MATH 1342 Elementary Statistics Spring 2019 Syllabus

Disclaimer

This syllabus is current and accurate as of its posting date, but will not be updated. For the most complete and up-to-date course information, contact the instructor.

Instructor Information

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Major Course Requirements

Tests - Students may expect a test at the end of each chapter-oriented topic. The exact dates and coverage of these tests will be announced in class. The final exam will be held as specified in class.

Daily Work - Daily work will consist primarily of traditional homework problems completed on paper.

Calculation - Your homework will count 10%, each test throughout the semester 10%, and the final exam (semester exam) 20%. Then 90 and above is an A, 80-89 is a B, 70-79 is a C, 60-69 is a D, and less than 60 is an F.

Student Learning Outcomes

1. Students will read, interpret, and use the vocabulary, symbolism, and basic definitions used in statistics including definitions of measures of central tendency; standard deviation; standardized variable; regression line; coefficient of determination; normally distributed variable; sampling distribution of the mean; sampling distribution of the proportion; point estimate; confidence interval estimate; null hypothesis; alternative hypothesis; critical value; and test statistic.

2. Students will identify and apply the laws and formulas that result directly from the definitions; for example, calculation of measures of central tendency; standard deviations; coefficients of determination; critical values and test statistics.
3. Students will use the facts, formulas, and techniques learned in this course to find regression equations for data collected; use regression equations to make predictions; calculate probabilities; find confidence intervals for means and proportions; and perform a variety of hypothesis tests.

4. Students will acquire a level of proficiency in the fundamental concepts and applications necessary for further study in academic areas requiring statistics as a prerequisite, or for work in occupational fields requiring a background in statistics. These fields might include education, business, finance, marketing, computer science, physical sciences, and nursing, as well as further study in other statistics courses.

**Required Texts or Readings**


1. **Introduction to Statistics**
   
   1.1 An Overview of Statistics
   1.2 Data Classification
   1.3 Experimental Design

2. **Descriptive Statistics**
   
   2.1 Frequency Distributions and Their Graphs
   2.2 More Graphs and Displays
   2.3 Measures of Central Tendency
   2.4 Measures of Variation
   2.5 Measures of Position

3. **Probability**
   
   3.1 Basic Concepts of Probability
   3.2 Conditional Probability and the Multiplication Rule
   3.3 The Addition Rule

4. **Discrete Probability Distributions**

5. **Normal Probability Distributions**
   
   5.1 Introduction to Normal Distributions and the Standard Normal Distribution
   5.2 Normal Distributions: Finding Probabilities
   5.3 Normal Distributions: Finding Values
   5.4 Sampling Distributions and the Central Limit Theorem
6. Confidence Intervals

6.1 Confidence Intervals for the Mean (Large Samples)
6.2 Confidence Intervals for the Mean (Small Samples)
6.3 Confidence Intervals for Population Proportions
6.4 Confidence Intervals for Variance and Standard Deviation (The Chi-Square Distribution)

7. Hypothesis Testing with One Sample

7.1 Introduction to Hypothesis Testing
7.2 Hypothesis Testing for the Mean (Large Samples)
7.3 Hypothesis Testing for the Mean (Small Samples)
7.4 Hypothesis Testing for Proportions

9. Correlation and Regression

9.1 Correlation
9.2 Linear Regression
9.3 Measures of Regression and Prediction Intervals

10.1 Chi-Square Goodness-of-Fit Test

Honor Code

Angelo State University students shall maintain complete honesty and integrity in their academic pursuits.

The University expects all students to engage in all academic pursuits in a manner that is above reproach and to maintain complete honesty and integrity in the academic experiences both in and out of the classroom.