

Curriculum Map: Honors Calculus

Course: HONORS CALCULUS Sub-topic: Calculus

Grade(s): 11 to 12

Course Description: Calculus is a course in differential and integral calculus of algebraic and trigonometric functions. Essential topics of analytic geometry are studied as are the many applications of calculus. Students completing this course would have a good foundation in basic calculus and be better prepared for the advanced placement examination in Calculus AB, but would need further study to be successful at the exam.

Unit: Unit 1: Pre-Calculus Review

Topic: Section P.1: Graphs and Models

Minutes for Topic: 172

Topic: Section P.2: Linear Models and Rates of Change

Minutes for Topic: 86

Topic: Section P.3: Functions and Their Graphs

Minutes for Topic: 172

Topic: Review: Chapter P

Minutes for Topic: 86

Topic: Test: Chapter P - Pre-Calculus Review

Minutes for Topic: 86

Unit: Unit 2: Chapter 1 - Limits

Topic: Section 1.1 and 1.2: Preview of Calculus; Finding Limits Graphically and Numerically

Minutes for Topic: 86

Topic: Section 1.3: Evaluating Limits Analytically

Minutes for Topic: 258

Topic: Section 1.4: Continuity and One-Sided Limits

Minutes for Topic: 258

Topic: Section 1.5: Infinite Limits

Minutes for Topic: 172

Topic: Review: Chapter 1 - Limits

Minutes for Topic: 86

Topic: Test: Chapter 1 - Limits

Minutes for Topic: 86

Unit: Unit 3: Chapter 2 - Derivatives

Topic: Section 2.1: The Derivative and Tangent Line Problem

Minutes for Topic: 172

Topic: Section 2.2: Basic Differentiation Rules and Rates of Change

Minutes for Topic: 172

Topic: Section 2.3: Product and Quotient Rules and Higher Order Derivatives

Minutes for Topic: 258

Topic: Section 2.4: The Chain Rule

Minutes for Topic: 430

Topic: Section 2.5: Implicit Differentiation

Minutes for Topic: 258

Topic: Section 2.6: Related Rates

Minutes for Topic: 516

Topic: Review: Chapter 2 - Derivatives

Minutes for Topic: 86

Topic: Test: Chapter 2 - The Derivative

Minutes for Topic: 86

Unit: Unit 4: Chapter 3A - Curve Sketching with the Derivative

Topic: Section 3.1: Extrema on and Interval

Minutes for Topic: 86

Topic: Section 3.2: Rolle's Theorem and the Mean Value Theorem

Minutes for Topic: 258

Topic: Section 3.3: Increasing & Decreasing Functions and the First Derivative Test

Minutes for Topic: 344

Topic: Section 3.4: Limits at Infinity

Minutes for Topic: 258

Topic: Section 3.6: Summary of Curve Sketching

Minutes for Topic: 258

Topic: Review: Chapter 3A - Curve Sketching with the Derivative

Minutes for Topic: 86

Topic: Test: Chapter 3A - Curve Sketching with the Derivative

Minutes for Topic: 86

Unit: Unit 5: Chapter 3B - Application of Derivatives

Topic: Section 3.7: Optimization Problems

Minutes for Topic: 516

Topic: Section 3.8: Newton's Method

Minutes for Topic: 172

Topic: Section 3.9: Differentials w/ Linearization

Minutes for Topic: 172

Unit: Unit 6: Chapter 4 - Anti-Differentiation / Integration

Topic: Section 4.1: Antiderivatives and Indefinite Integration

Minutes for Topic: 172

Topic: Section 4.2: Finding Area with Summations

Minutes for Topic: 258

Topic: Section 4.3: Riemann Sums and the Definite Integral

Minutes for Topic: 258

Topic: Section 4.4: Definite Integration / Fundamental Theorem of Calculus

Minutes for Topic: 430

Topic: Review: Chapter 4 - Anti-Differentiation / Integration

Minutes for Topic: 86

Topic: Test: Chapter 4 - Anti-Differentiation / Integration

Minutes for Topic: 86

Unit: Course Review / Final Exam

Topic: Review for Final Exam

Minutes for Topic: 172

Topic: Final Exam

Minutes for Topic: 120