Algebra I (Mathematics)

Required – Year – 9/10/11
Prerequisites: None

Course Philosophy and Description

The philosophy of Algebra I revolves around the ability of math to describe quantitatively the wonders of God's creation. This course in Algebra covers equation solving plus a presentation of problems where the methods learned can be used. An introduction to graphing of linear equations and some higher level functions will occur toward the end of the second semester.

Course Goals

The student will:
1. review concepts taught in previous math courses.
2. acquire the techniques used in solving equations.
3. be introduced to real life situations where equations solving skills will be needed.
4. use simple techniques for solving systems of equations.
5. interpret verbal problems as systems and solve them.
6. be introduced to graphing on a coordinate plane and problems that can be solved doing this.
7. learn to use a scientific calculator.

Course Objectives

The student should be able to:
1. solve an equation or inequality.
2. translate a problem into an equation.
3. change from scientific notation to decimal notation and visa versa.
4. factor polynomial expressions in order to find their roots.
5. graph a linear equation or inequality.
6. use a calculator to find roots of number and values of trig functions.

Course Outline

Preparing for Algebra

Unit 1 – Foundations for Functions
1. Expressions, Equations, and Functions
2. Linear Equations

Unit 2 – Linear Functions and Relations
3. Linear Functions
4. Linear Functions and Relations
5. Linear Inequalities
6. Systems of Linear Equations and Inequalities

Unit 3 – Nonlinear Expressions, Equations, and Functions
7. Polynomials
8. Factoring and Quadratic Equations
9. Quadratic and Exponential Functions

Unit 4 – Advanced Functions and Equations
10. Radical Functions and Geometry
11. Rational Functions and Equations

Unit 5 – Data Analysis
12. Statistics and Probablility

Instructional Strategies

Teaching strategies include lecture, demonstration, group activities, and daily practice.

Grading Methods

The semester grade is broken into the following percentages:

Chapter Tests (50%)
Quizzes (15%)
Homework (10%)
Participations (10%)
Semester Exam (15%)

Student Materials

Algebra I Glencoe/McGraw –Hill, 2010, notebook, three-ring binder, scientific calculator, pen, pencil

Classroom Procedures

Assigned problems from the textbook are to be completed in the student's notebook. These problems will not be graded but notebooks will be checked periodically and given a grade for problems completed. Review worksheets will be graded. Quizzes will be given on most lessons. Any missed quizzes need to be completed before the start of the next school day to receive credit. Chapter tests are given every two or three weeks. Missed tests are to be made up the first day a student returns to class.

When students miss class because of a planned absence, all work is to be completed by the assigned due date.