

LABETTE COMMUNITY COLLEGE BRIEF SYLLABUS

SPECIAL NOTE:

This brief syllabus is not intended to be a legal contract. A full syllabus will be distributed to students at the first class session.

TEXT AND SUPPLEMENTARY MATERIALS USED IN THE COURSE (if any):

Please check with the LCC bookstore <http://www.labette.edu/bookstore> for the required texts for this class.

COURSE NUMBER: MATH 127

COURSE TITLE: BUSINESS CALCULUS

SEMESTER CREDIT HOURS: 3

DEPARTMENT: Mathematics

DIVISION: General Education

PREREQUISITES: Placement Test Recommendation of MATH 125
Trigonometry or higher or C or better in
MATH 115 – College Algebra

REVISION DATE: 04/2014

COURSE DESCRIPTION:

This course begins with a review of basic algebra skills. The course includes the operation of differentiation of single and multi-variable functions. The power, sum and difference, product, quotient, and chain rules for differentiating various functions will be covered. The course will then cover the anti-derivative and various methods of integrating functions. Emphasis will be given to applications in the fields of business and accounting.

COURSE OUTCOMES AND COMPETENCIES:

Students who successfully complete this course will be able to:

1. Learn and apply the concepts and properties of the limit of a function.

- Use graphs, input/output tables, and properties of continuity to take limits of functions.
- Apply algebraic properties of limits to functions.
- Calculate the average rate of change of functions to establish quantities like average production, average cost, average revenues, etc.
- Take the limit of the average rate of change to define the derivative of a function.

2. Learn and apply the concepts and properties of the derivative of a function.

- Apply the concept of the derivative as the rate of change of a function in applications of marginal profit, revenue, cost, etc. as well as rate of change applications in the sciences.
- Apply differentiation techniques (power rule, sum-difference, product, quotient, and chain rules) to various functions.
- Evaluate and test the first and second derivative to maximize, minimize, and optimize functions with applications in business and economics.
- Estimate changes in value using differentials.

3. Apply properties of limits and derivatives to the exponential and logarithmic functions.

- Learn basic derivative properties of the exponential and log functions of any base.
- Apply the exponential and log functions to discuss growth and decay applications in business, economics, and the sciences.

4. Learn techniques to determine the anti-derivative and the integral of functions used in the class.

- Find the anti-derivative of functions used in the class.
- Evaluate the area under a curve as the integral and apply units of measure to interpret the meaning of this area.
- Use techniques such as U, dU substitution, Parts, and Tables of Integrals to find the integral of various more complicated functions.
- Apply the integral to problems in business and economics.

The learning outcomes and competencies detailed in this syllabus meet, or exceed the learning outcomes and competencies specified by the Kansas Core Outcomes Project for this course, as sanctioned by the Kansas Board of Regents.