SYLLABUS

DIVISION: Arts, Sciences, and Business   **REVISED:** Spring 2020

CURRICULA IN WHICH COURSE IS TAUGHT: Business Administration

COURSE NUMBER AND TITLE: BUS 221, Business Statistics I

CREDIT HOURS: 3 HOURS/WK   LEC: 3 HOURS/WK   LAB: NA

I.   **CATALOG DESCRIPTION:** Focuses on statistical methodology in the collection, organization, presentation, and analysis of data; concentrates on measures of central tendency, dispersion, probability concepts and distribution, sampling, statistical estimation, normal and T-distribution, and hypothesis testing for means and proportions.

II.   **RELATIONSHIP OF THE COURSE TO CURRICULA OBJECTIVES:** As a required course for all students enrolled in Business Administration, BUS 221 will broadly address the following DCC Business Administration program objectives.
- o   Calculate, compile, and analyze business data for problem solving.
- o   Demonstrate an awareness of appropriate current and emerging technologies to support business functions.
- o   Use verbal, non-verbal, and written communication skills effectively.
- o   Use critical thinking skills in problem analysis.

Students completing BUS 221 will demonstrate the ability to understand how statistical analysis applies to business practices and be familiar with the vocabulary and concepts associated with the content items listed in sections IV and VI.

III.   **REQUIRED BACKGROUND/PREREQUISTIES:**
MTH 161, Precalculus I or Divisional Approval. If students have developmental studies requirements, MTE 1 through MTE 9 must be completed prior to enrollment.

IV.   **COURSE CONTENT:**
- Introduction to Statistics
- Graphical Representations
- Descriptive Data
- Effective Sampling
- Probability
- Random Variables and Probability Distributions
- Continuous Probability Distributions
- Central Limit Theorem
- Hypothesis Testing
- Chi-square Analysis
- Analysis of Variance
- Correlation
- Simple and Multiple Regression
- Time Series Analysis

V.   THE FOLLOWING GENERAL EDUCATION OBJECTIVES WILL BE ADDRESSED IN THIS COURSE

_ Civic Engagement – The ability to contribute to the civic life and well-being of local, national, and global communities as both a social responsibility and a life-long learning process. Degree graduates will demonstrate the knowledge and civic values necessary to become informed and contributing participants in a democratic society.

X   Critical Thinking – The ability to use information, ideas, and arguments from relevant perspectives to make sense of complex issues and solve problems. Degree graduates will locate, evaluate, interpret, and combine information to reach well-reasoned conclusions and solutions.

_ Professional Readiness – The ability to work well with others and display situationally and culturally appropriate demeanor and behavior. Degree graduates will demonstrate skills important for successful transition into the workplace and pursuit of further education.

X   Quantitative Literacy – The ability to perform accurate calculations, interpret quantitative information, apply and analyze relevant numerical data, and use results to support conclusions. Degree graduates will calculate, interpret, and use numerical and quantitative information in a variety of settings.

X Scientific Literacy – The ability to apply the scientific method and related concepts and principles to make informed decisions and engage with issues related to the natural, physical, and social world. Degree graduates will recognize and know how to use the scientific method, and to evaluate empirical information.

X Written Communication – The ability to develop, convey, and exchange ideas in writing, as appropriate to a given context and audience. Degree graduates will express themselves effectively in a variety of written forms.

VI. **LEARNER OUTCOMES**	VII. **EVALUATION**
Define statistics Differentiate between a population and a sample Differentiate between a parameter and a statistic Construct a graphical representation of data	Written test Homework questions Research project
Calculate and interpret descriptive measures of central location Calculate and interpret descriptive measures of central variability	Written test Homework questions
Discuss various sampling techniques Recognize the importance of collecting an unbiased sample Determine a feasible sampling strategy given a scenario	Written test Homework questions Research project
Calculate and apply basic probabilities Determine if two events display independence Discuss Binomial and Poisson Distributions	Written test Homework questions Class experiment
Recognize the role of the sample size in the Central Limit Theorem Calculate probabilities based on the normal distribution Construct confidence intervals	Written test Homework questions
Test hypotheses about population parameters Perform and interpret a Chi-square test Perform and interpret the analysis of variance procedure	Written test Homework questions Group project Class experiment
Determine if variables correlate with one another Interpret the coefficients of a regression model Identify independent variables for a regression model and test their significance Predict a value for the dependent variable when given a regression model	Written test Homework questions Class experiment