

Name of Course: Algebra IB

Name of Instructor: Ancelet

Course Length: Year

Class Textbook/Materials: Algebra 1 Concepts and Skills, Vol 2 by McDougal Littell, 2001 ISBN: 0-618-10648-0

Calculator recommended: TI-34II

Description of Course:

This course is the second course of a two-year study that will cover the connections of earlier mathematics courses to algebra, properties of real numbers, solving of linear equations and functions, writing linear equations, solving and graphing linear inequalities, systems of linear equations and inequalities, exponents and exponential functions, quadratic equations and functions, polynomials and factoring, rational expressions and equations, radicals and connection to geometry.

Course Content and Learning Objectives:

Unit I. Systems of Linear Equations/Inequalities

Students will estimate the solutions of a system of linear equations by graphing. Students will demonstrate their ability to solve linear equations. Students will determine the number of solutions of a linear equation. Students will demonstrate their ability to graph and solve systems of linear inequalities.

Unit II. Exponents and Exponential Functions

Students will demonstrate their ability to use the multiplication property of exponents. Students will demonstrate their ability to use the properties of zero and negative properties of exponents. Students will graph exponential functions. Students will demonstrate their ability to use the division property of exponents. Students will demonstrate their ability to write scientific notation. Students will be able to recognize the difference between a normal exponential function and an exponential decay function.

Unit III. Quadratic Equations and Functions

Students will evaluate and approximate radicals. Students will simplify radicals. Students will solve quadratic equations. Students will graph quadratic functions and quadratic inequalities.

Unit IV. Polynomials and Factoring

Students will combine polynomials by using addition, subtraction, and multiplication. Students will demonstrate how to factor polynomials. Students will solve quadratic and cubic equations by factoring.

Unit V. Radical Expressions and Equations

Students will apply the cross-product rule to solve proportions. Students will recognize the difference between direct and indirect variation. Students will simplify rational expressions by using addition, subtraction, multiplication and division.

Unit VI. Radicals and Connections to Geometry

Students will evaluate and graph functions involving square roots. Students will simplify radical expressions by using addition and subtraction. Students will solve radical equations. Students will evaluate expressions involving radical exponents. Students will solve radical equations by completing the square or by using the quadratic formula. Students will apply the Pythagorean Theorem to find the missing side of a right triangle. Students will demonstrate how to use the distance formula and midpoint formula for points. Students will use logical reasoning and proof to prove statements true or false.

Assessments:

Students will be assessed using quizzes, end of unit tests, chapter homework and end of semester exam.

Grading Procedure: (according to weight)

Assignments: 40%

Quizzes: 20%

Tests: 40%

Homework:

Per semester, there will be at least 18 homework assessments. Each assignment will be graded based on completeness and amount of work shown.

There are no fees for this course.