Course Syllabus

1. Title - Algebra II– Honors

2. Text - *Algebra 2* (Larson, Boswell, Kanold, Stiff. Holt McDougal, 2011)

3. Prerequisite - C or better in Geometry H, or an A in Geometry Standard, or consent of department

4. Course Description

   The course covers topics of an advanced algebra class such as: functions, irrational numbers, quadratic equations and inequalities, quadratic relations and systems, exponential functions and logarithms, complex numbers, and a thorough study of trigonometry, binomial expansions and probability. This course will give a more in-depth study of the advanced algebra topics. Technology such as the TI-Nspire will be used to enhance student learning.

5. Course Content
   a Semester I
      i.   Chapter 1 – Equations and Inequalities
      ii.   Chapter 2 – Linear Equations and Functions
      iii. Chapter 3 – Linear Systems and Matrices
      iv.   Chapter 4 – Quadratic Functions and Factoring
      v.   Chapter 5 – Polynomials and Polynomial Functions
      vi.   Chapter 13 – Trigonometric Ratios and Functions
      vii. Chapter 14 – Trigonometric Graphs, Identities, and Equations

   b. Semester II
      i.   Chapter 6 – Rational and Polynomial Functions
      ii.   Chapter 7 - Exponential and Logarithmic Functions
      iii. Chapter 8 – Rational Functions
      iv.   Chapter 9 – Quadratic Relations and Functions
      v.   Chapter 10 – Counting Methods and Probability
      vi.   Chapter 11 – Data Analysis and Statistics

6. Course Format

   Course material in Algebra 2 Honors will be presented in a variety of instructional methods, including, but not limited to:
      i.   Teacher led lectures
      ii.   Small group discussion
      iii. Hands-on work with calculators, other technology, and manipulatives
      iv.   Analysis of mathematical tasks
      v.   Class projects
      vi.   Student Presentations
      vii. Group work
      viii. Discovery/Problem solving opportunities

7. Course Expectations
    a. Students are expected to be active participants in the learning process. This includes participating in class discussions, thinking about questions posed by the teacher and by classmates, construct viable mathematical arguments, and to help create an atmosphere that is conducive to learning.
    b. Students are expected to be responsible students. Responsible students are ready to learn throughout class by having required materials, being respectful of others and self, and being focused on mathematics. Students are also expected to complete assigned tasks (homework, class work, and other assignments), and seek extra help from the classroom teacher, as needed. Furthermore, responsible students will correct mistakes on homework and quizzes and will do their best to learn for understanding.
    c. Students are expected to show knowledge of all course objectives and apply that knowledge to real world situations. Furthermore, retention of material beyond the unit assessments in necessary. Students are expected to apply previously learned mathematics to new content to strengthen their mathematical understanding. Students will be expected to apply algebraic, numerical, and graphical reasoning to solve problems and explain their reasoning to others.
    d. Students will be asked to synthesize, analyze and evaluate mathematical concepts to create further mathematical ideas.
    e. The TI-Nspire is required.

8. Grades
    a. Quizzes/Special Assignments 30-40%
    b. Tests 50-60%
    c. Homework 10-15%
    d. As per department policy, extra credit shall not exceed 2% of the students' grade.

9. Mathematical Practice Standards: All Morton High School Students will:
    a. Make sense of problems and persevere in solving them
    b. Reason abstractly and quantitatively
    c. Construct viable arguments and critique the reasoning of others
    d. Model with mathematics
    e. Use appropriate tools strategically
    f. Attend to precision
    g. Look for and make use of structure
    h. Look for and express regularity in repeated reasoning