

Plano ISD Precalculus Syllabus 2022-2023

1st semester (84 days)

1 st Grading Period (41 days)	2 nd Grading Period (43 days)
<p><i>Sequences and Series</i></p> <ul style="list-style-type: none">❖ Write recursive formulas for a given arithmetic or geometric sequence.❖ Identify whether a sequence converges or diverges.❖ Find the sum of a finite arithmetic or geometric series.❖ Find the sum of an infinite geometric series, if it exists.❖ Write arithmetic and geometric series using sigma notation.❖ Expand a binomial expression.❖ Find a specific term of a binomial expansion. <p><i>Non-Trigonometric Functions</i></p> <ul style="list-style-type: none">❖ Identify attributes of all non-trigonometric parent functions (and their transformations), such as domain and range, asymptotes, intercepts, extrema, end behavior, and intervals of increasing/decreasing.❖ Determine odd and even functions graphically and algebraically.❖ Graph and write equations of all non-trigonometric parent functions and their transformations.❖ Describe the effects of the $f(x)$ transformation.❖ Write transformed non-trigonometric parent functions and piecewise-defined functions using function notation.❖ Evaluate piecewise-defined functions.❖ Rewrite absolute value functions as piecewise-defined functions.❖ Use long/synthetic division to aid in graphing polynomial and rational functions.❖ Use the Remainder Theorem, Factor Theorem and Rational Zero (Root) Theorem to aid in graphing polynomial functions.❖ Identify extrema and intervals over which a polynomial is increasing or decreasing.❖ Graph and write equations of polynomial and rational functions.❖ Describe end behavior and asymptotic behavior using limit notation. <p>End of grading period: October 7</p>	<p><i>Continue Non-Trigonometric Functions</i></p> <ul style="list-style-type: none">❖ Identify an appropriate domain for a real-world situation. <p><i>Non-Trigonometric Solving</i></p> <ul style="list-style-type: none">❖ Solve exponential, logarithmic, polynomial, rational, and power (radical) equations and determine the validity of the solution(s) in context.❖ Solve real-world applications for exponential, logarithmic, and polynomial equations and determine the validity of the solution(s) in context.❖ Use the properties of logarithms to evaluate or transform logarithmic expressions.❖ Evaluate logarithmic and exponential expressions.❖ Manipulate literal equations to isolate a different variable.❖ Represent polynomial and rational functions with sign patterns.❖ Solve polynomial and rational inequalities and generate solution(s) in context.❖ Generate and evaluate composite functions.❖ Model and solve real-world applications using composite functions.❖ Decompose a composite function.❖ Demonstrate that function composition is not always commutative.❖ Write the inverse of a function when it exists. <p>End of grading period: December 16</p> <p>Semester Exams: December 13-16</p>

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2nd semester (91 days)

3 rd Grading Period (40 days)	4 th Grading Period (51 days)
<p><i>Trigonometric Fundamentals</i></p> <ul style="list-style-type: none">❖ Convert angle measures between degrees and radians.❖ Identify radian and degree measures on the unit circle.❖ Identify coterminal and reference angles.❖ Calculate angular and linear velocities.❖ Relate special angles (arc measures) to their coordinate pairs.❖ Relate coordinate pairs of special angles to all six trigonometric ratios.❖ Graph and identify the attributes of trigonometric parent functions.❖ Graph and identify the attributes of transformed sine and cosine parent functions.❖ Write an equation of a sine or cosine function given specific attributes or a graph.❖ Model and solving real-world situations using sinusoidal functions.❖ Identify the principal values (restrictions on domain) for sine, cosine, and tangent as they relate to the corresponding inverse functions.❖ Evaluate and graphing inverse functions for sine, cosine, and tangent.❖ Evaluate and writing an algebraic expression for compositions containing trigonometric functions and inverse trigonometric functions.❖ Recognize trigonometric identities.❖ Simplify trigonometric expressions using trigonometric identities.❖ Evaluate trigonometric expressions using trigonometric identities.❖ Verify the equality of two trigonometric expressions using trigonometric identities. <p><i>Trigonometric Solving and Applications</i></p> <ul style="list-style-type: none">❖ Solve trigonometric equations and determining the validity of the solution(s) in context.❖ Differentiate between general solutions and solutions over specified intervals. <p>End of grading period: March 3</p>	<p><i>Continue Trigonometric Solving and Applications</i></p> <ul style="list-style-type: none">❖ Solve oblique triangles using Law of Sines in context.❖ Solve ambiguous case triangles in context.❖ Solve oblique triangles using Law of Cosines in context.❖ Calculate the area of any triangle. <p><i>Conics, Parametric, Vectors, and Polar</i></p> <ul style="list-style-type: none">❖ Identify conic sections from a double-napped cone and its locus definition.❖ Graph and identify the attributes of ellipses and hyperbolas.❖ Write the equation of an ellipse or a hyperbola given specific attributes or a graph.❖ Graph parametric equations.❖ Convert between rectangular and parametric forms of equations.❖ Solve real-world applications involving projectile motion.❖ Represent vectors geometrically and algebraically.❖ Perform vector addition and scalar multiplication geometrically and algebraically in mathematical and real-world problems.❖ Represent vectors using magnitude and direction, component form or as a linear combination.❖ Use vectors to model situations involving magnitude and direction.❖ Use dot product to determine if two vectors are orthogonal.❖ Represent points using the polar coordinate system.❖ Convert coordinates between polar and rectangular.❖ Graph and identify attributes of polar equations. <p>End of grading period: May 26</p> <p>Semester Exams: May 23 - 26</p>

Assignments and Grading Plan

Student work in this course will include classroom explorations, practice (both in class and at home), comprehension checks, and assessments. Both formative and summative assessments will be used to evaluate each student’s progress toward the learning goals for this course. Formative assessments include teacher observations, class discussions, independent practice, and progress checks. Summative assessments include quizzes, tests, projects, and performance tasks.

Nine Week Grading			
Assignment	Description	How it is graded	Weight
Homework	Intended to help students practice their learning related to the course goals.	Graded on completion of assignment and showing work.	Daily Work (40%)
Comprehension Check	Completed in class individually, in partners, or in groups 1 – 2 times per unit.	Graded on a scale of percent correct.	
Test	Measures how well students can independently demonstrate their understanding at the end of a learning cycle. Summative assessment over an entire unit or a large portion of a unit.	Generally scored based on percentage correct, however some items may be given heavier weight depending on the amount of understanding assessed by that item.	Major Evaluation (60%)
Semester Grading			
Nine Week grade			40%
Nine Week grade			40%
Semester Exam	<i>For all high school credit courses (including those taught at middle school).</i>		20%

Late Work and Re-Do Guidelines

Late work is at the discretion of the teacher. There will be no retesting. If a student does poorly on a test, they will need to put in extra effort to do well on the remaining tests in order to get that average up.