



Course Number Course Name	Math 1430 Calculus for Business and Life Sciences
Credit Value (Breakdown of theory and lab credits)	4 Theory
Catalog Course Description	An algebraic and graphical study of derivatives and integrals, with an emphasis on applications to business, social science, economics, and the sciences. Prerequisite: MATH 1220. (4, 4T+0L)
Student Learning Outcomes/Objectives /Competencies of the Course	<p>Student Learning Outcomes:</p> <ol style="list-style-type: none"> 1. Find limits algebraically and graphically, and use limits to analyze continuity. 2. Find the derivative of a function by applying appropriate techniques (limit of the difference quotient, general derivative rules, product rule, quotient rule, chain rule, and higher order derivatives). 3. Perform implicit differentiation. Use implicit differentiation to solve related rate application problems. 4. Use the derivative to describe the rate of change and slope of a curve in general and at particular points. Compare and contrast average rates of change to instantaneous rates of change. 5. Find the maxima, minima, points of inflections, and determine concavity of a function by applying the first and second derivatives. Use these results to sketch graphs of functions and to solve optimization problems in context. 6. Find the antiderivative and indefinite integral functions to include integration by substitution. Apply the Fundamental Theorem of Calculus in computing definite integrals of functions. 7. Approximate the area under the curve using Riemann sums. 8. Use the integral to determine the area under a curve and to find the accumulated value of a function in context. 9. Solve contextual problems by identifying the appropriate type of function given the context, creating a formula based on the information given, applying knowledge of algebra and calculus, and interpreting the results in context. 10. Communicate mathematical information using proper notation and verbal explanations.
College-Wide Student Learning Outcomes	<p>Math 1430 learning objectives align with the following NNMC College Wide Goal:</p> <p><i>Critical thought: Students are required to analyze and synthesize information and draw reasoned conclusions.</i></p>