

**Biloxi Public Schools – Calculus/AP Calculus
Pacing Guide by Term
2021-2022**

TERM 1—46 days 8/4-10/7				
Unit	Topic	Mathematical Practices and Big Ideas	Total Instructional Days	Notes
1	Limits (Class Intro 3 days) Intro to limits and Notation Estimating limit Values from Graphs and tables Determining Limits using Algebraic Properties Determining Limits using Algebraic Manipulation Squeeze theorems Multiple Representations	CHA.2 LIM.1 LIM.2 LIM.3	17 days	New Teacher 7/28-7/30 No students: PD#1,2: 8/2, 8/3 PD#3: 10/8
2	Continuity Types of discontinuities Defining Continuity at a point Confirming Continuity over an interval Removing discontinuities Connecting Infinite Limits and Vertical Asymptotes Connecting Limits at Infinity and Horizontal Asymptotes Intermediate Value Theorem	LIM.1 LIM.2 LIM.3 FUN.3	10 days	Labor Day: 9/6 Fall Break: 10/8, 10/11
3	Differentiation: Definition and Basic Derivative Rules Define Average and Instantaneous Rates of Change at a Point Derivative Notation Estimating Derivative at a Point Determine if Derivative Exist Using Continuity Power Rule Derivative Rules: Constant, Sum, Difference, and Constant Multiple Cos x, Sin x, e ^x , and ln x Product Rule Quotient Rule Tangent, Cotangent, Secant, Cosecant Functions Chain Rule	CHA.2 CHA.1 CHA.4 FUN.3 FUN.1 LIM.1	17 days	
CTA: October 10/6, 10/7			2 days	

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TERM 2—44 days 10/12-12/17				
Unit	Topic	Mathematical Practices and Big Ideas	Total Instructional Days	Notes
1	Differentiation: Composite, Implicit, and Inverse Functions Implicit Differentiation Inverse Functions Inverse Trig Functions Procedures for Calculating Derivatives Calculating Higher-Order Derivatives	FUN.1 FUN.3	9 days	Thanksgiving Break 11/22-11/26 Christmas Break 12/20 - 12/31 PD#4 - 1/3
2	Contextual Applications of Differentiation Interpreting the Meaning of the Derivative in Context Straight-Line Motion: Connecting Position, Velocity, Acceleration Rates of change in Applied Context other than motion Related Rates Approximating Values of a Function using local linearity and Linearization L'Hospital's Rule	CHA.1 CHA.2 CHA.3	12 days	
3	Analytical Applications of Differentiation MVT EVT, relative extrema, critical Points Intervals of increasing and decreasing First Derivative Test to find relative extrema Candidates Test to find absolute extrema Concavity Second Derivative Test to Determine Extrema Sketching Graphs of Functions and their Derivatives Connect Function, first derivatives and second derivatives Optimization Behaviors of Implicit Relations	FUN.3 FUN.2 FUN.1	21 days	
CTA: 12/16 – 12/17			2 days	

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TERM 3—44 Days 1/4 -3/11				
Unit	Topic	Mathematical Practices and Big Ideas	Total Instructional Days	Notes
1	Integration and Accumulation of Change Accumulations of Change Approximating Areas with Riemann Sums Summation and Definite Integral Notation The Fundamental Theorem of Calculus and Accumulations Interpreting the behavior of Accumulation involving Area Properties of Definite Integrals The Fundamental Theorem of Calculus and Definite Integrals Integrating Using Substitution Integrating Using Long Division and Completing the Square	CHA.4 LIM.1 LIM.2 FUN.1 FUN.3 FUN.2 FUN.4	21 days	PD#4 - 1/3 1/10 MLK 1/17 Mardi Gras Holiday: 2/28 - 3/3 PD#5 - 3/3
2	Differential Equations Modeling Situations with Differential Equations Verifying Solutions for Differential Equations Slope Fields Finding General Solutions Using Separation of Variables Finding Particular Solutions Using Initial Conditions and Separation Exponential Models with Differential Equations	FUN.2 FUN.3 FUN.4 FUN.1	10 days	
3	Applications of Integration Average Value of a Function PVA using Integrals Accumulation in Applied Contexts Finding the Area between Curves as Functions of x and y	CHA.1 CHA.3 CHA.4	11 days	
CTA: 3/10 - 3/11			2 days	

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TERM 4—46 Days 3/14 - 5/26				
Unit	Topic	Mathematical Practices and Big Ideas	Total Instructional Days	Notes
1	Applications of Integration: Volume Volume with Cross-Sections: Squares and Rectangles Volume with Cross-Sections: Triangles and Semicircles Volume with Disc Method: revolving around x or y axis Volume with Disc Method: revolving around other axis Volume with Washer Method: revolving around x or y axis Volume with Washer Method: revolving around other axis	CHA.3 CHA.3 CHA.4	12 days	PD#6 4/14 Spring Break 4/18 - 4/22 Graduation 5/24
2	AP Review		21 days	Last Day students 5/25 PD #7 - 5/26
3	After AP Exam Project		11 days	AP Exam May 9 th at 8am
	State Testing usually begins last week of April CTA: 5/24 - 5/25		2 Days	