# 7/27/2020

# brcc keystone logo

Baton Rouge Community College

*Academic Affairs Master Syllabus*

Date Approved: 2 September 2020

Term and Year of Implementation: Fall 2020

**Course Title:** Elementary Statistics

**BRCC Course Rubric:** MATH 1303

**Previous Course Rubric**: MATH 204

**Lecture Hours per week-Lab Hours per week-Credit Hours**: 3-0-3

**Per semester: Lecture Hours-Lab Hours-Instructional Contact Hours**: 45-0-45

**Louisiana Common Course Number:** CMAT 1303

**CIP Code:** 27.0501

**Course Description:** Introduces students to probability and statistics for students majoring in nursing, social science, and other non-math disciplines. The course will cover both descriptive and inferential statistics. Topics include measures of central tendency and variation, probability, counting techniques, probability distributions, the Central Limit Theorem, estimation, hypothesis testing, correlation and regression. Note that credit will not be awarded for this course and for MATH 2303 (MATH 202) and MATH 2313 (MATH 203).

**Prerequisites:** Appropriate placement test score or MATH 1113 (or MATH 101) or MATH 1213 (or MATH 110) or MATH 1235 (or MATH 120) with a grade of C or better

**Co-requisites:** None

**Suggested Enrollment Cap:** 30

**Learning Outcomes.** *Upon successful completion of this course, the students will be able to:*

1. Understand and demonstrate Descriptive Statistics – overview, data collection, graphs, distributions, measures of central tendency and variation.

2. Find Probability and Probability Distributions – probability theory, discrete probability distributions.

3. Understand and demonstrate Normal Probability Distributions – finding probabilities and values, sampling distributions and the central limit theorem.

4. Find and explain Confidence Intervals – for a mean and proportion.

5. Understand and demonstrate Hypothesis Testing – apply the five step process, mean, proportions.

6. Compute the equation of the regression line, the coefficient of determination, the standard error of the estimate and correlation coefficient. The student will find a prediction interval.

**General Education Learning Outcome(s):** This course supports the development of competency in the following area(s). Students will:

Represent mathematical information numerically, symbolically, and visually, using graphs and charts. (General Education Competency: Quantitative and Symbolic Reasoning)

**Assessment Measures.** Assessment of all learning outcomes will be measured using the following methods:

1. Instructor created exams and or homework

2. A comprehensive final exam

**Information to be included on the Instructor’s Course Syllabi:**

* ***Disability Statement*:** Baton Rouge Community College seeks to meet the needs of its students in many ways. See the Office of Disability Services to receive suggestions for disability statements that should be included in each syllabus.
* ***Grading:*** The College grading policy should be included in the course syllabus. Any special practices should also go here. This should include the instructor’s and/or the department’s policy for make-up work. For example in a speech course, “Speeches not given on due date will receive no grade higher than a sixty” or “Make-up work will not be accepted after the last day of class”.
* ***Attendance Policy*:** Include the overall attendance policy of the college. Instructors may want to add additional information in individual syllabi to meet the needs of their courses.
* ***General Policies*:** Instructors’ policy on the use of things such as beepers and cell phones and/or hand held programmable calculators should be covered in this section.
* ***Cheating and Plagiarism*:** This must be included in all syllabi and should include the penalties for incidents in a given class. Students should have a clear idea of what constitutes cheating in a given course.
* ***Safety Concerns:*** In some courses, this may be a major issue. For example, “No student will be allowed in the lab without safety glasses”. General statements such as, “Items that may be harmful to one’s self or others should not be brought to class”.
* ***Library/ Learning Resources:*** Since the development of the total person is part of our mission, assignments in the library and/or the Learning Resources Center should be included to assist students in enhancing skills and in using resources. Students should be encouraged to use the library for reading enjoyment as part of lifelong learning.

**Expanded Course Outline:**

I. Introduction to Statistics

1. An Overview of Statistics

2. Data Classification

3. Experimental Design

II. Descriptive Statistics

1. Frequency Distributions and Their Graphs

2. Measures of Center Tendency

3. Measures of Variation

III. Probability

1. Basic Concepts of Probability and Counting

2. Conditional Probability and the Multiplication Rule

3. Addition Rule

IV. Probability Distributions

1. Probability Distributions

2. Binomial Probability Distributions

V. Normal Probability Distributions

1. Introduction to Normal Distribution and Standard Normal Distribution

2. Normal Distributions: Finding Probabilities

3. Normal Distributions: Finding Values

4. Sampling Distributions and The Central Limit Theorem

VI. Confidence intervals

1. Confidence Intervals for Mean (Large Samples)

2. Confidence Intervals for Mean (Small Samples)

3. Estimating a Population Proportion

VII. Hypothesis Testing

1. Introduction of Hypothesis Testing

2. Hypothesis Testing for the Mean (large Samples)

3. Hypothesis Testing for the Mean (Small Samples)

4. Hypothesis Testing for Proportions

VIII. Correlation and Regression

1. Correlation

2. Regression