

PRE-CALCULUS SYLLABUS

2016-2017 Academic School-Year

1st Marking Period – Unit 1

Review Algebra Concepts – 2 Days Review, 1 Day Quiz

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

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

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

- 2.2 Polynomial Functions of Higher Degree (NJSLS.A-SSE.A.2, NJSLS.A-APR.B3, NJSLS.F-IF.C.7)
- 2.4 Complex Numbers (NJSLS.N-CN.A.1, 2, 3, NJSLS.N-CN.C.7, HAS-REI.B.4b)
- 2.5 The Fundamental Theorem of Algebra (NJSLS.N-CN.C.7, 9)

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

- 2.6 Rational Functions and Asymptotes (NJSLS.A-SSE.A.1, 1b, HAS-CED.A.2)
- 2.7 Graphs of Rational Functions (NJSLS.F-IF.C.7, 7d)

2nd Marking Period – Unit 1

Chapter 3: Exponential and Logarithmic Functions (Test 3.1 – 3.4)

- 3.1 Exponential Functions and Their Graphs. (NJSLS.A-SSE.B.3c, NJSLS.F-IF.C.7.e, NJSLS.F-IF.C.8b, NJSLS.F-LE.B.5)
- 3.2 Logarithmic Functions and Their Graphs. (NJSLS. NJSLS.F-IF.C.7.e)
- 3.3 Properties of Logarithms (NJSLS. NJSLS.A-SSE.A.1, NJSLS.A-SSE.B.3c)
- 3.4 Solving Exponential and Logarithmic Equations (NJSLS. NJSLS.F-IF.C.8b, NJSLS.F-BF.B.4, NJSLS.F-BF.B.5, NJSLS.F-LE.A.1c)

***Use 3.5 Exponential and Logarithmic Models to Supplement Word Problems**

Chapter 4: Trigonometric Function (Test 4.1 – 4.2)

4.1 Radian and Degree Measure (NJSLS.F-TF.A.1, NJSLS.G-C.B.5)

4.2 Trigonometric Functions: The Unit Circle (NJSLS.F-TF.A.2, NJSLS.F-TF.A.4)

Chapter 4: Trigonometric Function (Test 4.3 – 4.4)

4.3 Right Triangle Trigonometry (NJSLS.F-TF.B, NJSLS.G-SRT.C.6, NJSLS.G-SRT.C.8)

4.4 Trigonometric Functions of Any Angle (NJSLS.F-TF.A.3, NJSLS.F-TF.C.8)

3rd Marking Period – Unit 3

Chapter 4: Trigonometric Function (Test 4.5 – 4.6)

4.5 Graphs of Sine and Cosine Functions (NJSLS.F-TF.B.5)

4.6 Graphs of Other Trigonometric Functions (NJSLS.F-TF.B.5)

Chapter 4: Trigonometric Function (Test 4.7 – 4.8)

4.7 Inverse Trigonometric Functions (NJSLS.N-Q.A.1, NJSLS.F-TF.B.6)

4.8 Applications and Models (No Bearings) (NJSLS.N-Q.A.1, NJSLS.F-TF.B.5, NJSLS.F-TF.B.7)

Chapter 5: Analytic Trigonometry (Test 5.1 – 5.3)

5.1 Using Fundamental Identities (NJSLS.N-Q.A.1, NJSLS.F-TF.B.6, NJSLS.F-TF.C.8)

5.2 Verifying Trigonometric Identities (NJSLS.N-Q.A.1, NJSLS.F-TF.B.5, NJSLS.F-TF.B.7, NJSLS.F-TF.C.8)

5.3 Solving Trigonometric Equations (NJSLS.F-TF.C.9)

4th Marking Period – Unit 4

Chapter 5: Analytic Trigonometry (Test 5.4 – 5.5)

5.4 Sum and Difference Formulas (NJSLS.F-TF.C.9)

5.5 Multiple-Angle and Product-to-Sum Formulas (NJSLS.F-TF.C.9)

Chapter 6: Additional Topics in Trigonometry (Test 6.1 – 6.2)

6.1 Law of Sines (NJSLS.G-SRT.D.9, 10, 11)

6.2 Law of Cosines (NJSLS.G-SRT.D.10, 11)

Chapter 9: Topics in Analytic Geometry (Test 9.5 – 9.6)

9.5 Polar Coordinates (NJSLS. NJSLS.F-IF.C.7, NJSLS.F-TF.A.1, NJSLS.F-TF.A.2, NJSLS.F-TF.A.3, NJSLS.F-TF.A.4)

9.6 Graphs. of Polar Equations (NJSLS. NJSLS.F-IF.C.7, NJSLS.F-TF.A.1, NJSLS.F-TF.A.2, NJSLS.F-TF.A.3, NJSLS.F-TF.A.4)

Vector Project: Chapter 6: Additional Topics in Trigonometry

6.3 Vectors in the Plane (NJSLS.N-VM.A.1, 2, B.4, B.4a)

6.4 Vectors and Dot Products (NJSLS.N-VM.B.5b)

Additional Topics as Time Permits

Chapter 11: Limits and an Introduction to Calculus

11.1 Introduction to Limits (NJSLS.F-BF.B.4d)

11.2 Techniques for Evaluating Limits (NJSLS.F-BF.B.4d)

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 Plus 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: Pre-Calculus with Limits: A Graphing Approach 7e, Larson

Additional Resources: Cengage Web-based videos and supplements
Boardworks (CCSS Powerpoints)
Kuta Software

Assessment Information

Marking Period 1	Marking Period 2	Marking Period 3	Marking Period 4
Major (MAJ): Summative: 35%	Major (MAJ): Summative: 35%	Major (MAJ): Summative: 35%	Major (MAJ): Summative: 35%
Benchmark (BMK): 20%	Benchmark (BMK): 20%	Benchmark (BMK): 20%	Benchmark (BMK): 20%
Project (PRJ): 10%	Project (PRJ): 10%	Project (PRJ): 10%	Project (PRJ): 10%
Minor (MIN): Formative: 20%	Minor (MIN): Formative: 20%	Minor (MIN): Formative: 20%	Minor (MIN): Formative: 20%
Class Participation (CP): 5%	Class Participation (CP): 5%	Class Participation (CP): 5%	Class Participation (CP): 5%
Homework (HW): 10%	Homework (HW): 10%	Homework (HW): 10%	Homework (HW): 10%