**BARTON COMMUNITY COLLEGE**

**COURSE SYLLABUS**

1. **GENERAL COURSE INFORMATION**

Course Number: STAT 1845

Course Title: Business and Economics Statistics II

Credit Hours: 3

Prerequisite: STAT 1840 Business & Economics Statistics I with a grade of C or better OR

STAT 1829 Elements of Statistics with a grade of C or better OR BUSI 1609

Business Statistics with a grade of C or better OR equivalent course

Division/Discipline: Academics Division//Mathematics

Course Description: Continuation of STAT 1840 with applications to business and economic studies; including sample comparisons, analysis of variance, multiple regression, correlation, quality control, time-series, forecasting, business cycles, chi-square tests, and nonparametric methods.

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](mailto:disabilityservices@bartonccc.edu).

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

Business & Economics Statistics II fulfills the college-level math requirement for all associate degrees offered at Barton Community College. The purpose of the course is to introduce the fundamental concepts of probability and statistics in a setting of applications related to the fields of business and economics. This course will provide a base from which students can proceed to more advanced work, including specialized applications. Business & Economics Statistics II is an approved fundamental general education course at Barton Community College that can be used to fulfill degree requirements.

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 appropriate technology as one tool to:

1. Compare Samples
2. Compare means between independent random samples from the same population.
3. Compare means between matched-pair random samples.
4. Compare proportions between independent random samples from the same population.
5. Compare variances between independent random samples from the same population.
6. Perform Chi-Square Procedures
7. Construct a contingency table.
8. Perform a chi-square goodness-of-fit test.
9. Perform a chi-square test of independence.
10. Analyze Designed Experiments
11. Determine the optimum experimental design for a study.
12. Perform a one-way analysis of variance.
13. Perform Post-Hoc Tests on statistically significant differences found in an ANOVA analysis.
14. Perform a two-way analysis of variance.
15. Develop Multiple Regression Models
16. Verify the assumptions required in a multiple linear regression.
17. Develop a best-fit linear regression model for a random sample.
18. Determine confidence intervals for regression parameters.
19. Determine prediction intervals for regression parameters.
20. Determine Statistical Control
21. Describe the purpose of statistical control.
22. Construct an x-bar control chart.
23. Construct an R-control chart.
24. Construct a p-control chart.
25. Assign variations to random or special cause variation.
26. Perform Time Series Analysis
27. Index a time-series to a baseline.
28. Determine trend lines in a time-series.
29. Build a regression model for a time-series.
30. Forecast future values for a time-series model.
31. Assess the fit of a time-series model to sample data.
32. Determine the presence of autocorrelation in a time-series.
33. Perform Nonparametric Statistics
34. Determine an appropriate non-parametric test for a random sample.
35. Perform a sign test.
36. Perform a Wilcoxon rank sum test.
37. Perform a Kruskal-Wallis test.
38. Perform a Spearman's rank correlation test.
39. **INSTRUCTOR'S EXPECTATIONS OF STUDENTS IN CLASS**
40. **TEXTBOOKS AND OTHER REQUIRED MATERIALS**
41. **REFERENCES**
42. **METHODS OF INSTRUCTION AND EVALUATION**

## **ATTENDANCE REQUIREMENTS**

###### COURSE OUTLINE