Unit 1			
Limits and Continuity			
Duration	2 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 funcitons 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-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 differentiabilityand 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	2-3 weeks		**Assessed**
Priority Standard(s)	LO 3.2 B	Appoximate 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 invovling 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 invovling motion.	
	LO 3.4 D	Apply definite integrals to problems involving area, volume and (BC) length of a curve	
	LO 3.4D1	Apply definite integrals to area bounded by polar curves.	
	LO 3.5A	Analyze differential equations to obtain general and specific solutions.	
	LO 3.5 B	Interpret, create and solve differential equations from problems in context. (BC exponential/logistic)	
Supporting Standard(s)	LO 3.3 B (a)	Calculate antiderivatives.	
	LO 3.3 B (b)	Evaluate definite integrals.	

Unit 8-B			
BC Methods of Integration			
Duration	2 weeks		**Assessed**
Priority Standard(s)	LO 3.2 D	Evaluate an improper integral or show that an improper integral diverges.	
	LO 3.3 B (b)	Evaluate definite integrals using integrations by parts and non-repeating linear partial fractions.	
Supporting Standard(s)	LO 3.3 B (a)	Calculate antiderivatives.	
	LO 3.3 B (b)	Evaluate definite integrals.	

Unit 9			
Series-Convergence/Tests			
Duration	2 weeks		**Assessed**
Priority Standard(s)	LO 4.1 A	Determine whether a series converges or diverges.	
	LO 4.1 B	Determine or estimate the sum of a series.	
Supporting Standard(s)		Calculate the sum of a geometric series.	

Unit 10				
Series-Power Series/Taylor Polynomials				
Duration	3 weeks			**Assessed**
Priority Standard(s)	LO 4.2 A	Construct and use Taylor/MacLaurin polynomials.		
	LO 4.2 B	Write a power series representing a given function.		
	LO 4.2A 4	Use the Lagrange error bound to calculate the error of a Taylor Polynomial. (In some simple cases the alternating series test)		
	LO 4.2 C	Determine the radius and interval of convergence of a power series.		
Supporting Standard(s)	LO 4.1A	Determine whether a series converges or diverges.		
	LO 4.1B	Determine or estimate the sum of a series.		
		Create a linear or quadratic polynomial given a matching point and one other fact. (This concept will be extended to the creation of the nth degree Taylor polynomial to represent a given function.)		

Unit 11

Polar and Parametrically Defined Functions

Duration	2 weeks		Assessed
Priority Standard(s)	LO 2.1 C 7	Calculate derivatives of real valued parametric functions.	
	LO 2.3 C 4	Determine velocity, speed and acceleration for a particle moving along curve given by parametric functions.	
	LO 2.1 C 7	Calculate derivatives of real valued functions in polar coordinates.	
	LO 2.2A 4	For a curve given in polar equation r=f(), calculate the first and second derivatives of y with respect to x and interpret the results.	
	LO 2.3 F2	Estimate a solution to differential equations using Euler's method.	
	LO 3.4 D 3	Calculate the length of a planar curve defined by a parametrically defined curve can be calculated using a definite integral.	
	LO 3.4 D 1	Calculate areas bounded by polar curves.	
Supporting Standard(s)		Sketch polar graphs using tables.	
		Determine the point(s) of intersection of two polar curves.	
		Calculate the area bounded by two curves using definite integration techniques.	