

# AP Calculus AB Curriculum Map

*Textbook:* Larson, R. and Edwards, B. (2014). *Calculus of a Single Variable, AP Edition Updated*. 10th ed.

<b>TOPICS &amp; TEXTBOOK CHAPTERS</b>	<b>Duration</b>	<b>Month(s)</b>
<b>Unit 1: Limits and Their Properties</b> <u>Chapter 1:</u> Finding Limits Graphically and Numerically, Evaluating Limits Analytically, Continuity, One-Sided Limits, Infinite Limits	3 wks	Aug-Sept
<b>Unit 2: Differentiation</b> <u>Chapter 2:</u> Derivatives, Tangent Line Problem, Basic Differentiation Rules, Rates of Change, Product & Quotient Rules, Higher Order Derivatives, Chain Rule, Implicit Differentiation, Related Rates	5 wks	Sept-Oct
<b>Unit 3: Applications of Differentiation</b> <u>Chapter 3:</u> Extrema on an Interval (Max/Min), Rolle's Theorem, Mean Value Theorem, Increasing and Decreasing Functions, First Derivative Test, Concavity, Second Derivative Test, Limits at Infinity, Optimization Problems	5 wks	Oct-Nov
<b>Unit 4: Integration</b> <u>Chapter 4:</u> Antiderivatives, Indefinite Integration, Area, Riemann Sums, Definite Integrals, Fundamental Theorem of Calculus, 2 <sup>nd</sup> Fundamental Theorem of Calculus, Accumulation, Average Value, Mean Value Theorem for Integrals	4 wks	Nov-Dec
<b>Unit 5: Logarithmic, Exponential, and Other Transcendental Functions</b> <u>Chapter 4:</u> Integration by Substitution, Net Change Theorem, Integration Applications to Motion on a Line <u>Chapter 5:</u> Differentiation and Integration of the Natural Logarithmic Function, Inverse Functions, Differentiation and Integration of Exponential Functions, Bases other than e, Exponential Growth and Other Applications, Differentiation and Integration of Inverse Trigonometric Functions <u>Chapter 8:</u> L'Hôpital's Rule	6 wks	Jan-Feb
<b>Unit 6: Differential Equations</b> <u>Chapter 6:</u> Slope Fields, Separable Differential Equations, Exponential Growth, Newton's Law of Cooling	3 wks	Feb-Mar
<b>Unit 7: Applications of Integration</b> <u>Chapter 7:</u> Area of a Region Between Two Curves, Accumulation, Average Value of a Function, Volume (Disk Method & Washer Method), Volume of Solid with Known Cross-Sections <u>Chapter 4:</u> Riemann Sum Approximations, Trapezoidal Sum, Midpoint Sum	4 wks	Mar-Apr
<b>Unit 8: AP Exam Strategies &amp; Review</b> Free Response, Multiple Choice, Calculator and Non-Calculator Strategies	4 wks	Apr-May