**BARTON COUNTY COMMUNITY COLLEGE**

**COURSE SYLLABUS**

1. **GENERAL COURSE INFORMATION**

Course Number: STAT 1827

Course Title: Elements of Statistics Lab

Credit Hours: 0 - 1

Prerequisite: Concurrent enrollment or previous completion of STAT 1829 Elements of

 Statistics OR BUSI 1609 Business Statistics.

Division/Discipline: Academics Division/Mathematics

Course Description: Computer lab focusing on applying statistical software to data analysis and decision making. Using Microsoft Excel software, hands-on applications include, but are not limited to, frequency distribution charts, histograms, descriptive statistics, linear regression, binomial probability, confidence intervals, and hypotheses testing.

1. **INSTRUCTOR INFORMATION**
2. **COLLEGE POLICIES**

Students and faculty of Barton Community College constitute a special community engaged in the process of education. The College assumes that its students and faculty will demonstrate a code of personal honor that is based upon courtesy, integrity, common sense, and respect for others both within and outside the classroom.

Plagiarism on any academic endeavors at Barton Community College will not be tolerated. The student is responsible for learning the rules of, and avoiding instances of, intentional or unintentional plagiarism. Information about academic integrity is located in the Student Handbook.

The College reserves the right to suspend a student for conduct that is determined to be detrimental to the College educational endeavors as outlined in the College Catalog, Student Handbook, and College Policy & Procedure Manual. (Most up-to-date documents are available on the College webpage.)

Any student seeking an accommodation under the provisions of the Americans with Disability Act (ADA) is to notify Student Support Services via email at disabilityservices@bartonccc.edu.

1. **COURSE AS VIEWED IN THE TOTAL CURRICULUM**

Elements of Statistics Lab curriculum applies the statistical and mathematical theory presented in the Elements of Statistics course through the analysis of practical, relevant case studies. The course is recommended for students in a wide variety of majors, including sociology, business, economics, agriculture, engineering, ecology, psychology, education, medicine and mathematics. The emphasis is on understanding how to use statistical software to address real problems.

The transferability of all college courses will vary among institutions, and perhaps even among departments, colleges, or programs within an institution. Institutional requirements may also change without prior notification. It is the student's responsibility to obtain relevant information from intended transfer institutions to ensure that the courses the student enrolls in are the most appropriate set of courses for the transfer program.

1. **ASSESSMENT OF STUDENT LEARNING**

Barton Community College is committed to the assessment of student learning and to quality education. Assessment activities provide a means to develop an understanding of how students learn, what they know, and what they can do with their knowledge. Results from these various activities guide Barton, as a learning college, in finding ways to improve student learning.

Course Outcomes, Competencies, and Supplemental Competencies:

A student will be able to use Microsoft Excel to:

1. Organize and describe data
2. Enter and sort data.
3. Solve problems using the formula bar, absolute/general cell reference, auto-sum, if then statements, and the Data Analysis Tool-Pack.
4. Create a frequency distribution chart, bar graph, histogram, pie-chart, and other appropriate graphical representations of data and analyze results.
5. Calculate the measures of central tendency including mean, median, and mode and analyze results.
6. Calculate the measures of dispersion including range, standard deviation, and interquartile range and analyze results.
7. Manipulate linear data
8. Create a scatter diagram and residual plot for bivariate data and analyze results.
9. Calculate linear and multiple regression equations, calculate the coefficient of determination and the correlation coefficient, and analyze results.
10. Determine probabilities
11. Calculate factorials, combinations, and permutations.
12. Perform probability simulations using, but not limited to, the random number generator.
13. Calculate binomial probabilities and analyze results.
14. Calculate normal probabilities and analyze results.
15. Supplement higher level problems including single parameter, difference of two parameters, chi-square tests, and significance of slope
16. Calculate critical values and analyze results.
17. Calculate p-values and analyze results.
18. Calculate margin of error and analyze results.
19. **INSTRUCTOR'S EXPECTATIONS OF STUDENTS IN CLASS**
20. **TEXTBOOKS AND OTHER REQUIRED MATERIALS**
21. **REFERENCES**
22. **METHODS OF INSTRUCTION AND EVALUATION**

## **ATTENDANCE REQUIREMENTS**

###### COURSE OUTLINE