

AP CALCULUS AB SYLLABUS

Sections Align to: Calculus for AP, 2nd Edition by R. Larson & P. Battaglia

MARKING PERIOD 1

Unit 1: Limits and Their Properties

Section	Title	2023 NJSLS for Mathematics
1.2	Finding Limits Graphically and Numerically	A-APR.D.7, F-IF.B.6
1.3	Evaluating Limits Analytically	A-APR.D.7, F-IF.B.6
1.4	Continuity and One-Sided Limits	A-APR.D.7, F-IF.B.6
1.5	Infinite Limits	A-APR.D.7, F-IF.B.6
1.6	Limits at Infinity	A-APR.D.7, F-IF.B.6

Unit 2: Differentiation

Section	Title	2023 NJSLS for Mathematics
2.1	The Derivative and the Tangent Line Problem	A-APR.D.7, F-IF.B.6,F-LE.B.5
2.2	Basic Rules of Differentiation and Rates of Change	A-APR.D.7, F-IF.B.6,F-LE.B.5
2.3	The Product and Quotient Rules and Higher Order Derivatives	A-APR.D.7, F-IF.B.6,F-LE.B.5
2.4	The Chain Rule	A-APR.D.7, F-IF.B.6,F-LE.B.5
2.5	Implicit Differentiation	A-APR.D.7, F-IF.B.6,F-LE.B.5
2.6	Derivatives of Inverse Functions	A-APR.D.7, F-IF.B.6,F-LE.B.5
2.7	Related Rates	A-APR.D.7, F-IF.B.6,F-LE.B.5

MARKING PERIOD 2

Unit 3: Applications of Differentiation

Section	Title	2023 NJSLS for Mathematics
3.1	Extrema on an Interval	F-IF.C.7c, F-IF.B.6, F-IF.B.4, F-LE.B.5, G-MG.A.3
3.2	Rolle's Theorem and Mean Value Theorem	F-IF.C.7c, F-IF.B.6, F-IF.B.4, F-LE.B.5, G-MG.A.3
3.3	Increasing and Decreasing Functions and First Derivative Test	F-IF.C.7c, F-IF.B.6, F-IF.B.4, F-LE.B.5, G-MG.A.3
3.4	Concavity and Second Derivative Test	F-IF.C.7c, F-IF.B.6, F-IF.B.4, F-LE.B.5, G-MG.A.3
3.5	A Summary of Curve Sketching-Graphing Functions	F-IF.C.7c, F-IF.B.6, F-IF.B.4, F-LE.B.5, G-MG.A.3
3.6	Optimization Problems	F-IF.C.7c, F-IF.B.6, F-IF.B.4, F-LE.B.5, G-MG.A.3
3.7	Linear Approximation and Differentials	F-IF.C.7c, F-IF.B.6, F-IF.B.4, F-LE.B.5, G-MG.A.3

Unit 4: Integration

Section	Title	2023 NJSLS for Mathematics
4.1	Antiderivatives	F-BF.A.2, F-IFB.6,F-LE.B.5
4.2	Area-Approximating areas under the Curve	F-BF.A.2, F-IFB.6,F-LE.B.5
4.3	Riemann Sums and Definite Integrals	F-BF.A.2, F-IFB.6,F-LE.B.5
4.4	Fundamental Theorem of Calculus	F-BF.A.2, F-IFB.6,F-LE.B.5

MARKING PERIOD 3

Unit 4: Integration Continued

Section	Title	2023 NJSL for Mathematics
4.6	Integration by Substitution	F-BF.A.2, F-IFB.6,F-LE.B.5
4.7	The Natural Logarithm of Functions: Integration	F-BF.A.2, F-IFB.6,F-LE.B.5
4.8	Inverse Trigonometric Functions: Integration	F-BF.A.2, F-IFB.6,F-LE.B.5

Unit 5: Differential Equations

Section	Title	2023 NJSL for Mathematics
5.1	Slope Fields	F-LE.B.5, F-BF.A.1.b, F-BF.A.1.c, F-IF.B.6
5.2	Growth and Decay	F-LE.B.5, F-BF.A.1.b, F-BF.A.1.c, F-IF.B.6
5.3	Separation of Variables	F-LE.B.5, F-BF.A.1.b, F-BF.A.1.c, F-IF.B.6

Unit 6: Applications of Integration

Section	Title	2023 NJSL for Mathematics
6.1	Area of Region Between Two Curves	N-Q.A.1,F-IF.C.7c,G-GMD.A.1, G-GMD.A.2, G-GMD.A.3, G-GMD.B.4
6.2	Volume: The Disk and Washer Method	N-Q.A.1,F-IF.C.7c,G-GMD.A.1, G-GMD.A.2, G-GMD.A.3, G-GMD.B.4

MARKING PERIOD 4

Unit 7: AP Test Review (Test Mock AP Test)

Section	Title	2023 NJSLS for Mathematics
Supplement	Units 1 - 8	A-SSE.A.1b, A-APR.D.7, F-IF.C.7c, F-IF.C.8, F-IF.C.9, F-IF.B.6, F-LE.B.5, F-IF.B.4, F-IF.A.3, F-BF.A.2, F-BF.A.1.b, F-BF.A.1.c, G-MG.A.3, G-GMD.A.1, G-GMD.A.2, G-GMD.A.3, G-GMD.B.4, N-Q.A.1

Unit 8: Integration Techniques, L'Hôpital's Rules, Partial Fractions

Section	Title	2023 NJSLS for Mathematics
7.7	Indeterminate Forms and L'Hôpital's Rule	F-IF.B.4
REVIEW FOR AP TEST		
7.2	Integration by Parts	F-BF.A.2, F-IF.B.6, F-LE.B.5
7.5	Partial Fractions	F-BF.A.2, F-IF.B.6, F-LE.B.5

Unit 9: Project

Section	Title	2023 NJSLS for Mathematics
Supplement	Marginal Analysis Project	F-BF.A.1.b, F-IF.B.5

ASSESSMENT INFORMATION

AP Calculus AB Marking Periods 1 - 4	
Category	Percentage
Major	60%
Minor	30%
Homework, Participation & Practice	10%