

Course Outcome Guide (COG)

Approved: September ??, 2018

Course:	Math 165 Calculus I	Credits:	4		
Course Description:	Limits, continuity, differentiation, Mean Value Theorem, integration, Fundamental Theorem of Calculus, and applications. Prerequisite: Math 105 or Math 107 or placement test				
Concepts and Issues	Process Skills	Assessment Tasks	Intended Outcomes		
			Course	Program	Institutional
<ul style="list-style-type: none"> Limits Continuity Derivatives Implicit and explicit differentiation Extrema Rolle's Theorem Mean Value Theorem First derivative test Second derivative test Curve sketching Optimization problems Newton's Method Antiderivatives Area under a curve Riemann Sums The Fundamental Theorem of Calculus Integration Area of a region between two curves Volume Work Fluid pressure 	<ul style="list-style-type: none"> Evaluate limits graphically, numerically, and analytically Discuss continuity of a function on given intervals Compute the equation of the tangent line to a function Use the first and second derivative tests to sketch function curves Evaluate limits at infinity Use calculus to solve optimization problems Use integration to find the area under a given curve Find the area bounded between two functions Calculate the volume of a solid using the Disk or Shell method Calculate the pressure on an object caused by fluid force 	<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. 	<ul style="list-style-type: none"> Communicate using correct mathematical terminology and notation. Analyze real-world applications and recognize methods to model them. Apply appropriate algebraic methods to solve functions and applications 	<p>2. Students will use reasoning skills to analyze and solve problems.</p>	<p>2. Students will use reasoning skills to analyze and solve problems.</p>