# 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:** Calculus for Non-Science Majors

**BRCC Course Rubric:** MATH 2103

**Previous Course Rubric**: MATH 201

**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 2103

**CIP Code:** 27.0101

**Course Description:** Focuses on limits, continuity, and differential and integral calculus for algebraic, logarithmic, and exponential functions. Introduces applications in business and economics, such as optimization, marginal analysis, and exponential growth models.

**Prerequisites:** MATH 1113 (or MATH 101) or MATH 1213 (or MATH 110) or MATH 1235 (or MATH 120) with 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. Evaluate limits analytically and numerically.

2. Solve problems involving rates of change, optimization, and curve sketching by evaluating and applying derivatives of transcendental functions.

3. Calculate basic definite and indefinite integrals.

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

Use processes and models to solve quantitative problems. (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. Comprehensive departmental 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. Prerequisite skills review

A. Basic Algebra review

B. Modeling with linear data sets

C. Modeling non-linear data sets

II. Functions, Limits and the Derivatives

A. Limits

B. One-Sided Limits and Continuity

C. Derivatives

III. Differentiation

A. Basic Differentiation Rules

B. The Product and Quotient Rules

C. The Chain Rule

D. Marginal Functions in Economics

E. Implicit Differentiation and Related Rates

F. Differentiation

IV. Applications of the Derivatives

A. Application of the First Derivative

B. Application of the Second Derivative

C. Optimization I

D. Optimization II

V. Exponential and Logarithmic Functions

A. Exponential Functions (student review)

B. Logarithmic Functions (student review)

C. Differentiation of Exponential Functions

E. Differentiation of Logarithmic Functions

F. Exponential Functions as mathematical Models

VI. Integration

A. Antiderivatives and the Rules of Integration

B. Integration by Substitution

C. The Fundamental Theorem of Calculus

D. Evaluating Definite Integrals

E. Area between Two Curves