Syllabus
MATH 1342 NON-STEM
Elementary Statistical Methods
Western Texas College
2021 2022

1. Basic Course Information
    a. MATH 1342 Course Description: Collection, analysis, presentation and interpretation of data, and probability. Analysis includes descriptive statistics, correlation and regression, confidence intervals, and hypothesis testing. Use of appropriate technology is recommended.
    b. Any required prerequisites: A grade of C or higher in MATH 0302 or placement by college entrance exam scores.
    c. Advancement Via Individual Determination (AVID) learning strategies will be implemented periodically throughout the course.
    d. This course has been designed to prepare students whose chosen field of study requires a STEM mathematical pathway.
    e. Project Base Learning (PBL) is an active learning method in which students gain knowledge and skill by investigating and responding to a tangible, engaging and complex question, problem or challenge.
    f. Online course content is administered through the college's learning management system (LMS), Moodle, also called eCampus. A link to Moodle can be found on mywtc.edu or the college's home page, www.wtc.edu (the big M with a graduation cap).

2. Student Learning Outcomes
    a. Explain the use of data collection and statistics as tools to reach reasonable conclusions.
    b. Recognize, examine and interpret the basic principles of describing and presenting data.
    c. Compute and interpret empirical and theoretical probabilities using the rules of probabilities and combinatorics.
    d. Explain the role of probability in statistics.
    e. Examine, analyze and compare various sampling distributions of both discrete and continuous random variables.
    f. Describe and compute confidence intervals.
    g. Solve linear regression and correlation problems.
    h. Perform hypothesis testing using statistical methods.

3. Course Requirements
    a. Major Requirements—All major requirements must be proctored.
        i. Professionalism
        ii. Unit Exams
        iii. Midterm Exam
        iv. Final Exam
    b. Minor Requirements
        i. Binder Checks
        ii. Homework
        iii. Quizzes
        iv. Projects

4. Testing Requirements
    a. Students are NOT allowed to use their book or notes of any kind while completing major requirements.

5. Information on Books and Other Course Materials
    a. Optional Book: Elementary Statistics Using the TI-83/84 Plus Calculator 5th Edition by Mario Triola. Book ISBN: 9780134686943
    b. Required Access Code: Students must purchase a MyLabSTATs Access Code. This code can be purchased stand alone or bundled with the textbook. MyLabSTATs access code ISBN: 9780321694645
    c. Calculators: A TI-84 or higher is strongly recommended. The TI-89, TI-Inspire with CAS or any other calculator with CAS capability are not permitted.

6. Other Policies, Procedures and important dates: Please refer to the WTC Course Catalog for the following:
    a. Campus Calendar
    b. Final exam schedule
    c. How to drop a class
    d. Withdrawal information
    e. Student Conduct
    f. Academic Integrity
    g. Class Attendance
    h. Students with disabilities

7. Planned Course of Study

Chapters and Sections to be covered throughout the semester.	
Chapter 1: Introduction to Statistics	1.1 Statistical and Critical Thinking 1.2 Types of Data 1.3 Collecting Sample Data
Chapter 2: Exploring Data with Tables and Graphs	2.1 Frequency Distributions 2.2 Histograms 2.3 Graphs that Enlighten and Graphs that Deceive 2.4 Scatterplots, Correlation, and Regression
Chapter 3: Describing, Exploring, and Comparing Data	3.1 Measures of Center 3.2 Measures of Variation 3.3 Measures of Relative Standing and Boxplots
Chapter 4: Probability	4.1 Basic Concepts of Probability 4.2 Addition Rule and Multiplication Rule 4.3 Complements, Conditional Probability, and Bayes' Theorem
Chapter 5: Discrete Probability Distributions	5.1 Probability Distributions 5.2 Binomial Probability Distributions
Chapter 6: Normal Probability Distributions	6.1 The Standard Normal Distribution 6.2 Real Applications of Normal Distributions 6.3 Sampling Distributions and Estimators 6.4 The Central Limit Theorem 6.5 Assessing Normality
Chapter 7: Estimates Parameters and Determining Sample Size	7.1 Estimating a Population Proportion 7.2 Estimating a Population Mean 7.3 Estimating a Population Standard Deviation or Variance
Chapter 8: Hypothesis Testing	8.1 Basics of Hypothesis Testing 8.2 testing a Claim about a Proportion 8.3 Testing a Claim about a Mean
Chapter 9: Inferences from Two Samples	9.1 Two Proportions 9.2 Two Means: Independent Samples
Chapter 10: Correlation and Regression	10.1 Correlation 10.2 Regression
Chapter 12: Analysis of Variance	12.1 One-Way ANOVA 12.2 Two-Way ANOVA
Chapter 14: Statistical Process Control	14.1 Control Charts for Variation and Mean 14.2 Control Charts for Attributes

Disclaimer: Schedule and content is subject to change at the instructor's discretion.

Last Updated: December 2021