference; correlation and linear regression; analysis of variance; chi-square and t-tests; and application of technology for statistical analysis including the interpretation of the relevance of the statistical findings. Applications using data from disciplines including business, social sciences, psychology, life science, health science, and education will be covered in the course. (AA, CSU,UC)

**Course Objectives:**

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

A. Distinguish among different scales of measurements and their implications.

B. Summarize given data sets using a variety of graphs and interpret data displayed in tables and graphically.

C. Apply measures of central tendency (mean, median, and mode) and variability (standard deviation, quartiles, and range) in application problems.

D. Apply basic rules of probabilities. Identify if an event is independent or dependent and calculate the probability of the event.

E. Identify whether a discrete or continuous probability distribution is necessary and apply the appropriate formula to calculate probabilities in application problems.

F. Apply sampling theory to collect a sample from a population by the method of simple random sampling.

G. Estimate the parameters of a population by using large and small sample procedures for constructing confidence intervals. Determine the minimum sample size to obtain a desired margin of error.

H. Apply the *z*, *t*, Chi-squared, and Analysis of Variance test of significance.

I. Apply correlation and simple linear regression to determine existence of relationships amongst quantitative variables.

**Student Learning Outcomes:**

1. Given a data set, the student will be able to find the sample mean, median, mode, standard deviation, and variance.

2. Given a binomial or normal probability distribution, or application involving such a distribution, the student will be able to determine the probabilities associated with a given outcome.

3. Given a confidence level, construct a confidence interval for the population proportion or mean, or determine the sample size required for estimating the *μ*.

4. Given a claim, the student will be able to use the method of hypothesis testing to determine its validity.

**Course Materials**

\* Notebook paper \* Scantrons (quiz strip)

**Attendance:**

If you are absent more than once in the first 4 weeks of the semester or more than 2 times in the first nine weeks you may be dropped from the course. Attendance is a key factor in your success as a face-2-face college student. Students are expected to attend all class meetings, be on time, and be in class the entire class session. 4 absences over the course of the entire semester may result in a drop from the course. However, if you decide to drop the course, it is your responsibility to make the drop official in the Admissions and Records office or else possibly receive an F in the course. Also, there are to be no visitors in class for any reason. Pagers, cell-phones, CD/DVD/MP3 players, and any other electronic device must be turned off, silenced, and out of sight before entering class. If someone uses/answers a phone in class, a quiz will be given to all. You can only use a computer or technology equipment if given permission by the instructor.

**Tardies:**

It is distracting, rude and unfair to classmates and to the instructor when a student is late. Leaving class at any time during the lecture will not be allowed. Please use the restroom/make phone calls before class or at the designated break times. If you leave class at any time, it will count as a tardy. Two tardies will be counted as an absence. You are responsible for telling me, at the end of class, that you were tardy. If I mark you absent and you do not tell me of your tardy, you will remain absent. If you leave class early, you will be marked absent. Students with chronic tardiness may be dropped from the course**.**

**Homework:**

HWs are assigned on MyMathLab. Each is due 2-4 days after it is assigned. You will be given more than one attempt. The average score will be taken. Difficult/challenging questions will be discussed in class. If you are absent, you are responsible for any HW assignments. It is your responsibility to keep up with the pace of the class.

**In-Class Assignments:** There will be quizzes, in-class assignments and group projects assigned throughout the semester. No in class assignments can be made up so attendance is very important.

**Exams:**

There will be an exam at the end of each unit, approximately every 2-3 weeks. Each exam will be worth 100 points each. There are no make-ups for missed tests. No exceptions. Calling the day of the exam and telling me that you cannot make it to class is inexcusable.

**Grading:**

• In-Class Exams will be worth 50% of your overall grade.

• MyMathLab HW, Quizzes & MIDTERM Exam will be worth 25%

• Classwork, Projects & Presentations, & FINAL Exam will be worth 25%

* **A** 90 - 100 **B** 80 –89 **C** 70 – 79 **D** 60 – 69 **F** 0 – 59

**Course Outline:**

Chapters 1-3: The Nature of Probability and Statistics, Frequency Distributions and Graphs,

|  |  |
| --- | --- |
| Data Description (2.5 weeks) Chapter 4:  | Probability and Counting Rules (2.5 weeks)  |
| Chapter 5:  | Discrete Probability Distributions (2.5 weeks)  |
| Chapter 6:  | The Normal Distribution (2.5 weeks)  |
| Chapter 7:  | Confidence Intervals and Sample Size (2.5 weeks)  |
| Chapter 8:  | Hypothesis Testing (2.5 weeks)  |
| Chapter 9,10,11:  | Correlations & Regression Analyses (2.5 weeks)  |