

Martin Luther High School
Pre Calc
2018 - 2019
Mr. Taylor

Class Room Rules

1. Follow all rules as printed in the student handbook.
2. The student will be in their seat when the bell rings.
3. It is the student's responsibility to take proper care of the equipment issued to them. Books will be covered.
4. Homework is to be turned in on its given due date at the beginning of class (when I ask for it). If for some reason you are unable to turn in your homework on time, then it will be docked 50% of the grade for that day. If it is two days late, then it loses the other half of the value bringing it down to a 0%. If, however, you have most of your assignment finished but had trouble with a certain section you will be allowed to turn it in as long as you finish it before the end of the school day. (I will verify that you do indeed have most of it finished.) It is in your best interest to do your homework and turn it in on time. If you do not do your homework, don't bother asking for extra credit.
5. If you are absent, you will be allowed as many days that you were absent to make up the work that was missed. Tests, however, will be made up on the day that you return unless you were absent prior to the announcement of the test. Quizzes will be made up as soon as you complete the work covered on the quiz. If you were absent it is your responsibility to get any assignments that were missed.
6. The student will respect all others as fellow human beings created by God. Put downs will not be tolerated.
7. Homework is to be done in pencil and work is to be shown. Failure to show your work will result in loss of points. Each assignment is worth 10 points. If you are between a 9.5 and a 10 but did not show your work you will get a 9.5. **I absolutely will not accept homework done in pen unless you need it to compare different graphs.** (Two day assignments will be worth 20 points).
8. Anytime the book says "sketch" you will accurately graph that problem on **GRAPH PAPER**. When the book says "plot", that means just put it on your calculator.
9. Test corrections must be completed before next test is given.

Consequences for the Violation of Rules

Depending on severity. Students are subject to detention, parental phone call, an unexcused absence (and a zero for the day) and class suspension.

Grading

Each quarter grade will count as 40% of your semester grade and the final will count as 20% of your semester grade. In order to receive credit for the semester the student must pass at least two of the three grading units. For example they must pass both quarters or a quarter and a final.

Each quarter is made up of the following:

Chapter tests / Mid Chapter Tests	100 points each
Test Corrections	30 points each (Must be completed before next test)
Homework	10 points each (2 day assignments are 20 points)

Your grade is then calculated with the following equation. **Points earned / points possible.**

Materials to Bring

1. Textbook
2. Pencil and a Pen
3. Paper (including graph paper)
4. Notebook / Folder
5. TI-83 Graphing Calculator

Each student will also be allowed a birthday assignment, which is one assignment during the course of the year that they do not need to turn in. You will automatically receive a 10 out of 10 for your birthday assignment. This assignment can but does not need to be taken on the student's birthday. Since a student only has one birthday per year, a student will only get one birthday assignment per year. (No it does not count for tests and quizzes.) You are, however, still responsible for the material covered on that lesson. Birthday assignments may not be taken on two day assignments or on review assignments.

PRE-CALCULUS

COURSE DESCRIPTION

This course is designed for those students wishing to continue the demanding discipline of mathematics and also to progress into a college environment in a math-related field. Analytical geometry, functions, quadratic functions, polynomials, trigonometry, parametric equations, polar equations, exponential and logarithmic functions, solving systems of equations using matrices, conic sections, sequences and series and probability will all be covered. A graphing calculator will be issued to each student for this course.

COURSE OBJECTIVES

1. Grow in their faith in Jesus Christ
2. Be able to identify various types of functions
3. Be able to identify dilations, rotations, and transformations when given a functions equation.
4. Graph functions and their inverses as well as relations
5. Graph Quadratic functions and find their zeros.
6. Graph the six trigonometric functions and variations of them.
7. Verify trigonometric identities and solve trigonometric equations.
8. Find unknown sides and areas of oblique triangles.
9. Add subtract and graph vectors as well as solving problems pertaining to them.
10. Graph parametric equations.
11. Graph equations in polar form and switch back and forth between polar form and rectangular form.
12. Graph the different conic sections and transformations of conic sections.
13. Work with Logarithms and identify the properties of logarithms.
14. Work with sequences and series.
15. Work with Probability and Statistics
16. Find Limits and Derivatives of different functions.

COURSE OUTLINE

Assignment Key

ITF Integrating the Faith
RC Reading Comprehension
TEC Technology

- I. Functions and Mathematical Models RC
 - A. Identify types
 - B. Manipulate
 - C. Composite
 - D. Inverse
 - E. Transformations
- II. Periodic Functions and Right Triangle Problems RC
 - A. Six Trig Functions
 - B. Inverse of Trig Functions
 - C. Triangle Problems
- III. Application of Trig RC
 - A. Sinusoids
 - o Amplitude
 - o Period

- Cycles
 - Graphing
- B. Radian Measures
- C. Circular Functions TEC
- D. Inverse of Circular Functions

- IV. Properties of Sinusoids RC
 - A. Combinations
 - B. Composites
 - C. Ordinates
 - D. Sum and Product Properties
 - E. Double and Half angle Identities

- V. Oblique Triangles RC
 - A. Law of Cosines
 - B. Law of Sines
 - C. Area
 - D. Vectors TEC

- VI. Elementary Functions RC
 - A. Shapes
 - B. Graphical Patterns
 - C. Numerical Patterns
 - D. Logarithms

- VII. Probability ITF, RC
 - A. Counting Principles
 - B. Permutations
 - C. Combinations
 - D. Random Variable Functions

- VIII. Vectors RC
 - A. Two Dimensional
 - B. In Space
 - Equations
 - Planes
 - C. Scalar Products

- IX. Matrices RC
 - A. Matrix Operations
 - B. Iterated Transformations

- X. Conic Sections RC
 - A. Cartesian Equations
 - B. Parametric Equations
 - C. Inscribed Figures
 - D. Rotated Conics
 - E. Applications TEC

- XI. Polar Coordinates RC
 - A. Coordinates
 - B. Equations of Conics
 - C. Polar Curves
 - D. Complex numbers

- XII. Sequences and Series RC
 - A. Arithmetic
 - B. Geometric
 - C. Partial Sums

- XIV Limits and Derivatives RC

RESOURCES

Precalculus with Trigonometry, Concepts and Applications. Key Curriculum Press 2003.