

PRESCOTT UNIFIED SCHOOL DISTRICT

District Instructional Guide

Revised 6/3/15

Grade Level: PHS	Subject: Precalculus	Quarter/Semester: 1/1	Core Text: <i>Precalculus with Limits</i> by Houghton Mifflin
------------------	----------------------	-----------------------	---

Time Block	Unit / Theme	Content (Nouns)	Skills (Verbs)	Standards Focus P=Power	Assessments / Benchmarks
1 <sup>st</sup> week	Chapter P – Prerequisites	Graphical Representation of Data  Graphs of Equations	Plot points in the coordinate plane, represent data graphically, use the distant and midpoint formulas and find equations of circles  Sketch graphs of equations by plotting points and by using a graphing calculator	S4C3P02-R	Hmwk assignments  Quiz: 1.1
2 <sup>nd</sup> week		Lines in the Plane	Find the slopes of lines, write linear equations using point-slope equation, use slope-intercept to graph equations and use slope to identify parallel and perpendicular lines		Hmwk assignments  Test: P.1 – P.3
3 <sup>rd</sup> week		Solving Equations Algebraically and Graphically	Solve linear eq., find the x- and y-intercepts of graphs of eq., find solutions of equations graphically, find intersection points, solve polynomial eq., and solve equations involving radicals, fractions and absolute values	S1C1P02-E S3C3P05-E	Hmwk assignments  Quiz: P.4
4 <sup>th</sup> week		Solving Inequalities Algebraically and Graphically	Solve linear inequalities using prop. of inequalities , solve inequalities involving absolute values, solve polynomial inequalities and rational inequalities		Hmwk assignments
5 <sup>th</sup> week	Chapter 1: Functions and their graphs	Functions	Determine if relationships of variables are functions, use function notation, evaluate functions, and find domains		Test: Ch P  Hmwk assignments
6 <sup>th</sup> week		Graphs of functions	Determine domain and range of functions, test for functions using the vertical lines test, determine increasing and decreasing function, relative max & mins, identify and graph piece-wise functions, odd & even functions		Hmwk assignments  Linear and quadratic regression assignment
7 <sup>th</sup> week		Shifting, Reflecting and Stretching Graphs	Recognize graphs of common functions; use vertical, horizontal shifts, reflections & nonrigid trans to sketch graphs of functions		Hmwk assignments  Test 1.1-1.2

<b>Time Block</b>	<b>Unit / Theme</b>	<b>Content (Nouns)</b>	<b>Skills (Verbs)</b>	<b>Standards Focus P=Power</b>	<b>Assessments / Benchmarks</b>
8 <sup>th</sup> week		Combination of Functions  Inverse Functions	Determine how to add, subtract, multiply, and divide functions Find compositions. use combinations of functions  Find inverse functions and verify they are inverses, use graphs to determine if functions have inverses, find inverse functions algebraically		Hmwk assignments
9 <sup>th</sup> week					Hmwk assignments  Test Ch 1

Grade Level: PHS	Subject: Precalculus	Quarter/Semester: 2/1	Core Text: <i>Precalculus with Limits</i> by Houghton Mifflin
------------------	----------------------	-----------------------	---

<b>Time Block</b>	<b>Unit / Theme</b>	<b>Content (Nouns)</b>	<b>Skills (Verbs)</b>	<b>Standards Focus P=Power</b>	<b>Assessments / Benchmarks</b>
1 <sup>st</sup> week	Ch 2 - Polynomial Rational Functions (cont)	Polynomial Functions of Higher Degree  Real Zeros of Polynomial Functions	Use transformations to sketch graphs of poly functions, use leading coefficient test to determine end behavior find and use zeros of graphs, use intermediate value theorem to locate zeros of poly functions  Divide polynomials using long division, synthetic division, use Remainder theorem and Factor theorem., use Rational Zero test to determine possible zeros, determine upper and lower bounds for zeros	S3C2P01 S3C2P02 S3C2P11 S3C3P08 S5C2P03 S5C2P04 SICIP02  S3C2P01 S3C2P05 S3C2P06 S3C2P11 S3C3P06 S3C2P16 S3C3P08 S5C2P03 S5C2P04	Hmwk assignments

2 <sup>nd</sup> week		<b>Complex Numbers</b>	Use imaginary unit 'i' to write complex numbers, add, subtract and multiply complex numbers, use conjugates to divide, plot complex numbers on complex plane	S3C2P02 S3C3P06 SIC1P01 SIC2P01 SIC2P02 SIC2P03 S3C3P07	QUIZ: 2.1-2.2  Hmwk assignments
3 <sup>rd</sup> week		<b>Fundamental Theorem of Algebra</b>	Use Fundamental Theorem of Algebra to determine number of zero's in a poly function, find all zero's of function including complex zeros, find conjugate pairs of complex zeros, find zeros of poly by factoring  Find domains of rational functions, find horizontal and vertical asymptotes, use rational functions to solve real- life problems	S3C2P12 S3C3P08 S5C2P03 S5C2P04 S3C3P06 S5C2P03 S5C2P04	TEST: 2.1-2.3  Hmwk assignments
		<b>Rational Functions and Asymptotes</b>			

<b>Time Block</b>	<b>Unit / Theme</b>	<b>Content (Nouns)</b>	<b>Skills (Verbs)</b>	<b>Standards Focus P=Power</b>	<b>Assessments / Benchmarks</b>
4 <sup>th</sup> week	Ch 3 - Exponential and Logarithmic Functions	Graphs of Rational Functions	Analyze and sketch graphs of rational functions, determine if graph has slant asymptotes, use rational functions to solve real-life problems  Recognize, evaluate and graph exponential functions	S3C3P08 S5C2P03 S5C2P04	Hmwk assignments  TEST: Ch 2
5 <sup>th</sup> week		Logarithmic Functions and their Graphs  Properties of Logarithmic Functions	Recognize, evaluate and graph logarithmic functions  Rewrite log functions with different bases, use log properties to evaluate, rewrite, expand or condense log expressions		Hmwk assignments
6 <sup>th</sup> week					
7 <sup>th</sup> week		Solving Exponential and Log Equations	Solve simple to more complicated exponential and log equations		Hmwk assignments  Test: 3.1-3.3
8 <sup>th</sup> week		Exponential and Log Models	Recognize 5 most common exp. and log models, use exp growth and decay functions		Hmwk assignments  Test: Ch 3 (part one, part two)

9 <sup>th</sup> week					I <sup>st</sup> Semester FINAL: part one and part two
----------------------	--	--	--	--	--

Grade Level: PHS	Subject: Precalculus	Quarter/Semester: 3/2	Core Text: <i>Precalculus with Limits</i> by Houghton Mifflin
------------------	----------------------	-----------------------	---

Time Block	Unit / Theme	Content (Nouns)	Skills (Verbs)	Standards Focus P=Power	Assessments / Benchmarks
1 <sup>st</sup> week	Ch 4 - Trigonometric Functions	Radian and Degree Measures  Trig Functions: The Unit Circle	Describe angles, use radian and degree measures  Identify the unit circle and relationship to real numbers, evaluate trig functions on the unit circle, use calculator to evaluate trig functions	4.3.5, 4.4.1, 5.2.3, 5.2.4, 4.3.5, 4.4.1, 5.2.3, 5.2.4,	Hmwk assignments
2 <sup>nd</sup> week		Right Triangle Trigonometry	Evaluate trig functions of acute angles, use trig identities, use trig functions to solve problems	4.3.5, 4.4.1, 5.2.3, 5.2.4, 4.3.5, 4.4.1, 5.2.3, 5.2.4	Hmwk assignments
3 <sup>rd</sup> week		Trigonometric Functions of Any Angle	Evaluate trig functions of any angle and of real numbers, use reference angles to evaluate trig functions	4.3.5, 4.4.1, 5.2.3, 5.2.4	TEST: 4.1-4.3  Hmwk assignments
4 <sup>th</sup> week		Graphs of Sine and Cosine Functions	Sketch graphs of sine and cosine functions, use amplitudes, translations to graph functions	4.3.5, 4.4.1, 5.2.3, 5.2.4, 3.2.9, 4.2.3, 4.3.4, 4.4.1, 5.2.3, 5.2.4	TEST: 4.1-4.4  Hmwk assignments
5 <sup>th</sup> week		Graphs of Other Trigonometric Functions	Sketch graphs of tangent, cotangent, secant and cosecant functions	3.2.9, 4.2.3, 4.3.4, 4.4.1, 5.2.3, 5.2.4, 3.2.9, 4.2.3,	Hmwk assignments
6 <sup>th</sup> week		Inverse Trigonometric Functions  Applications and Models	Evaluate inverse sine, cosine and tangent functions, and compositions of trig functions  Solve problems involving right triangles, directional bearings, and harmonic motion	4.3.4, 4.4.1, 5.2.3, 5.2.4, 3.2.9, 4.4.1, 5.2.3, 5.2.4	QUIZ: 4.5-4.6  Hmwk assignments
7 <sup>th</sup> week	Ch 5 - Analytic Trigonometry	Using Fundamental Identities	Recognize and write fundamental trig identities, use fundamental trig identities to evaluate, simplify, and rewrite trig functions and expressions		TEST: Ch 4 part 1, part 2  Hmwk assignments

<b>Time Block</b>	<b>Unit / Theme</b>	<b>Content (Nouns)</b>	<b>Skills (Verbs)</b>	<b>Standards Focus P=Power</b>	<b>Assessments / Benchmarks</b>
8 <sup>th</sup> week		Verifying Trig Identities  Solving Trig Equations	Learn how to verify trig identities  Solve trig equations using algebraic techniques, factoring of quad types, eq. involving multiple angles, using inverse trig functions	5.2.3, 5.2.4	Hmwk assignments
9 <sup>th</sup> week		Sum & Difference Formulas	Use sum & difference formulas to evaluate trig functions, verify trig identities and solve trig equations	5.2.3, 5.2.4, 4.1.4, 5.3.3, 5.2.4,	Hmwk assignments QUIZ: 5.1-5.2 QUIZ: 5.1-5.3
10 <sup>th</sup> week		Multiple-Angle and Product-Sum Formulas	Use multiple-angle, power reducing, half-angle, and product-sum formulas to rewrite and evaluate trig functions.	4.1.1, 5.2.3, 5.2.4	Hmwk assignments  TEST: Ch 5

Grade Level: PHS	Subject: Precalculus	Quarter/Semester: 3/2	Core Text: <i>Precalculus with Limits</i> by Houghton Mifflin
------------------	----------------------	-----------------------	---

<b>Time Block</b>	<b>Unit / Theme</b>	<b>Content (Nouns)</b>	<b>Skills (Verbs)</b>	<b>Standards Focus P=Power</b>	<b>Assessments / Benchmarks</b>
1 <sup>st</sup> week	Ch 4 - Trigonometric Functions	Radian and Degree Measures  Trig Functions: The Unit Circle	Describe angles, use radian and degree measures  Identify the unit circle and relationship to real numbers, evaluate trig functions on the unit circle, use calculator to evaluate trig functions	4.3.5, 4.4.1, 5.2.3, 5.2.4, 4.3.5, 4.4.1, 5.2.3, 5.2.4,	Hmwk assignments
2 <sup>nd</sup> week		Right Triangle Trigonometry	Evaluate trig functions of acute angles, use trig identities, use trig functions to solve problems	4.3.5, 4.4.1, 5.2.3, 5.2.4, 4.3.5, 4.4.1, 5.2.3, 5.2.4	Hmwk assignments
3 <sup>rd</sup> week		Trigonometric Functions of Any Angle	Evaluate trig functions of any angle and of real numbers, use reference angles to evaluate trig functions	4.3.5, 4.4.1, 5.2.3, 5.2.4	TEST: 4.1-4.3  Hmwk assignments
4 <sup>th</sup> week		Graphs of Sine and Cosine Functions	Sketch graphs of sine and cosine functions, use amplitudes, translations to graph functions	4.3.5, 4.4.1, 5.2.3, 5.2.4, 3.2.9, 4.2.3, 4.3.4, 4.4.1, 5.2.3, 5.2.4	TEST: 4.1-4.4  Hmwk assignments

5 <sup>th</sup> week		Graphs of Other Trigonometric Functions	Sketch graphs of tangent, cotangent, secant and cosecant functions	3.2.9, 4.2.3, 4.3.4, 4.4.1, 5.2.3, 5.2.4, 3.2.9, 4.2.3,	Hmwk assignments
6 <sup>th</sup> week		Inverse Trigonometric Functions Applications and Models	Evaluate inverse sine, cosine and tangent functions, and compositions of trig functions  Solve problems involving right triangles, directional bearings, and harmonic motion	4.3.4, 4.4.1, 5.2.3, 5.2.4, 3.2.9, 4.4.1, 5.2.3, 5.2.4	QUIZ: 4.5-4.6 Hmwk assignments
7 <sup>th</sup> week	Ch 5 - Analytic Trigonometry	Using Fundamental Identities	Recognize and write fundamental trig identities, use fundamental trig identities to evaluate, simplify, and rewrite trig functions and expressions		TEST: Ch 4 part 1, part 2 Hmwk assignments

Time Block	Unit / Theme	Content (Nouns)	Skills (Verbs)	Standards Focus P=Power	Assessments / Benchmarks
8 <sup>th</sup> week		Verifying Trig Identities  Solving Trig Equations	Learn how to verify trig identities  Solve trig equations using algebraic techniques, factoring of quad types, eq. involving multiple angles, using inverse trig functions	5.2.3, 5.2.4	Hmwk assignments
9 <sup>th</sup> week		Sum & Difference Formulas	Use sum & difference formulas to evaluate trig functions, verify trig identities and solve trig equations	5.2.3, 5.2.4, 4.1.4, 5.3.3, 5.2.4,	Hmwk assignments QUIZ: 5.1-5.2 QUIZ: 5.1-5.3
10 <sup>th</sup> week		Multiple-Angle and Product-Sum Formulas	Use multiple-angle, power reducing, half-angle, and product-sum formulas to rewrite and evaluate trig functions.	4.1.1, 5.2.3, 5.2.4	Hmwk assignments  TEST: Ch 5