

## MATH1134 - Calculus I

Credits:	5 (5/0/0)
Description:	Meets MnTC Goal Areas 2 and 4. This course includes limits and continuity, derivatives, definite and indefinite integrals of algebraic, trigonometric, exponential and logarithmic functions, and applications of the derivative and definite integral.
Prerequisites:	• MATH1116 OR • MATH1118 OR • MATH1115 • or by placement exam
Corequisites:	
Pre/Corequisites*:	
Competencies:	<ol> <li>Examine precalculus concepts including algebraic functions and graphs.</li> <li>Explore the concepts of limits and continuity.</li> <li>Discover the derivative through the limit process and the tangent line problem.</li> <li>Perform the basic differentiation techniques.</li> <li>Apply differentiation to find extrema.</li> <li>Find area using Riemann sums and integration.</li> <li>Utilize the fundamental theorems of Calculus to evaluate definite integrals.</li> <li>Perform numerical integration and integration by substitution.</li> <li>Differentiate and integrate logarithmic functions.</li> <li>Differentiate and integrate exponential functions.</li> <li>Perform differentiation using the chain rule.</li> <li>Utilize implicit differentiation.</li> <li>Differentiate using the product and quotient rules.</li> <li>Utilize the Mean Value Theorem and Rolle's Theorem.</li> <li>Use differentiation for graphing, related rates, differentials, and optimization.</li> <li>Perform basic integration techniques.</li> </ol>
MnTC goal areas:	Critical Thinking     Mathematics/Logical Reasoning

<sup>\*</sup>Can be taking as a Prerequisite or Corequisite.