

CCS COURSE MAP

SUBJECT: PRECALCULUS

GRADE LEVEL 11th-12th GRADE
COURSE LENGTH YEAR

REVIEWED 2018-2019

Student Goals:					
		I	To focus on all the skills that will be needed to succeed in calculus and beyond.		
		II	To reinforce mathematical skills and concepts from previous courses to build a strong foundation for calculus.		
		III	To sharpen students' critical thinking skills and introduce them to the usefulness and applicability of mathematics beyond the classroom.		
Student Outcomes:					
		I	The students will be able to obtain knowledge of basic concepts of Calculus, including equations and inequalities, functions (polynomial, rational, exponential, and logarithmic), systems of equations and matrices.		
		II	The students will be able to grasp bigger and more complex mathematical concepts for applications in calculus and science.		
UNIT/ WEEKS	STANDARD	OBJECTIVES	ACTIVITIES/ASSESSMENT	RESOURCES	BIBLICAL INTEGRATION
1. Equations, Inequalities and Modeling 4 weeks	9.2.2.1 9.2.4.1 9.2.4.3 9.2.4.4 9.2.4.6	Students will be able to solve linear and quadratic equations, inequalities, and absolute values. Students will be able to write and use formulas and equations as models of real situations. Students will be able to solve problems involving complex numbers.	Classroom discussions/lecture/demonstration by teacher and students. In-class work. Homework Quiz/test	Pearson/Addison Wesley Trigonometry Ninth Edition © 2009	Students will be able to use mathematics as a tool to explore and manage God's creation and to glorify God, especially for His created order in mathematics.

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<p>2. Functions and Graphs 4-5 weeks</p>	<p>9.2.1.1 9.2.1.2 9.2.1.3 9.2.1.4 9.2.1.8 9.2.1.9 9.2.2.1 9.2.2.6 9.2.3.2</p>	<p>Students will be able to determine whether a relation is a function, find average rate of change of a function, graph relations, perform transformations of functions, perform operations with functions, find inverses, and construct functions with variation.</p>	<p>Classroom discussions/lecture/demonstration by teacher and students.</p> <p>In-class work.</p> <p>Homework</p> <p>Quiz/test</p>	<p>Pearson/Addison Wesley Trigonometry Ninth Edition © 2009</p>	<p>Students will be able to use mathematics as a tool to explore and manage God's creation and to glorify God, especially for His created order in mathematics.</p>
<p>3. Polynomial and Rational Functions 4-5 weeks</p>	<p>9.2.1.2 9.2.1.4 9.2.1.5 9.2.1.6 9.2.2.3</p>	<p>Students will be able to understand polynomial and rational functions and inequalities and their graphs, find the axis of symmetry, minimum or maximum, and intercepts.</p> <p>Students will be able to find zeros of polynomial functions and find the number of roots of an equation.</p> <p>Students will be able to model many real-life situations using polynomial and rational functions and their graphs..</p>	<p>Classroom discussions/lecture/demonstration by teacher and students.</p> <p>In-class work.</p> <p>Homework</p> <p>Quiz/test</p>	<p>Pearson/Addison Wesley Trigonometry Ninth Edition © 2009</p>	<p>Students will be able to use mathematics as a tool to explore and manage God's creation and to glorify God, especially for His created order in mathematics.</p>

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<p>4. Exponential and Logarithmic Functions 3-4 weeks</p>	<p>9.2.1.3 9.2.1.4 9.2.1.7 9.2.2.2 9.2.2.3</p>	<p>Students will be able to solve problems involving exponential and logarithmic functions.</p> <p>Students will understand the concept of an asymptote.</p>	<p>Classroom discussions/lecture/demonstration by teacher and students.</p> <p>In-class work.</p> <p>Homework</p> <p>Quiz/test</p>	<p>Pearson/Addison Wesley Trigonometry Ninth Edition © 2009</p>	<p>Students will be able to use mathematics as a tool to explore and manage God's creation and to glorify God, especially for His created order in mathematics.</p>
<p>5. Trigonometric Functions 4-5 weeks</p>	<p>9.2.1.2 9.2.1.3 9.2.1.4 9.2.1.9 9.3.4.1 9.3.4.2 9.3.4.3</p>	<p>Students will be able to convert between degree and angle measure, find arc length and angular and linear velocity.</p> <p>Students will understand the six trig functions in regards to the unit circle and be able to graph the six trig functions.</p> <p>Students will be understand the six trig functions using right triangle trigonometry.</p>	<p>Classroom discussions/lecture/demonstration by teacher and students.</p> <p>In-class work.</p> <p>Homework</p> <p>Quiz/test</p>	<p>Pearson/Addison Wesley Trigonometry Ninth Edition © 2009</p>	<p>Students will be able to use mathematics as a tool to explore and manage God's creation and to glorify God, especially for His created order in mathematics.</p>

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<p>6. Trigonometric Identities and Conditional Equations 4 weeks</p>	<p>9.2.3.7 9.3.4.2</p>	<p>Students will be able to use basic trig identities to verify other identities.</p> <p>Students will be able to solve conditional trigonometric equations.</p>	<p>Classroom discussions/lecture/demonstration by teacher and students.</p> <p>In-class work.</p> <p>Homework</p> <p>Quiz/test</p>	<p>Pearson/Addison Wesley Trigonometry Ninth Edition © 2009</p>	<p>Students will be able to use mathematics as a tool to explore and manage God's creation and to glorify God, especially for His created order in mathematics.</p>
<p>7. Applications of Trigonometry 3-4 weeks</p>	<p>9.2.1.2</p>	<p>Students will be able to use the Law of Sines and the Law of Cosines to find the area of a triangle.</p> <p>Students will be able perform operations with vectors.</p> <p>Students will be able to find the powers and roots of complex numbers.</p> <p>Students will understand basic polar and parametric equations.</p>	<p>Classroom discussions/lecture/demonstration by teacher and students.</p> <p>In-class work.</p> <p>Homework</p> <p>Quiz/test</p>	<p>Pearson/Addison Wesley Trigonometry Ninth Edition © 2009</p>	<p>Students will be able to use mathematics as a tool to explore and manage God's creation and to glorify God, especially for His created order in mathematics.</p>

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<p>8. Systems of Equations and Inequalities 3-5 weeks</p>	<p>9.2.4.4 9.2.4.5</p>	<p>Students will be able to solve systems of linear and nonlinear equations and inequalities.</p> <p>Students will be able to use linear programming to solve practical problems.</p>	<p>Classroom discussions/lecture/demonstration by teacher and students.</p> <p>In-class work.</p> <p>Homework</p> <p>Quiz/test</p>	<p>Pearson/Addison Wesley Trigonometry Ninth Edition © 2009</p>	<p>Students will be able to use mathematics as a tool to explore and manage God's creation and to glorify God, especially for His created order in mathematics.</p>

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