***TMSA Math 3 Course Syllabus***

***Teacher Contact Information***

Robin Lindauer: Contact me through email at [rlindauer@tmsacademy.org](mailto:rlindauer@tmsacademy.org).

The class website is at lindauermath3.weebly.com.

***Course Outline***

Last year you took Math 2 which has prepared you for Math 3.   The major themes are Reasoning with Equations/Inequalities, Arithmetic over Polynomials and Rational Expressions, Linear, Quadratic and Exponential Models, Complex Number System, Modeling with Geometry, Congruence and Similarity, Circles and Trigonometric Functions and Probability to make decisions. In Math 2 you were introduced to several of these themes.  This year we will delve deeper into the coursework to prepare you for Pre-Calculus.

***School Provided Materials***

In Math 3, we may use the Prentice Hall Algebra 2 and Geometry textbooks for the course.  We will be using other resources throughout the course.

***Student Required Materials***

Pencil (Only utensil allowed for math).

Loose leaf notebook paper.

One inch three-ring binder with pockets.

Eraser (Part of learning is making mistakes).

TI-83 or TI-84 series calculator. Write your name on your calculator. No sharing calculators please.

Dry erase markers, graph paper, ruler and erasable colored pencils for class activities.

***STEM Integration***

We will be following the standards based pathway for Math 3.  The standards based pathway means that I will use the math standards to create lessons and assessments.

***Units and Essential Questions***

* Unit 1: Functions, Equations, and Graphs
  + Covered this topic in both Math 1 and Math 2.  This section should be a review.
  + Does it matter which form of a linear equation you use?
  + How do you use transformations to help graph absolute value functions?
  + This will be helpful as a foundation as we move into more advanced topics
* Unit 2: Quadratic Functions and Equations
  + Some of the basics of this unit will have been covered in Math 1 and Math 2.
  + What are the advantages of a quadratic equation in vertex form? in standard form?
  + How are the real solutions of a quadratic equation related to the graph of the related quadratic equation?
  + This topic will be helpful when looking at a situation through various lens.  It will also help to prepare students for Pre-Calculus.
* Unit 3: Polynomials and Polynomial Functions
  + This unit is primarily new for students.  The basic vocabulary was initiated in Math 1.
  + What does the degree of a polynomial tell you about the related polynomial function?
  + For a polynomial function, how are factors, zeros, and x-intercepts related?
* Unit 4: Radical Functions and Rational Exponents
  + This unit will relate back to topics covered in Math 1 and Math 2.
  + To simplify the nth root of an expression, what must be true about the expression?
  + When you square each side of an equation, is the resulting equation equivalent to the original?
  + How are a function and its inverse related?
  + This unit will help students prepare for Pre-Calculus.
* Unit 5:  Exponential and Logarithmic Functions
  + This unit will relate back to topics covered in Math 1 and Math 2.
  + How do you model a quantity that changes regularly over time by the same percentage?
  + How are exponents and logarithms related?
  + Students will use these concepts when calculating interest over time.
* Unit 6:  Rational Functions
  + This unit will relate back to topics covered in Math 1.  Most of this material will be new to the students.
  + Are two quantities inversely proportional if an increase in one corresponds to a decrease in the other?
  + What kinds of asymptotes are possible for a rational function?
  + Students will use these concepts for Pre-Calculus.
* Unit 7 Geometry
  + This unit will build on topics covered in Math 1 and Math 2.
  + How do perimeter and area of similar polygons compare?
  + How do you determine the intersection of a plane and a solid?
  + How can you prove relationships between angles and arcs in a circle?
  + How do you derive the equation of a circle in the coordinate plane?
  + This unit will benefit students interested in architecture and some areas of engineering.  It will also help students prepare for Pre-Calculus.
* Unit 8 Periodic Functions and Trigonometry
  + This unit will relate back to topics covered in Math 2.
  + How can you model periodic behavior?
  + If you know the value of sin(x), how do you find the other trigonometric functions?
  + This unit will help students prepare for Pre-Calculus.
* Unit 9 Statistics
  + This unit will relate back to topics covered in Math 1.
  + How are measures of central tendency different from standard deviation?
  + Why are samples of a population studied?  What makes a good sample?
  + Students can use this everyday by interpreting the statistics presented on the news.  This unit will help students prepare for Pre-Calculus.

**GRADING POLICY:**

**Each quarter**: **60% major:**

a) all tests are announced

b) formulas are permitted on tests unless otherwise noted

c) calculators are not permitted on tests unless otherwise noted

d) no retakes of any test

e) tests are not sent home

**30% medium:**

a) quizzes are announced

b) formulas are permitted on quizzes unless otherwise noted

c) calculators are not permitted on quizzes unless otherwise noted

d) can be independent, group, take home, homework, classwork and/or notebook

e) no retakes of any quiz

f) projects may be included

**10% minor (homework and test corrections):**

1. test corrections are required for any test score below a 98% before bonus

b) test corrections are due back 1 week after tests are graded

c) all missed questions will be written on a separate sheet of paper and

reworked correctly

d) test corrections may be turned in multiple times without a penalty

e) homework is assigned after each class with the possible exception of test days

f) homework is checked for completion only as answers are provided

g) homework should show all work for credit

h) late homework is worth half credit

**Final Grades**: Each quarter is worth 20% and the End Of Course Exam is worth 20%.

***TMSA Plagiarism and Cheating Policy (From Student Handbook)***

Cheating and plagiarism are deceptive choices made by students to misrepresent the student’s true knowledge of the subject material (cheating) or misrepresenting information as their own ideas/concepts/words by not giving proper credit to the original source (plagiarism). All papers or projects submitted at TMSA are required to be in the student’s own words unless stated in writing by the teacher otherwise.  Therefore, any copying of information from the Internet or any other source (i.e. “cutting & pasting”, etc.) is considered plagiarism. However, quotations, drawings and/or pictures may be taken from the Internet or other source as long as they are properly cited in the document.

Please note that students may suffer additional consequences from their clubs/organizations for instances of cheating and plagiarism. Below are the classroom consequences for cheating/plagiarism:

* First offense: assignment is given automatic, permanent zero. The teacher will create a discipline write up for the student and contact the parents.
* Subsequent offenses:  assignment is given automatic, permanent zero. The teacher will create a discipline write up for the student and the Discipline Coordinator will determine further consequences.

**SIGNATURE PAGE FOR MATH III.**

**Please return this page signed. It counts as our first homework assignment.**

**This syllabus constitutes an academic contract between parent, teacher and student.**

**Agreement: I have read the Math I course overview. I agree to abide by the conditions outlined in this course description, come to class prepared to work and participate in class activities, exhibiting respect, cooperation and honesty with my teacher and fellow students. I will place this syllabus in the front of my notebook for future reference.**

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Print Student’s Name: Please be neat!

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Student’s Signature Date

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Parents’ Signature Date

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Parent email: Please be neat! Additional Parent email

**NOTE: If you would like your student included on class emails, absent work and general communication, please write their email address below.**

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Student email: Please be neat!

**Please email me with any comments or concerns.**

**Robin Lindauer**

**TMSA Math III Teacher**