

Syllabus
BUSI 2305
Business Statistics
Western Texas College
2021-2022

I. Basic Course Information

- A. BUSI 2305 Course Description: Descriptive and inferential statistical techniques for business and economic decision-making. Topics include the collection, description, analysis, and summarization of data; probability; discrete and continuous random variables; the binomial and normal distributions; sampling distributions; tests of hypotheses; estimation and confidence intervals; linear regression; and correlation analysis. Statistical software is used to analyze data throughout the course.
- B. Any required prerequisites: Students must have successfully completed Math 1324 or Math 1314; BCIS 1305/1405 Business Computer Applications.
- 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).

II. Student Learning Outcomes

- A. Describe the random processes underlying statistical studies.
- B. Calculate and use probability in solving business problems.
- C. Compute descriptive statistics, construct graphs for data analysis, and interpret outcomes.
- D. Compute and interpret measures of central tendency and dispersion.
- E. Calculate expected values to evaluate multiple outcomes of a decision.
- F. Describe, interpret, and apply discrete and continuous probability distributions.
- G. Construct and interpret confidence intervals for means and proportions.
- H. Formulate, perform, and interpret hypotheses tests (one and two population parameters).
- I. Calculate, evaluate, and interpret simple linear correlation/regression.

- J. Use statistical software to graph, compute, and analyze statistical data
- III. Course Requirements
 - a. Major Requirements—All major requirements must be proctored.
 - i. In-Class Participation
 - ii. Unit Exams
 - iii. Midterm Exam
 - iv. Final Exam
 - b. Minor Requirements
 - i. Binder Checks
 - ii. Homework
 - iii. Quizzes
 - iv. Projects
- IV. Testing Requirements
 - a. Students are NOT allowed to use their book or notes of any kind while completing major requirements.
- V. 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: Students must have a calculator that provides them with the ln (natural log) function key. 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.
- VI. Other Policies, Procedures and important dates. Please refer to the [WTC Catalog](#) for the following.
 - A. Campus Calendar
 - B. Final exam schedule
 - C. How to drop a class
 - D. Withdrawal information
 - E. Student Conduct/Academic Integrity
 - F. Class Attendance
 - G. Students with disabilities

VII. 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