

Unit 1

Limits and Continuity

Duration	3 weeks			Assessed
Priority Standard(s)	LO 1.1A(a)	Express limits symbolically using correct notation.		
	LO 1.1A(b)	Interpret limits expressed symbolically.		
	LO 1.1 B:	Estimate limits of functions.		
	LO 1.1 C	Determine limits of functions.		
	LO 1.1 D	Deduce and interpret behavior of functions using limits		
	LO 1.2 A	Analyze functions for intervals of continuity or points of discontinuity.		
	LO 1.2 B	Determine the applicability of important calculus theorems using continuity.		
Supporting Standard(s)	A2.BF.A.1	Perform operations on functions, including the composition of functions numerically, graphically, and analytically.		
	A2.APR.A.5	Understand what it means for a function to be discontinuous and classify discontinuities as removable (point) or non-removable (jump or infinite).		
	A2.IF.A.1	Identify vertical asymptotes, horizontal asymptotes, and removable discontinuities of a rational function. Graph rational functions including horizontal and vertical asymptotes, x and y intercepts, and removable discontinuities		

Unit 2

Derivatives

Duration	4-6 weeks		Assessed
Priority Standard(s)	LO 2.1 A	Identify the derivative of a function as the limit of a difference quotient	
	LO 2.1 B	Estimate the derivative.	
	LO 2.1 C	Calculate derivatives.	
	LO 2.1 D	Determine higher order derivatives	
	LO 2.2 A	Use derivatives to analyze properties of a function.	
	LO 2.2 B	Recognize the connection between differentiability and continuity.	
	LO 2.3 A	Interpret the meaning of a derivative within a problem.	
	LO 2.3 B	Solve problems involving the slope of a tangent line.	
	LO 2.3 C	Solve problems involving related rates, optimization, rectilinear motion, (BC) and planar motion.	
Supporting Standard(s)		Rewrite a radical function using rational exponents.	
		Factor polynomials and find the zeros of a polynomial function.	
		Graph a rational function and determine characteristics such as vertical and horizontal asymptotes and x and y-intercepts	

Unit 3

Existence Theorems

Duration	2 weeks		Assessed
Priority Standard(s)	LO 2.4A	Apply the Mean Value Theorem to describe the behavior of a function over an interval.	
Supporting Standard(s)	LO 1.2 B	Determine the applicability of important calculus theorems using continuity.	

Unit 4

Using Derivatives to Analyze Functions

Duration	3 weeks			Assessed
Priority Standard(s)	LO 1.1 C	Determine limits of functions. (L'Hospital's rule)		
	LO 1.1 D	Deduce and interpret behavior of functions using limits.		
	LO 1.2 B	Determine the applicability of important calculus theorems using continuity.		
	LO 2.2 A	Use derivatives to analyze properties of a function.		
Supporting Standard(s)	LO 1.1 C	Determine limits of functions.		
	LO 1.2 A	Analyze functions for intervals of continuity or points of discontinuity.		

Unit 5

Applications of Derivatives

Duration	2.5 weeks			Assessed
Priority Standard(s)	LO 2.3 D	Solve problems involving rates of change in applied contexts.		
	LO 2.3 C	Solve problems involving related rates, optimization and rectilinear motion.		
	LO 2.3 A	Interpret the meaning of a derivative within a problem.		
Supporting Standard(s)	LO 2.1 C	Calculate derivatives.		
	EK 2.1 C5	Use the chain rule as the basis for implicit differentiation.		

Unit 6

Accumulations and Riemann Sums

Duration	4 weeks			Assessed
Priority Standard(s)	LO 3.2 B	Approximate a definite integral		
	LO 3.2 A (b)	Express the limit of a Reimann sum in integral notation.		
	LO 3.2 A (a)	Interpret the definite integral as the limit of a Reimann Sum		
	LO 3.2 C	Calculate a definite integral using areas and properties of definite integrals.		
Supporting Standard(s)	LO 1.1 A (a)	Express limits symbolically using correct notation.		
	LO 1.1 A (b)	Interpret limits expressed symbolically.		
		Calculate the area formulas for rectangles and trapezoids.		

Unit 7

Antiderivatives and the Fundamental Theorem of Calculus

Duration	4-5 weeks		Assessed
Priority Standard(s)	LO 3.1 A	Recognize antiderivatives of basic functions.	
	LO 3.3 B (a)	Calculate antiderivatives.	
	LO 3.3 B (b)	Evaluate definite integrals.	
	LO 3.3 A	Analyze functions defined by an integral.	
	LO 3.5 A	Interpret the meaning of a definite integral within a problem.	
	LO 3.4 B	Apply definite integrals to problems involving the average value of a function.	
	LO 3.5 B	Interpret, create and solve differential equations from problems in context.	
Supporting Standard(s)	LO 2.2 A	Use derivatives to analyze properties of a function.	
	LO 2.3 E	Verify solutions to differential equations.	
	LO 2.3 F	Estimate solutions to differential equations.	
	LO 3.2 C	Approximate a definite integral.	

Unit 8

Applications of Definite Integrals

Duration	3 weeks			Assessed
Priority Standard(s)	LO 3.4 A	Interpret the meaning of a definite integral within a problem .		
	LO 3.4 E	Use the definite integral to solve problems in various contexts.		
	LO 3.4 C	Apply definite integrals to problems involving motion.		
	LO 3.4 D	Apply definite integrals to problems involving area, volume and (BC) length of a curve		
Supporting Standard(s)	LO 3.3 B (a)	Calculate antiderivatives.		
	LO 3.3 B (b)	Evaluate definite integrals.		