

Saint Mary's College High School

Joan McManus

Algebra 1-2

(510) 559-6239

jmcmanus@stmchs.org

Course Description:

This standard first course in Algebra covers the required concepts of equation solving, applications of rational and irrational numbers and expressions, inequalities, polynomials, factoring, functions, word problems, and graphing. Emphasis will be placed on critical thinking, problem solving, and application principles.

This course is a prerequisite for *Geometry*, and for the next Algebra level. To be eligible for Algebra 3-4HP, you will need an A- or better in this course, and a B or better in *Geometry*.

Syllabus:

The course will follow the chapter outline of the text, as listed.

First Semester:

- Order of Operations
- Real numbers
- Solving Linear Equations
- Graphing and analyzing Linear Equations
- Solving Linear Inequalities

Second Semester:

- Solving systems of linear equations
- Applications of Polynomials
- Factoring
- Quadratic and Exponential Functions
- Radical Expressions and Triangles
- Rational Expressions and Equations

Big Ideas:

- What is a variable?
- How is a variable used in a sentence and in an expression?
- What are the identity, equality, distributive, and the commutative and associative properties used for?
- What is the real number system?
- What are the primary subsets of real numbers?
- What if there were no *Order of Operations*?
- What is a solution to an algebraic sentence?
- What is a function, and why is it important?
- What is a linear equation?
- How does slope represent the rate of change?
- How does a graph represent the true set of an equation, or an inequality?
- What is a solution of a system of equations?
- How do polynomials and exponential functions model real world situations?
- What is the essential structure and behavior of polynomials?
- How do radical expressions relate to exponents?

Core Tasks:

Students should be able to...

- Identify and translate variables and expressions.
- Simplify and evaluate expressions using the *Order of Operations*, and the distributive property.
- Understand and identify the commutative and associative properties.
- Add, subtract, multiply, and divide real numbers.
- Determine whether a relation is a function, and understand the differences.
- Find the slope of a line, and be able to graph it manually, and on a calculator.

- Be able to write linear equations in several different formats.
- Determine whether a system of equations has one, none, or infinitely many solutions.
- Add, subtract, multiply, and divide polynomials.
- Be able to factor polynomials, and utilize factoring to solve a variety of equations.
- Solve quadratic equations by graphing, completing the square, and by using the quadratic formula.
- Simplify radical expressions.
- Add, subtract, and multiply radical expressions.

Required Materials:

All students are required to bring to class every day the following materials:

1. Text: **Algebra 1** (Glencoe, McGraw Hill: Publishers)
2. Spiral notebooks for notes and homework
3. A binder to hold all returned papers
4. Pencils
5. Paper
6. Graphing Calculator (Ex: TI-83 or higher)

None of the above is an option!!! Failure to come prepared to class will result in participation points being lowered, and possible dismissal from the class.

You may not go to your locker to acquire the needed materials for class.

If you lose your text or your calculator, you must purchase another immediately. All of the above materials are needed everyday, so if you fail to have them, you will not be able to participate in class. Participation is vital to your success in this class.

**The above materials must be present in class beginning
Thursday, August 21st**

Evaluation of Work:

The semester grade will consist of the following categories:

Chapter Exams	40%
Quizzes	20%
Homework	30%
Final	10%

Chapter Exams:

Exams are given at the end of every chapter. Each exam is worth 100 points. If you miss an exam due to an absence, a make-up exam will be scheduled with you upon your return to school. Please be prepared to take the exam within one to two days upon your return.

Quizzes:

There will be quizzes given about once a week. If you are absent from school on a day of a quiz, please be prepared to make-up the quiz on the day you return to school.

Homework:

Homework will be given on a daily basis, including weekends!!! I do not accept any late homework except when a student has an excused absence. Each homework is worth 10 points. You must show work to receive full credit.

Grading Scale

100%	A+
99-94%	A
93-90%	A-
89-87%	B+
86-84%	B
83-80%	B-
79-77%	C+
76-74%	C
73-70%	C-
69-67%	D+
66-64%	D
63-60%	D-
59-0%	F