

Southern Cayuga Central School District - Curriculum Map

Subject: AP Calculus AB

School Year: 2023-2024

Title	Essential Questions & Vocabulary	Content Skills	Major Assessments	Time Frame
Limits and Continuity	<ul style="list-style-type: none">• Rate of Change• Average Rate of Change• Limit• Substitution• Cancellation/Simplification• Rationalization• Trigonometry (sine, cosine, tangent, cosecant, secant, cotangent)• Continuity/Continuous• Infinite/Infinity• Asymptotes• Intermediate Value Theorem	<ul style="list-style-type: none">• Instantaneous Rate of Change• Finding Limits Graphically• Finding Limits Numerically• Properties of Limits• Limits of Transcendental Functions• Continuity• Infinite Limits• Limits at Infinity• Intermediate Value Theorem	<ul style="list-style-type: none">• 2 Quizzes• Content Covered on the Marking Period 1 Exam• Content Covered on the AP EXAM (May 8th)	3 weeks
Basic Derivatives	<ul style="list-style-type: none">• Tangent/Tangent Line• Derivative• Differentiate• Linearity• Differentiability• Product• Quotient• Position• Speed• Velocity• Acceleration	<ul style="list-style-type: none">• Tangent Lines• Derivatives & Tangent Lines• Differentiability• Basic Differentiation Rules• The Product Rule• The Quotient Rule• Applications of Rate of Change	<ul style="list-style-type: none">• 2 Quizzes• Content Covered on the Marking Period 1 Exam• Content Covered on the AP EXAM (May 8th)	2 Weeks
Differentiation of	<ul style="list-style-type: none">• Chain Rule	<ul style="list-style-type: none">• The Chain Rule	<ul style="list-style-type: none">• 2 Quizzes	2 Weeks

Other Structures	<ul style="list-style-type: none"> • Implicit • Inverse Function • Base • Logarithm 	<ul style="list-style-type: none"> • Symbolic Differentiation • Implicit Differentiation • Inverse Derivatives • Derivatives of Inverse Trigonometric Functions 	<ul style="list-style-type: none"> • Content Covered on the Marking Period 2 Exam • Content Covered on the AP EXAM (May 8th) 	
Contextual Applications of Differentiation	<ul style="list-style-type: none"> • Related Rates • Overestimate • Underestimate • Indeterminate Form 	<ul style="list-style-type: none"> • Interpretations of the Derivative • Straight Line Motion: Position, Velocity, and Acceleration • Other Rates of Change • Related Rates • Local Linearity • Linearization • L'Hospital's Rule 	<ul style="list-style-type: none"> • 2 Quizzes • Content Covered on the Marking Period 3 Exam • Content Covered on the AP EXAM (May 8th) 	3 Weeks
Analytical Applications of Differentiation	<ul style="list-style-type: none"> • Mean Value Theorem • Local Extrema • Global Extrema • Extreme Value Theorem • First Derivative Test • Increasing • Decreasing • Maximum • Minimum • Second Derivative Test • Point of Inflection • Concave Up • Concave Down • Optimize 	<ul style="list-style-type: none"> • Mean Value Theorem • Extrema on an Interval • First Derivative Test • Second Derivative Test • Curve Sketching • Optimization Problems 	<ul style="list-style-type: none"> • 2 Quizzes • Content Covered on the Marking Period 3 Exam • Content Covered on the AP EXAM (May 8th) 	3.5 Weeks
Integration	<ul style="list-style-type: none"> • Riemann Sum (left, right, midpoint) • Trapezoidal Rule • Sequence 	<ul style="list-style-type: none"> • Approximating Area with Riemann Sums • Sigma Notation and Riemann Sums 	<ul style="list-style-type: none"> • 1 Quiz • Content Covered on the Marking Period 3 Exam 	2.5 Weeks

	<ul style="list-style-type: none"> • Fundamental Theorem of Calculus • Displacement • Definite Integral • Area 	<ul style="list-style-type: none"> • Accumulation Functions • Properties of Definite Integrals 	<ul style="list-style-type: none"> • Content Covered on the AP EXAM (May 8th) 	
Integration (Continued)	<ul style="list-style-type: none"> • Antiderivative • Change of Variable • Indefinite Integral 	<ul style="list-style-type: none"> • Antiderivatives • Indefinite Integrals • Fundamental Theorem of Calculus • Integration by Substitution • Integration of Transcendental Functions 	<ul style="list-style-type: none"> • 1 Quiz • Content Covered on the Marking Period 4 Exam • Content Covered on the AP EXAM (May 8th) 	2 Weeks
Differential Equations	<ul style="list-style-type: none"> • Differential Equation • Slope Field • Initial Conditions • Separation of Variables • Growth • Decay 	<ul style="list-style-type: none"> • Introduction to Differential Equations • Sketching Slope Fields • Separation of Variables • Exponential Models 	<ul style="list-style-type: none"> • 2 Quizzes • Content Covered on the Marking Period 4 Exam • Content Covered on the AP EXAM (May 8th) 	2.5 Weeks
Applications of Integration	<ul style="list-style-type: none"> • Average Value • Accumulation • Volume • Revolution • Cross Sections • Disc • Washer 	<ul style="list-style-type: none"> • Average Value for Integrals • Particle Motion • Accumulation Functions in Context • Area Between Two Curves • Volumes by Cross Sections • Volumes of Rotation 	<ul style="list-style-type: none"> • 2 Quizzes • Content Covered on the Marking Period 5 Exam • Content Covered on the AP EXAM (May 8th) 	4 Weeks
AP Review		<ul style="list-style-type: none"> • Targeted Review Lessons • Practice Exams 	AP Exam	3 Weeks
AP Exam is Monday May 13, 2023				