AP Calculus BC Year at a Glance

Scope and Sequence 2025-2026

Please Note: All standards in the state course description are designed to be learned by the end of the course. This guide represents a recommended timeline and sequence to be used voluntarily by teachers for planning purposes. Specific question regarding when content will be addressed in a specific course are best answered by the individual teacher.

Course Resources

Publisher Resource:

Calculus: Graphical, Numerical, Algebraic 6e, Savvas Learning Company (Clever – use your active directory; does not support Internet Explorer)

Supplemental Resources:

Khan Academy (does not support Internet Explorer)

AP Classroom

In AP Calculus AB, instructional time will emphasize ten areas:

(1) Limits and Continuity
(2) Differentiation: Definition and Fundamental Properties
(3) Differentiation: Composite, Implicit, and Inverse Functions
(4) Contextual Applications of Differentiation
(5) Analytical Applications of Differentiation
(6) Integration and Accumulation of Change
(7) Differential Equations
(8) Applications of Integration
(9) Parametric Equations, Polar Coordinates, and Vector-Valued Functions
(10) Infinite Sequences and Series

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Quarter 1 (August 11 – October 10)

Chapter 0: Prerequisites for Calculus
Students will graph, solve and evaluate functions (linear, exponential, parametric, and trigonometric).

Prologue: Foundations of Calculus
Students will be introduced to problems of accumulation and rate of change problems. Students will approximate solutions to these problems and begin to see how approximations can become more accurate.

Chapter 1: Limits and Continuity
Students will calculate and interpret rate of change and limits. Students will identify and understand intervals in which functions are continuous and apply the Intermediate Value Theorem. Students will find the equation of a tangent line and calculate the average rate of change.

Chapter 2: Derivatives
Students will calculate and graph the derivate of functions. They will use derivates to calculate rate of change, analyze straight line motion and measure sensitivity to change.

Chapter 3: More Derivatives
Students will use the Chain Rule and the Powe Rule to calculate derivatives. Students will calculate derivatives of trigonometric, exponential, and logarithmic functions.

Chapter 4: Applications of Derivatives
Students will determine the local or global extreme values of a function and apply the Mean Value Theorem to find values in which a function is increasing or decreasing. Students will solve application problems involving finding maximum and minimum values. Students will estimate the change in a function using differentials. Students will solve related rate problems.

Quarter 2 (October 14 – December 19)

Chapter 4: Applications of Derivatives
Students will determine the local or global extreme values of a function and apply the Mean Value Theorem to find values in which a function is increasing or decreasing. Students will solve application problems involving finding

maximum and minimum values. Students will estimate the change in a function using differentials. Students will solve related rate problems.

Chapter 5: The Definite Integral
Students will calculate the area under a curve. Students will apply rules for definite integrals and find the average value of a function in a closed interval. Students will learn and apply the Fundamental Theorem of Calculus. They will approximate definite integrals by using the trapezoidal sum and Simpson's Rule.

Chapter 6: Differential Equations and Mathematical Modeling
Students will solve initial values problems, construct and interpret slope fields and use Euler's Method to approximate solutions. Students will compute and definite integrals using substitution. Students will use integration by parts to evaluate and integrate problems involving indefinite and definite integrals as well as trigonometric and logarithmic functions. Students will solve problems involving exponential growth and decay.

Quarter 3 (January 5 – March 12)

Chapter 7: Applications of Definite Integrals
Students will apply the definite integral to problems involving motion and to solve problems involving accumulation. Students will use the definite integral to calculate areas of region in a plane, volumes of solids and lengths of curves in a plane.

Chapter 8: Sequences, L'Hospital's Rule, and Improper Integrals
Students will define explicit and recursive sequences and use properties of limits to find the limit of sequences. Students will find limits of indeterminate forms using L'Hospital's Rule, they will use limits to evaluate improper integrals.

Chapter 9: Infinite Series
Students will differentiate, integrate, or substitute into a know power series, they will use derivatives to find the Taylor's series. They will learn and apply Taylor's Theorem. Students will determine the convergence or divergence of a series or the radius of convergence of a power series. They will also test the convergence of series at endpoints.

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Quarter 4 (March 23 – May 29)
Chapter 9: Infinite Series Students will differentiate, integrate, or substitute into a known power series, they will use derivatives to find the Taylor's series. They will learn and apply Taylor's Theorem. Students will determine the convergence or divergence of a series or the radius of convergence of a power series. They will also test the convergence of series at endpoints. **Chapter 10: Parametric, Vector, and Polar Functions** Students will find derivatives and second derivatives and calculate lengths of parametrically defined functions. Students will perform algebraic computations involving vectors as well as use vectors to solve problems involving planar motion, velocity, acceleration, speed, displacement, and distance traveled. Students will graph polar equations and convert between polar and cartesian and calculate slopes and areas determined by polar curves. **Exam Review** Students will review all material covered in this AP course in preparation for the upcoming AP Exam