Mt. Zion High School Curriculum Map

Name:__Matthew Moore_____Department:_____Mathematics_____Subject:_____Pre-Calculus_____

Quarter	Essential Skills	Strategies and Activities	CC Standards	Assessments
Q1	1. Students will be able to recognize, describe, and create mathematic functions symbolically and graphically utilizing limits, transformations, operations, and inverses.	1.a.Students will analyze graphs of functions and relations including end behavior.	1.a F-IF.HS.1-2, F-IF.HS.4-5	1. Chapter 1 Quiz/test, Semester 1 Exam
Q1		1.b.Student will analyze graphs and equations over intervals for key features; max, min, avg rate of change, etc.	1.b. F-IF.HS.4-7d	1. Chapter 1 Quiz/test, Semester 1 Exam
Q1		1.c.Students will understand, analyze, and create various functions from parent functions both by hand and with use of technology.	1.c. F-IF.HS.7 a-e - 9, F-BF.HS.1	1. Chapter 1 Quiz/test, Semester 1 Exam
Q1		1.d.Students will be able to identify compose and solve functions by operations, combinations, and compositions.	1.d. F-BF.HS.3	1. Chapter 1 Quiz/test, Semester 1 Exam
Q1		1.e.Students will understand, analyze, manipulate, and create Inverse relations and functions.	1.e. F-BF.HS.4 a-d	1. Chapter 1 Quiz/test, Semester 1 Exam

Q1	2. Students will be able to recognize, describe, and create power, polynomial, and rational functions symbolically and graphically utilizing by hand and technology methods.	2.a.Students will be able to graph and analyze power and radical functions and solve radical equations	2.a. A-APR.HS.1,6, A-REI.HS.1-4	2. Chapter 2 quiz/test, Semester 2 Exam
		2.b. Students will be able to find key polynomial values symbolically and graphically using zeros and remainders in both real and complex form	2.b. A-REI.HS.1-4,1.b. F-IF.HS.7d	2. Chapter 2 quiz/test, Semester 2 Exam
		2.c. Students will be able to find key polynomial values symbolically and graphically using zeros and remainders in solving for both real and complex form	2.c. A-APR.HS.1,6,7 A-REI.HS.1-4	2. Chapter 2 quiz/test, Semester 2 Exam
		2.d. Students will be able to solve polynomial and rational inequalities	2.d. A-REI.HS.10,12	2. Chapter 2 quiz/test, Semester 2 Exam
Q1	3. Students will be able to recognize, describe, and create power, polynomial, and rational functions symbolically and graphically utilizing by hand and technology methods.	3.a. Students will be able to evaluate, analyze, graph, and solve exponential and logarithmic functions	3.a. A-REI.HS.11, F-IF.HS.7de,8b, F-BF.HS.5	3. Chapter 3 quiz/test, Semester 3 Exam
		3.b. Students will be able to apply properties of logorithms including change of base to manipulate functions and solve equations	3.b. A-REI.HS.11, F-IF.HS.7de, F-BF.HS.5	3. Chapter 3 quiz/test, Semester 3 Exam

		3.c. Students will be able to use linear, exponential, logistic, and logarithmic funtions to display, model, and interpret data.	3.c. F-IF.HS.9, F-LE.HS.1-5	3. Chapter 3 quiz/test, Semester 3 Exam
Q2	4. Students will be able to recognize, describe, and create trigonometric functions and equations symbolically and graphically utilizing by hand and technology methods.	4.a. Students will be able to understand and use the trigonometric properties of the right triangle and unit circle in both radians and degrees.	4.a. F-TF.HS.1-4, G-SRT.HS.6-8	4. Chapter 4 quiz/test, Semester 4 Exam
		4.b. Students will be able to read, interpret, and create graphs for the six trigonometric functions and their inverses from data, equations, and situations.	4.b. F-TF.HS.5-7	4. Chapter 4 quiz/test, Semester 4 Exam
		4.c. Students will understand and be able to apply the law of sines and law of cosine and their corralaries to general (i.e. non-right) triangles.	4.c. G-SRT.HS.9-11	4. Chapter 4 quiz/test, Semester 4 Exam
Q2	5. Students will be able to recognize, appy, and in some cases prove trigonometric identities in order to manipulate and solve trigonometric equations using a variety of methods.	5.a. Students will identify and verify trigonometric identities to solve basic trigonometric equations.	5.a. F-TF.HS.8-9	5. Chapter 5 quiz/test, Semester 5 Exam

		5.b. Students will expand their use and application of trigonometric identities to include sum/difference, reductions, and product/sum identities	5.b. F-TF.HS.8-9	5. Chapter 5 quiz/test, Semester 5 Exam
Q3	6. Students will be able to utilize multiple methods for manipulating and solving, where possible, multivariable linear systems.	6a. Students will be able to identify and arrange in standard for a multivariate linear system and use substitution, elimination, and graphing techniques to solve without assistance of technology.	5a. N-VM.6	6. Chapter 6 quiz/test, Semester 6 Exam
		6b. Students will be able to perform addition, subtraction, and multiplication of matricies both with and without the assistance of technology.	5a. N-VM.7-12	6. Chapter 6 quiz/test, Semester 6 Exam
		6c. Students will be able to use inverses to solve both sanitized and application prolems for multiple variables using technology.	5a. N-VM.7-12	6. Chapter 6 quiz/test, Semester 6 Exam
		6d. Students will be introduced to partial fractions and the heavyside method of fractional decomposition.		6. Chapter 6 quiz/test, Semester 6 Exam
Q3	7. Students will be able to represent the four basic conics algebraically and graphically in multiple forms both by hand and utilizing technology.	7a. Students will be able to represent Parabolas algebraically and graphically in multiple forms both by hand and utilizing technology.	6. G-GPE.1-3	7. Chapter 7 quiz/test, Semester 7 Exam

		7b. Students will be able to represent circles and ellipses algebraically and graphically in multiple forms both by hand and utilizing technology.	6. G-GPE.1-3	7. Chapter 7 quiz/test, Semester 7 Exam
		7c. Students will be able to represent hyperbolas algebraically and graphically in multiple forms both by hand and utilizing technology.	6. G-GPE.1-3	7. Chapter 7 quiz/test, Semester 7 Exam
Q4	8. Students will be able to represent and operate with vectors both geometrically and algebraically.	8a. Students will be able to represent a vector with both magnitude and direction and combine vectors to find resultant forms.	N-VM. 1-3	8. Chapter 8 quiz/test, Semester 8 Exam
		8b. Using a coordinate plane students will be able to represent vectors as sums of vertical and horizontal components and performing basic operations on the result in both two and three dimensions.	N-VM.4,5	8. Chapter 8 quiz/test, Semester 8 Exam
		8c. Students will calculuate and descreibe perpendicular and parallel vectors using the dot product and cross product.	N-VM.4,5	8. Chapter 8 quiz/test, Semester 8 Exam
Q4	9. Students will be able to represent values, equations, and graphs in Polar form.	9a. Students will be able to convert from rectangular for and represent numerically and graphically polar coordinates.	NA	9. Chapter 9 quiz/test, Semester 9 Exam

		9b. Students will be able to convert from polar form and represent numerically and graphically rectangular coordinates.	NA	9. Chapter 9 quiz/test, Semester 9 Exam
Q4	10. Students will understand and be able to create, manipulate, and modify sequences and series in both expanded and sigma notation.	10a. Students will be able to identify and differentiate between series and sequence and utilize sigma notation.	F-BF.2	10. Chapter 10 quiz/test, Semester 10 Exam
		10b. Students will be able to identify, manipulate, and utilize arithmetic series.	F-BF.2	10. Chapter 10 quiz/test, Semester 10 Exam
		10c. Students will be able to identify, manipulate, and utilize geometric series.	F-BF.2	10. Chapter 10 quiz/test, Semester 10 Exam