

# Calculus 1



The following learning targets represent the major concepts studied and assessed in this course.

<b>Unit P</b> <b><i>Precalculus Review</i></b>	P.1 Graphs and Models P.2 Linear Models and Rates of Change P.3 Functions and Their Graphs P.4 Fitting Models to Data
<b>Unit 1</b> <b><i>Limits and Continuity</i></b>	Introduction to calculus and limits Finding limits graphically and algebraically Limits and continuity Infinite limits Special limits - squeeze theorem and intermediate value theorem
<b>Unit 2</b> <b><i>Differentiation: Definition and Properties</i></b>	Definition of the derivative Power rule of the derivative Product and quotient rule of the derivative Chain rule of the derivative Implicit differentiation
<b>Unit 3</b> <b><i>Related Rates and Other Applications of Derivatives</i></b>	Related Rates
<b>Unit 4</b> <b><i>Differentiation: Transcendental and Inverse Functions</i></b>	Derivative of exponential and logarithmic functions Derivatives of inverse functions Derivatives of inverse trigonometric functions
<b>Unit 5</b> <b><i>Analytical Applications of Derivatives</i></b>	Introduction to graphs of derivatives Extreme values and critical numbers First derivative test Second derivative test Mean value theorem L'Hopital's rule Optimization
<b>Unit 6</b> <b><i>Integration and Area Under a Curve</i></b>	Basic integration - power rule U-Substitution of integration Area under the curve Area under the curve with summation and definite integral Fundamental theorem of calculus Applications of integration
<b>Unit 7</b>	Area between two curves Disk and washer method for a solid of revolution Slope fields