

**Math Department Curriculum Map Template, 2018-19**

**Subject: Pre-Calculus**

**Textbook:** "Precalculus with Limits" By Larson and Hostetler © 2007

2018-19 Marking Periods	Unit	Topics/Skills	Evidence of Learning (Assessments)	Resources (texts, online tools, etc.)
<p align="center"><b>Marking Period 1 (Sept 7 – Nov )</b></p>	Appendix	<ul style="list-style-type: none"> <li>• Factoring (All Methods)</li> <li>• Quadratic Formula</li> <li>• Completing the Square</li> <li>• Exponents</li> </ul>	<ul style="list-style-type: none"> <li>• Quizzes</li> <li>• Castle Learning</li> <li>• Exit Tickets</li> <li>• Do Nows</li> <li>• Class Discussion</li> <li>• Daily Handouts</li> <li>• Unit Review &amp; Re-engagement Activities</li> <li>• Unit Exam</li> </ul>	WCC Question Bank Precalculus Text
	Functions and Their Graphs	<ul style="list-style-type: none"> <li>• Rectangular Coordinates</li> <li>• Evaluating Functions (including difference quotient)</li> <li>• Graphs of Functions (Piece-wise, etc.)</li> <li>• Analyzing Graphs (even/odd, inc/dec.)</li> <li>• Combinations of Functions (Composition &amp; Decompositions)</li> <li>• Inverse Functions</li> <li>• Family of Functions/ Transformations</li> </ul>		Chapter 1 (approx. 12 days)
	Polynomials	<ul style="list-style-type: none"> <li>• Quadratic Functions (Standard, Intercept, Vertex Form)</li> <li>• Polynomials of Higher Degree</li> <li>• Real Zeros of Polynomial Functions</li> <li>• Complex #'s</li> <li>• Fundamental Theorem of Algebra</li> <li>• Long Division &amp; Synthetic Division</li> </ul>		Chapter 2 (approx. 12 days)
	Rational Functions	<ul style="list-style-type: none"> <li>• Rational Expressions &amp; Equations</li> <li>• Rational Functions &amp; Asymptotes</li> <li>• Graphing Rational Functions</li> <li>• Operations with Radicals</li> </ul>		Chapter 2 Continued (approx 6 days)
<p align="center"><b>Marking Period 2 (Nov – Jan )</b></p>	Exponential and Logarithmic Functions	<ul style="list-style-type: none"> <li>• Exponential Functions &amp; their Graphs</li> <li>• Transformations of Exponential Functions</li> <li>• Functions involving "e"</li> <li>• Applications</li> <li>• Writing Exponential Functions</li> <li>• Evaluating Logs</li> <li>• Inverse Logs</li> <li>• Log Functions &amp; their Graphs</li> <li>• Properties of Logs</li> <li>• Solving Exponential &amp; Log Equations</li> </ul>		Chapter 3 (approx. 18 days)
	Trigonometric Functions	<ul style="list-style-type: none"> <li>• Radian &amp; Degree Measure</li> <li>• Reference Angles &amp; Coterminal Angles</li> <li>• Arc Length</li> <li>• The Unit Circle</li> <li>• Right Triangle Trigonometry</li> <li>• Special Right Triangles</li> <li>• Simplifying &amp; Verifying Identities</li> <li>• Graphing Sine &amp; Cosine Functions</li> <li>• Graphing Transformations</li> <li>• Writing Trig Equations</li> <li>• Graphing Other Trig Functions/Reciprocal</li> <li>• Inverse Trig Functions</li> <li>• Composition of Trig Functions</li> </ul>		Chapter 4 (part 1, 2)
	<p><b>Midterm Assessment (Cumulative) for Regular Pre-Cal Courses : January 16 (short-answer) -January 17 (multiple choice)</b></p>			

**Math Department Curriculum Map Template, 2018-19**

<p><b>Marking Period 3 (Jan – Apr )</b></p>	Analytic Trigonometry	<ul style="list-style-type: none"> <li>• Simplifying and verifying pythagorean and reciprocal identities</li> <li>• Solving Linear &amp; Non-linear Trig Equations</li> <li>• Identities (Sum &amp; Difference, Double/Half Angle)</li> <li>• Solving Trigonometric Equations with identities</li> </ul>		Chapter 5 (10 days)
	Additional Topics in Trigonometry	<ul style="list-style-type: none"> <li>• Law sines, law of cosines</li> <li>• Area of a Triangle</li> <li>• Ambiguous case</li> <li>• Vector in a Plane</li> <li>• Vectors and Dot Products</li> <li>• Component Form of a Vector</li> <li>• Vector Operations (Graphically and Algebraically)</li> <li>• Direction Angle of a Vector</li> <li>• Angle between two Vectors</li> <li>• Orthogonal/Normal Vectors</li> <li>• Trigonometric Form of a Complex Number</li> </ul>		Chapter 6 (12 days)
	System of Equations and Inequalities	<ul style="list-style-type: none"> <li>• Linear and Non-Linear System of Equations</li> <li>• Multivariable Linear Systems</li> <li>• System of Inequalities</li> <li>• The Graph of an Inequality</li> <li>• System of Inequalities</li> <li>• Linear Programming</li> </ul>		Chapter 7 (12 days)
	Matrices and Determinant	<ul style="list-style-type: none"> <li>• Operations of Matrices and Systems of Equations</li> <li>• Matrices</li> <li>• Solve using an augmented Matrix</li> <li>• The Determinant of a Square Matrix</li> <li>• The Inverse of a Matrix</li> <li>• Cramer's Rule</li> </ul>		Chapter 8 (12 days)
<p><b>Marking Period 4 (Apr – Jun )</b></p>	Topics and Analytic Geometry	<ul style="list-style-type: none"> <li>• Parabolas</li> <li>• Circles</li> <li>• Ellipses</li> <li>• Hyperbolas</li> </ul>		Chapter 10 (12 days)
	Polar & Rectangular coordinates	<ul style="list-style-type: none"> <li>• Parametric Equations</li> <li>• Converting polar and rectangular coordinates</li> <li>• Converting polar and rectangular equations</li> <li>• Graphing polar coordinates and equations</li> </ul>		Chapter 10 Continued
	Limits and Introduction to Calculus	<ul style="list-style-type: none"> <li>• Graphical approach to limits</li> <li>• Algebraic approach to limits</li> <li>• Infinite of limits</li> <li>• Rationalizing limits</li> <li>• Definition of the derivative</li> <li>• Derivative of sine and cosine graphically</li> </ul>		Chapter 12 (20 days)
	<b>Unit: Final Review</b>			
<b>Final Assessment: End of May</b>				
<b>Summer</b>	<b>Summer Assignment (Bridge to AP Calculus):</b>			