Date Adopted: _____
Date Reviewed: Aug 2015
Date Revised: Aug 2015

BUS 271 – Business Statistics I

I. **BUS 271 – Business Statistics I – 3 Semester Hours**

II. **Course Description**
This is an introductory study of basic statistical concepts applied to economic and business problems. Topics include the collection, classification, and presentation of data, statistical description and analysis of data, measures of central tendency and dispersion, elementary probability, sampling, estimation, and introduction to hypothesis testing.

III. **Prerequisite**
Math 112

IV. **Textbook**
Textbook: Statistical Techniques in Business and Economics, 16th Edition
Publisher: McGraw-Hill
Authors: Lind, Marchal, Wathen

V. **Course Objectives**
1. The student will develop an understanding of the term statistics.
2. The student will understand why and how descriptive statistics used.
3. The student will understand the role probability plays in statistics.
4. The student will learn the concept of probability distribution.
5. The student will be able to appreciate the importance of sampling.
6. The student will learn how results from samples can be used to provide estimates of population characteristics such as population mean, the population variance and the population proportion.
7. The student will learn how to formulate and test hypotheses about a population mean and a population proportion.

VI. **Course Outline of Topics**
1. The student will develop an understanding of the term statistics. The student will:
    a) define statistics.
    b) define and distinguish between a population and a sample.
    c) work mathematical problems involving:
        1) fractions
        2) equations
        3) inequalities
        4) subscriptions
        5) summations
        6) factorial
2. The student will understand why and how descriptive statistics are used. The student will:
    a) define the term data.
    b) define and classify variables as either discrete or continuous.
    c) define and classify variables as either quantitative or qualitative.
3. The student will construct and interpret tabular summarization procedures for quantitative data such as:
    a) frequency and relative frequency distributions.
    b) cumulative frequency and cumulative relative frequency distributions.

1) define and compute measures of location:
    a. mean
    b. median
    c. mode
2) compute measures of dispersion:
    a. range
    b. variance
    c. standard deviation

4. The student will understand the role of probability plays in statistics.
5. The student will be able to define probability.
6. The student will be able to measure probability of discrete and continuous variables.
   The student will:
    a) be able to name and apply the laws of probability as they relate to variables.
7. The student will learn the concepts of a probability distribution.
   The student will:
    a) be able to solve problems using the binomial distribution.
    b) be able to solve problems using the normal distribution.
    c) compute and interpret expected value.
    d) revise initial (prior) probability estimates based on new information.
    e) use the normal distribution as an approximation of the binomial probabilities.
8. The student will be able to appreciate the importance of sampling.
   The student will:
    a) define sampling.
    b) define random sampling.
    c) define and differentiate between a parameter and a statistic.
    d) be able to relate the concept of a sampling distribution to a statistic.
    e) calculate the sample mean and sample proportion.
9. The student will learn how results from samples can be used to provide estimates of population characteristics such as the population mean, the population variance and the population proportion.
   The student will:
    a) define statistical inference.
    b) define point estimator and confidence interval.
    c) calculate a point estimate and construct a confidence internal for the following parameters:
        1) mean
        2) population
    d) be able to determine the size of a simple random sample necessary to estimate a population mean and/or a population proportion with a specified level of precision.
    e) be able to use the “t” distribution in constructing an interval estimate of a population mean.
10. The student will learn how to formulate and test hypotheses about a population mean and a population proportion.
    The student will:
    a) be able to summarize the steps in hypotheses testing.
    b) define Type I and Type II errors.
    c) be able to determine the probability of making Type I and Type II errors.
    d) be able to calculate (test) and to evaluate hypotheses about:
        1) mean
        2) proportions
        3) variances (one-trial and two-trial tests)

VII. **Evaluation and Assessment**
Evaluation and assessment will be determined by the instructor and specified on the instructor's class syllabus. Grades will be based upon following scale: A = 90 – 100%, B = 80 – 89%, C = 70 – 79%, D = 60 – 69%, and F = below 60%.

VIII. **Attendance**
Students are expected to attend all classes for which they are registered. Students who are unable to attend class regularly, regardless of the reason or circumstance, should withdraw from that class before poor attendance interferes with the student's ability to achieve the objectives required in the course. Withdrawal from class can affect eligibility for federal financial aid.

IX. **Statement on Discrimination/Harassment**
The College and the Alabama State Board of Education are committed to providing both employment and educational environments free of harassment or discrimination related to an individual's race, color, gender, religion, national origin, age, or disability. Such harassment is a violation of State Board of Education policy. Any practice or behavior that constitutes harassment or discrimination will not be tolerated.

X. **Americans with Disabilities**
The Rehabilitation Act of 1973 (Section 504) and the Americans with Disabilities Act of 1990 state that qualified students with disabilities who meet the essential functions and academic requirements are entitled to reasonable accommodations. It is the student's responsibility to provide appropriate disability documentation to the College. The ADA Accommodations Office is in FSC 305 (205-856-7731).