

## Course Syllabus

1. Title – Algebra I – Standard
2. Text – *Algebra 1* (Larson, Boswell, Kanold, Stiff. Holt McDougal, 2011)
3. Prerequisites - None
4. Course Description

Algebra is one of the fundamental branches of mathematics. A good background in algebra is needed for all other branches of mathematics and many other science-related courses such as chemistry, physics, electricity, and engineering. Algebra I is broken into four units: equations in one variable; equations in two variables; exponential and quadratic functions; and radicals and rational functions. Technology such as the TI-Nspire will be used to enhance student learning.
5. Course Content
  - a. Semester 1
    - i. Chapter 1 – Expressions, Equations, and Functions
    - ii. Chapter 2 – Properties of Real Numbers
    - iii. Chapter 3 – Solving Linear Equations
    - iv. Chapter 4 – Graphing Linear Equations and Functions
    - v. Chapter 5 – Writing Linear Equations
    - vi. Chapter 6 – Solving and Graphing Linear Inequalities
  - b. Semester 2
    - i. Chapter 7 – Systems of Equations and Inequalities
    - ii. Chapter 8 – Exponents and Exponential Functions
    - iii. Chapter 9 – Polynomials and Factoring
    - iv. Chapter 10 – Quadratic Equations and Functions
    - v. Chapter 11 – Radicals and Geometry Connections
    - vi. Chapter 12 – Rational Equations and Functions
6. Course Format

Course material in Algebra 1 S 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 is 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. The TI-Nspire is required.

## 8. Grades

- a. Homework 10-20%
- b. Quizzes 30-40%
- c. Tests 40-60%
- 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