

PRE-CALCULUS SYLLABUS

1st Marking Period

Review Algebra 2 Concepts should be built into Chapter 1 topics.

Chapter 1: Functions and Their Graphs. (Test 1.2 – 1.6)

Section	Title	2023 NJSLS for Mathematics
1.2	Functions	A-CED.A.2, A-CED.A.4, F-IF.A.1, F-IF.A.2, F-IF.B.5, F-IF.B.6, F-LE.B.5
1.3	Graphs. of Functions (Piecewise & Step Functions)	A-REI.D.10, F-IF.B.4, F-IF.C.7a, F-IF.C.7b
1.4	Shifting, Reflecting and Stretching Graphs.	F-BF.B.3
1.5	Combinations of Functions	A-APR.A.1, F-BF.A.1b, F-BF.A.1c, F-IF.A.1, F-IF.A.2
1.6	Inverse Functions (Inverses Algebraically, No One-to-One)	F-BF.B.4a, F-BF.B.4b, F-BF.B.4c, F-BF.B.4d

Chapter 2A: Polynomial and Rational Functions (Test 2.2 – 2.5)

Section	Title	2023 NJSLS for Mathematics
2.2	Polynomial Functions of Higher Degree	A-CED.A.2 A-SSE.A.2, A-SSE.B.3a A-APR.B.3 F-BF.B.3 F-IF.B.4, F-IF.C.7a, F-IF.C.7b, F-IF.C.7c
2.4	Complex Numbers (not in-depth, just review)	N-CN.A.1, N-CN.A.2, N-CN.A.3, N-CN.C.7, N-RN.A.3 A-REI.B.4b
2.5	The Fundamental Theorem of Algebra	N-CN.A.1, N-CN.C.7, N-CN.C.8, N-CN.C.9 A-CED.A.2 A-SSE.A.2, A-SSE.B.3a A-APR.B.3 F-IF.B.4, F-IF.C.8a

Chapter 2B: Polynomial and Rational Functions (Test 2.6 – 2.7)

Section	Title	2023 NJSLS for Mathematics
2.6	Rational Functions and Asymptote	A-APR.D.7 A-SSE.A.1a, A-SSE.A.1b A-CED.A.2 F-IF.A.1
2.7	Graphs. of Rational Functions	F-IF.B.4, F-IF.C.7d

2nd Marking Period**Chapter 3:** Exponential and Logarithmic Functions (Test 3.1 – 3.5)

Section	Title	2023 NJSLS for Mathematics
3.1	Exponential Functions and Their Graphs	A-SSE.B.3c F-BF.B.3 F-IF.A.2, F-IF.B.4, F-IF.C.7e, F-IF.C.8b F-LE.A.2, F-LE.B.5
3.2	Logarithmic Functions and Their Graphs	F-BF.B.3 F-IF.A.2, F-IF.B.4, F-IF.C.7e F-LE.A.4
3.3	Properties of Logarithms	A-SSE.A.1, A-SSE.A.2, A-SSE.B.3c
3.4	Solving Exponential and Logarithmic Equations	F-BF.B.4, F-BF.B.5, F-IF.C.8b F-LE.A.1c
**Use 3.5 Exponential and Logarithmic Models to Supplement Word Problems throughout chapter 3		A-CED.A.2 F-BF.B.3 F-IF.A.2, F-IF.B.4, F-IF.B.5, F-IF.C.7e F-LE.A.4

Chapter 4A: Trigonometric Function (Test 4.3, 4.8, 6.1, 6.2)

Section	Title	2023 NJSLS for Mathematics
4.3	Right Triangle Trigonometry	G-SRT.C.6, G-SRT.C.8 G-MG.A.1, G-MG.A.3 F-TF.B.7
4.8	Applications and Models	N-Q.A.1 G-MG.A.1, G-MG.A.3 F-TF.B.7
6.1	Law of Sines	G-SRT.D.9, G-SRT.D.10, G-SRT.D.11 G-MG.A.1, G-MG.A.3 F-TF.B.7
6.2	Law of Cosines	G-SRT.D.10, G-SRT.D.11 G-MG.A.1, G-MG.A.3 F-TF.B.7

Chapter 4B: Trigonometric Function (Test 4.1, 4.2, & 4.4)

Section	Title	2023 NJSLS for Mathematics
4.1	Radian and Degree Measure	F-TF.A.1, G-C.B.5 G-MG.A.3
4.2	Trigonometric Functions: The Unit Circle	F-TF.A.2, F-TF.A.3, F-TF.A.4 G-MG.A.1, G-MG.A.3
4.4	Trigonometric Functions of Any Angle	F-TF.A.3, F-TF.C.8 G-MG.A.1, G-MG.A.3

3rd Marking Period

Chapter 5A: Analytic Trigonometry (Test 5.1, 5.2)

Section	Title	2023 NJSLS for Mathematics
5.1	Using Fundamental Identities	A-SSE.A.2 N-Q.A.1 G-SRT.C.8 F-TF.B.7, F-TF.C.8
5.2	Verifying Trigonometric Identities	A-SSE.A.2 N-Q.A.1 G-SRT.C.8 F-TF.B.7, F-TF.C.8, F-TF.C.9

Chapter 5B: Analytic Trigonometry (Test 5.3, 5.5)

Section	Title	2023 NJSLS for Mathematics
5.3	Solving Trigonometric Equations	A-SSE.A.2 F-TF.A.3, F-TF.B.7
5.5	Multiple Angle and Product Sum Formulas (only Double Angle Formula)	A-SSE.A.2 F-TF.A.3, F-TF.B.7

4th Marking Period

Chapter 4C: Trigonometric Function (Test 4.5 - 4.6)

Section	Title	2023 NJSLS for Mathematics
4.5	Graphs of Sine and Cosine Functions	F-TF.B.5, F-BF.B.3 F-IF.A.1, F-IF.B.4, F-IF.B.5, F-IF.C.7f N-Q.A.1
4.6	Graphs of Tangent	F-TF.B.5, F-BF.B.3 F-IF.A.1, F-IF.B.4, F-IF.B.5, F-IF.C.7f

Chapter 9A: Topics in Analytic Geometry (Test 9.1)

Section	Title	2023 NJSLS for Mathematics
9.1	Circles and Parabolas	A-CED.A.2 A-SSE.A.2 F-BF.B.3 F-IF.A.1, F-IF.B.4, F-IF.C.8a G-GPE.A.1, G-GPE.A.2

Chapter 9B: Topics in Analytic Geometry (Test 9.2-9.3)

Section	Title	2023 NJSLS for Mathematics
9.2	Ellipses	A-CED.A.2 A-SSE.A.2 F-BF.B.3 F-IF.A.1, F-IF.B.4, F-IF.C.8a G-GPE.A.3
9.3	Hyperbolas	A-CED.A.2 A-SSE.A.2 F-BF.B.3 F-IF.A.1, F-IF.B.4, F-IF.C.8a G-GPE.A.3

Course Expectations and Skills

- Students are required to have proficiency in all prerequisite topics for Algebra 1, Geometry and Algebra 2. Those who do not demonstrate proficiency will be required to seek additional help after school to close their achievement gap in order to be successful in this course.
- Students are strongly recommended to have a TI-84 Graphing calculator.
- Students are required to participate in both small and large group discussions and activities, as directed.
- Students are required to complete a project each marking period, including those which require the use of technology.
- Students are required to access online materials as warranted by the instructor.

Resources

Textbook: Precalculus with Limits A Graphing Approach 7e, Larson

Additional Resources: Cengage Web-Based videos and supplements

Kuta Software

Boardworks (CCSS PowerPoints)

Assessment Information

Marking Periods 1 - 4	
Category	Percentage
Major	40%
Minor	30%
Project (MP 1 & 3) Benchmark (MP 2 & 4)	10%
Class Participation	5%
Homework	15%