

Course Outcome Guide (COG)

Course:	Math 146: Applied Calculus	Credits:	3		
Course Description:	Prerequisite: MATH 103 or Placement. Limits, derivatives, integrals, exponential and logarithmic functions, and applications.				
Concepts and Issues	Process Skills	Assessment Tasks	Intended Outcomes		
			Course	Program	Institutional
<ul style="list-style-type: none"> • Rational Expressions • Cartesian Coordinate System • Slope • Functions • Mathematical Modeling • Limits • Continuity • Differentiation and Rules • Rates of Change • Higher-Order Derivatives • Optimization • Inflection Points • Exponential and Logarithmic Functions • Integration and Rules • U Substitution • Definite Integrals • Area 	<ul style="list-style-type: none"> • Simplify and factor rational expressions. • Calculate slopes of both lines and curves • Evaluate the properties of functions. • Use functions to model real-world problems. • Calculate limits, including limits at infinity. • Identify continuous functions. • Calculate derivatives using the definition of a derivative. • Calculate derivatives using the product rule, quotient rule, chain rule, and other commonly-used methods of differentiation. • Apply rules of differentiation to real-world rate of change problems. • Use differentiation to summarize the properties of a curve, including extrema and inflection points. • Identify properties of exponential and logarithmic functions. • Perform differentiation techniques on exponential and logarithmic functions. • Find indefinite integrals, including integration by substitution. • Calculate definite integrals. • Use integration to find the area underneath a curve. 	<ul style="list-style-type: none"> • Complete textbook readings, questions, and problems demonstrating mastery of both concepts and process skills. • Complete examinations demonstrating mastery of both concepts and process skills. 	<ol style="list-style-type: none"> 1. Apply fundamental principles of Calculus to Business, Physics, Biology, and other job-related problems. 2. Incorporate Calculus skills into future mathematics-related coursework. 	<ol style="list-style-type: none"> 2. Students will use reasoning skills to analyze and solve problems. 	<ol style="list-style-type: none"> 2. Students will use reasoning skills to analyze and solve problems.