# MA 122 Calculus for Business and Life Sciences II

**Course Description:**

Integral calculus with application in engineering, business, economics, and the management, life, and social sciences.

# Credit Hours: 3

**Course Objectives:**

* + - * Business, life science, and engineering technology students will learn applied concepts of integral calculus
      * Students will become fluent in concepts of exponential and logarithmic derivative functions
      * Students will be able to conceptualize and explain anti differentiation
      * Students will practice and apply integration by parts and substitution
      * Students will apply integral mathematics to real world applications.

# Course Content:

The Exponential and Logarithmic Functions The Exponential Function

The Logarithmic Function

The Derivatives of the Exponential and Logarithmic Functions Applications of the Exponential Function

Basics of Trigonometry

Right Triangle Trigonometry

The Unit Circle

Pythagorean and Symmetric Identities

The Sine, Cosine, and Tangent functions and their Inverses

The Derivatives of the Sine, Cosine, and Tangent Functions

Functions of Two or More Variables

Partial Derivatives and Maxima and Minima

Applications

Anti-differentiation Antiderivatives

Integration by Substitution Integration by Parts

Tables of Integral

A Brief Table of Integral The Definite Integral

The Area Under a Curve Properties of the Definite Integral Some Applications of Integration The Riemann Integral

Application of the Riemann Integral to Business Improper Integral

Number Integration Techniques Other topics as time permits

**Evaluation:** There are at least three 50 minute examination during the semester plus a final exam.

# ACCOMMODATION STATEMENT:

In accordance with the Americans with Disabilities Act (ADA) and Section 504 of the Rehabilitation Act of 1973, the University offers reasonable accommodations to students with eligible documented learning, physical and/or psychological disabilities. Under Title II of the Americans with Disabilities Act (ADA) of 1990 and Section 504 of the Rehabilitation Act of 1973, a disability is defined as a physical or mental impairment that substantially limits one or more major life activities as compared to an average person in the population. It is the responsibility of the student to contact ***Developmental Services*** prior to the beginning of the semester to initiate the accommodation process and to notify instructors within the first three class meetings to develop an accommodation plan. Appropriate, reasonable accommodations will be made to allow each student to meet course requirements, but no fundamental or substantial alteration of academic standards will be made. Students needing assistance should contact ***Developmental Services.***

# UNIVERSITY OF NORTH ALABAMA