

**Math 150 Introduction to Calculus****Credit Hours:** 3**Scheduled hours per week**

Lecture: 3

Lab: 0

Other: 0

**Catalog Course Description:** For students in other disciplines needing calculus for applications. Limits of sequences and functions, continuity, derivatives, and integrals of polynomials, rational functions, and exponential and logarithmic functions, partial derivatives, maxima and minima.

**Pre-requisites:** C or Better in Math 126, satisfactory score on placement test or ACT Math Score  $\geq 25$

**Co-requisites:** None

**Course Learning Outcomes:**

1. Students will be able to evaluate limits graphically, algebraically, and numerically.
2. Students will be able to find the values on which a function is continuous.
3. Students will be able to find a derivative using the definition.
4. Students will be able to find derivatives of algebraic functions, exponential functions, and log functions using the laws of differentiation.
5. Students will solve applied problems dealing with related rates, and maximums and minimums
6. Students will apply calculus techniques to graph functions.
7. Students will find indefinite integrals
8. Students will find definite integrals.

**Topics to be studied:**

Algebra review function notation and operations, slope, equations of lines

Limits

Continuity

Definition of derivative

Laws of differentiation

Applications of the derivative to graphing

Related Rates

Applications dealing with extrema

Indefinite integrals

Definite integrals

Derivatives and integrals of exponential and log functions

**Relationship of course to program outcomes:**

(What program outcomes are being met by this course?)

For general education courses, a listing of the general education competencies that are met.)

<b>Relationship of Course to Mathematics (MATH) Student Learning Outcomes:</b>	
<b>Demonstrate understanding</b> of the language of mathematics, by their use of symbols, definitions, word phrases, and representations.	x
<b>Display proficiency</b> in mathematical computations.	x
<b>Implement mathematical techniques</b> to solve applied problems.	x
<b>Employ appropriate technology</b> to demonstrate knowledge of mathematical concepts.	x
<b>Exhibit mastery</b> of core course competencies.	x
<b>10/20/2017</b>	

<b>Relationship of Course to General Education Learning Outcomes:</b>	
<b>Composition and Rhetoric</b> Students illustrate a fundamental understanding of the best practices of communicating in English and meet the writing standards of their college or program-based communication requirements.	
<b>Science &amp; Technology</b> Students successfully apply systematic methods of analysis to the natural and physical world, understand scientific knowledge as empirical, and refer to data as a basis for conclusions.	
<b>Mathematics &amp; Quantitative Skills</b> Students effectively use quantitative techniques and the practical application of numerical, symbolic, or spatial concepts.	x
<b>Society, Diversity, &amp; Connections</b> Students demonstrate understanding of and a logical ability to successfully analyze human behavior, societal and political organization, or communication.	
<b>Human Inquiry &amp; the Past</b> Students interpret historical events or philosophical perspectives by identifying patterns, applying analytical reasoning, employing methods of critical inquiry, or expanding problem-solving skills.	
<b>The Arts &amp; Creativity</b> Students successfully articulate and apply methods and principles of critical and creative inquiry to the production or analysis of works of art.	
<b>5/3/2016</b>	

**Special requirements of the course:** None**Additional information:** None**Prepared by:** Andrew Carpenter**Date:** 10/20/2017