

Grade	S2	Subject	Precalculus
Course	ICA		
Class Hours	3 Hours/Week		

3	Apply knowledge to solve real-world problems using precalculus concepts. Apply mathematical reasoning.	Reason mathematically. Model real-world situations using precalculus concepts.	Create an original problem or model using equations that benefits society. Construct viable arguments.
2	Use the property of equality to solve equations. Look for structure.	Connect mathematical concepts. Critique the reasoning of others.	Efficiently and strategically deconstruct problems. Use tools strategically.
1	Identify the problem and given information. Know the meaning of key vocabulary.	Break down equations into manageable components.	Reason abstractly and quantitatively. Make use of structure.
	A Recognition	B Logical Thinking	C Creative Thinking

### Competencies

① Inquiry	Continually ask questions about mathematical matters and pursue the roots of logical thinking.
② Problem Solving	Identify the given information and the logical components of the problem. Make sense of problems and persevere in solving them.
③ Creativity	Use mathematical reasoning in real world situations. Connect mathematical models to practical solutions. Ask “what if” questions about the nature of mathematics.

Term	Month	Unit	Unit Goals	Activities
1	4	Chapter 1 - Functions	<ul style="list-style-type: none"> <li>Students will be able to write equations using function notation, and create compositions, translations, and inversions of functions.</li> </ul>	<ul style="list-style-type: none"> <li>Matching transformed functions to their equations, and identification of the parent functions.</li> <li>Determining lines of best fit using sum of least squares method.</li> <li>Solving systems of equations using Gaussian elimination, inverse matrices, and Cramer’s rule.</li> </ul>
	5	Chapter 2 - Linear Functions	<ul style="list-style-type: none"> <li>Students will be able to solve, and graph, linear functions, model situations using linear functions, and fit a linear function to a data set.</li> </ul>	
	6 7	Chapter 9 - Systems of Equations and Inequalities	<ul style="list-style-type: none"> <li>Students will be able to solve systems of equations in 2 and 3 variables, perform matrix operations, and solve systems using matrices.</li> </ul>	
2	9	Chapter 10 – Analytic Geometry	<ul style="list-style-type: none"> <li>Students will be able to write equations for and graph various conic sections.</li> </ul>	<ul style="list-style-type: none"> <li>Identifying the unique properties of individual conic sections, possible applications of these properties and where they appear in the real world.</li> <li>Analyzing graphical representations of statistics in everyday life, determining whether or not they are being used in a misleading manner, and the intent of the creator in doing so.</li> </ul>
	10 11 12	Inferential Statistics	<ul style="list-style-type: none"> <li>Students will be able to understand how statistics influence our world views, use statistics to support an argument, and identify when statistics are being used deceptively.</li> </ul>	
3	1 2 3	Chapter 12 – Introduction to Calculus	<ul style="list-style-type: none"> <li>Students will be able to evaluate limits graphically and numerically, identify locations of discontinuity and intervals of differentiability, and use the definition of the derivative.</li> </ul>	<ul style="list-style-type: none"> <li>Using the definition of the derivative to find rates of change of constant, linear, quadratic, rational, and radical functions.</li> </ul>