

MATH 1342 Elementary Statistics Spring 2022 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

Elementary Statistics Picturing the World, Fifth Edition, by Ron Larson and Betsy Farber

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
- 4.1 *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.

Student Disability Services

ASU is committed to the principle that no qualified individual with a disability shall, on the basis of disability, be excluded from participation in or be denied the benefits of the services, programs or activities of the university, or be subjected to discrimination by the university, as provided by the Americans with Disabilities Act of 1990 (ADA), the Americans with Disabilities Act Amendments of 2008 (ADAAA), and subsequent legislation.

The Office of Student Affairs is the designated campus department charged with the responsibility of reviewing and authorizing requests for reasonable accommodations based on a disability, and it is the student's responsibility to initiate such a request by contacting:

[Ms. Dallas A. Swafford](#)

Director of Student Disability Services

- 325-942-2047
- dallas.swafford@angelo.edu
- [Houston Harte University Center](#)

Title IX Statement

Angelo State University is committed to the safety and security of all students. If you or someone you know experience sexual harassment, sexual assault, domestic or dating violence, stalking, or discrimination, you may contact ASU's Title IX Coordinator:

[Michelle Nicole Boone, J.D.](#)

Director of Title IX Compliance