

# AP Calculus BC Curriculum Map

## Spring Semester

The spring semester of AP Calculus BC may be taken concurrently by students who are taking AP Calculus AB in the same year or by students who have taken the fall semester of AP Calculus BC following a previous year's study of AP Calculus AB. The BC Exam at the end of the semester tests students on both AB and BC topics.

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

<b>TOPICS &amp; TEXTBOOK CHAPTERS, SPRING SEMESTER</b>	<b>Duration</b>	<b>Month(s)</b>
<b>Unit 1: Infinite Series</b> <u>Chapter 8:</u> Improper Integrals <u>Chapter 9:</u> Sequences, Series, Convergence, Geometric Series, Integral Test, p-Series, Comparisons of Series, Alternating Series, Alternating Series Remainder, Conditional Convergence, Absolute Convergence	3 wks	Jan
<b>Unit 2: Taylor Polynomials and Power Series</b> <u>Chapter 9:</u> Ratio and Root Tests, Taylor Polynomials and Approximations, Power Series, Representation of Functions by Power Series, Taylor and Maclaurin Series	2 wks	Jan-Feb
<b>Unit 3: Representation of Functions by Power Series</b> <u>Chapter 9:</u> Representation of Functions by Power Series, Taylor and Maclaurin Series, Differentiation and Integration of Power Series, Using Series as Building Blocks to Form New Series	2 wks	Feb
<b>Unit 4: Taylor Series, Parametric Functions, and Polar Functions</b> <u>Chapter 9:</u> Taylor's Remainder (Lagrange Error Bound) <u>Chapter 10:</u> Plane Curves, Parametric Equations, Calculus of Parametric Equations, Polar Coordinates and Polar Graphs, Polar Derivatives	2 wks	Feb-Mar
<b>Unit 5: Polar Integrals, Arc Length, and Vectors</b> <u>Chapter 10:</u> Area of Region in Polar Coordinates <u>Chapter 7, 10:</u> Arc Length <u>Chapter 11:</u> Vectors	2 wks	Mar
<b>Unit 6: Miscellaneous BC Topics</b> <u>Supplement:</u> Motion in the Plane, Velocity, Acceleration, Distance Traveled <u>Chapter 6:</u> Euler's Method, Logistic Growth <u>Chapter 8:</u> Integration By Parts, Integration by Method of Partial Fractions	2 wks	Mar-Apr
<b>Unit 7: AP Exam Strategies &amp; Review</b> Free Response, Multiple Choice, Calculator and Non-Calculator Strategies	4 wks	Apr-May