

QUEENS ACADEMY HIGH SCHOOL

DEPARTMENT OF MATHEMATICS

Integrated Algebra IC Course Curriculum

Teacher: _____

This is the final section of a three-course series cumulating in the state-mandated Regents exam necessary to earn a high school diploma. It will provide students with concepts in coordinate geometry and advance algebra. They will learn to apply mathematical principles as a tool for problem solving as well as gain a more profound knowledge of algebraic equations and geometric connections.

Armed with the right concepts, students will use mathematical reasoning in order to analyze mathematical circumstances. They will use scientific methods to gather data and draw conclusions as well as be able to explain the thought process that has led to their results. They will practice using technology as a tool to further their understanding of mathematical concepts such as scientific calculators and computers. Class discussions and cooperative efforts will be used to involve the students in the process of learning as well as help foster group unity.

Textbook: Integrated Algebra published by Prentice Hall Mathematics, New York. Teacher will also supplement the course with materials from other available sources.

Topics to be covered:

Unit 9- Polynomials and Factoring (17 Days)

- Adding and Subtracting Polynomials
- Multiplying and Factoring
- Multiplying Binomials
- Multiplying Special Cases
- Factoring Trinomials of the type $X^2 + bX + C$
- Factoring Trinomials of the type $aX^2 + bX + C$
- Factoring Special Cases
- Factoring by Grouping

Unit 10- Quadratic Equations and Functions (15 Days)

- Exploring Quadratic Graphs
- Quadratic Functions
- Solving Quadratic Equations

- Factoring to Solve Quadratic Equations
- Completing the Square
- Using the Quadratic Formula
- Using the Discriminant

Unit 11- Radical Expressions and Equations (12 Days)

- Simplifying Radicals
- Operations with Radical Expressions
- Solving Radical Equations
- Graphing square Root Functions
- Trigonometric Ratios
- Angles of Elevation and Depression

Unit 12- Rational Expressions and Functions (16 Days)

- Graphing Rational Functions
- Simplifying Rational Expressions
- Multiplying and Dividing Rational Expressions
- Dividing Polynomials
- Adding and Subtracting Rational Expressions
- Solving Rational Expressions
- Counting Methods and Permutations
- Combinations

Unit 13- Readiness Practices (12 Days)

- Analyzing Data and Identifying Bias
- Quartiles and Box-and-Whiskers Plot
- Working with Sets
- Union and Intersection of Sets
- Related Data Sets
- Systems of Linear and Quadratic Equations

Assessment:

Assessment for this course will rely on different criteria as detailed below. Attendance and participation in class proceedings is of the utmost importance. This allows the students to take an active part in their learning process thus encouraging them to take ownership of their learning. This also provides students with immediate clarification on the topic being discussed. All homework must be done in a timely fashion and turned in. Midterm and final exam will enable the teacher to assess each student's grasp of the materials covered in class. Projects will be chosen that help reinforce the mathematical concepts as well as give students the opportunity to connect the different aspects of math with their surroundings.

- Classwork and Participation 15%
- Homework 15%
- Quizzes and Projects 20%
- Midterm 25%
- Final 25%