

Course Description

Prerequisite: A grade of “C” or better in MATH 1021 or consent of the department. Differential and integral calculus of algebraic, logarithmic, and exponential functions with applications to business and economics.

Course Objectives

Students will:

1. Understand the fundamentals of calculus with business and economic applications as presented in the topical outline.
2. Develop critical thinking and problem solving skills.

Procedures to Evaluate these Objectives

1. In-class problems after concept presentation
2. In-class exams
3. Cumulative final exam

Use of Results of Evaluation to Improve the Course

1. Student responses to in-class problems will be used to immediately help clarify any misunderstandings and to later adjust the appropriate course material.
2. All exams will be graded and examined to determine areas of teaching which could use improvement.
3. All evaluation methods will be used to determine the efficacy of the material presentation.

Detailed Topical Outline

1. Review
 - a. Functions and graphs
 - b. Linear functions
2. Limits
 - a. Introduction to limits
 - b. Continuity
 - c. One-sided limits
 - d. Limits at infinity
 - e. Infinite limits
3. Derivatives
 - a. Definition
 - b. Rules of differentiation
 - c. Techniques of differentiation
 - d. Applications of the derivative

- e. Higher Order derivatives
- f. Exponential and Logarithmic Functions
- 4. Additional Applications of the Derivative
 - a. Increasing/decreasing functions
 - b. Extrema
 - c. Concavity and inflection
- 5. Integration
 - a. Rules of Integration
 - b. Techniques of Integration
 - c. Exponential and Logarithmic Functions
 - d. Definite Integrals
 - e. Area between curves
 - f. Applications