Cornwall-Lebanon School District Curriculum Overview

AP Calculus BC- High School

length of time in weeks	Concepts & Competencies	Common Assessments	Academic Standards AP Calculus BC National Framework
Unit 1 — 3	**Techniques of Integration** Students will verify solutions to differential equations. Students will recognize antiderivatives of basic functions. Students will approximate a definite integral. Students will calculate derivatives and evaluate definite integrals.	➢ Integration Techniques Quiz ➢ Partial Fractions Quiz ➢ Techniques of Integration Test	EU 2.3 EU 3.1 EU 3.2 EU 3.3
Unit 2 — 2	**Mathematical Modeling** Students will estimate solutions to differential equations. Students will analyze differential equations to obtain general and specific solutions. Students will interpret, create, and solve differential equations from problems in context.	➢ Mathematical Modeling Test	EU 2.3 EU 3.5
Unit 3 — 4	**Integral Applications** Students will interpret the meaning of a definite integral within a problem. Students will apply definite integrals to problems involving motion. Students will apply definite integrals to problems involving area, volume, and length of a curve. Students will use the definite integral to solve problems in various contexts.	➢ Geometric Applications of Integrals Quiz ➢ Integral Applications Test ➢ Marking Period 1 Exam (Cumulative)	EU 3.4
Unit 4 — 4	**L'Hospital's Rule** Students will express limits symbolically using correct notation and interpret limits expressed symbolically. Students will determine limits of functions. Students will deduce and interpret behavior of functions using limits. Students will evaluate an improper integral or show that an improper integral diverges.	➢ L'Hospital's Rule and Relative Growth Rates Quiz ➢ Chapter 8 Test	EU 1.1 EU 3.2
Unit 5 — 9	**Infinite Series** Students will determine whether a series converges or diverges. Students will determine or estimate the sum of a series. Students will construct and use Taylor polynomials. Students will write a power series representing a given	➢ 9.1-9.2 Quiz ➢ Section 9.3 Quiz ➢ Midterm Exam (Cumulative) ➢ Chapter 9 Test	EU 4.1 EU 4.2

	function. Students will determine the radius and interval of convergence of a power series.		
Unit 6 7	<u>Polar, Parametric, and Vector Functions</u> Students will calculate derivatives. Students will use derivatives to analyze properties of a function. Students will solve problems involving related rates, optimization, rectilinear motion, and planar motion. Students will apply definite integrals to problems involving motion. Students will apply definite integrals to problems involving area, volume, and length of a curve.	➢ 10.1-10.3 Quiz ➢ Section 10.5-10.6 Quiz ➢ Marking Period 3 Exam (Cumulative)	EU 2.1 EU 2.2 EU 2.3 EU 3.4