

**GSE Algebra II/Advanced Algebra Syllabus - Fall 2016**

**I. Teacher Information**

Teacher Name: Thomas Gordon/Meshanna Marcus Room: 1285

Tutorial Days: Wednesday 3:45 to 4:45 Course Website:

Teacher E-mail: Thomas.Gordon@atlanta.k12.ga.us School Website: <http://www.atlanta.k12.ga.us/Domain/3508>

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**II. Course Description and Objectives**

**Algebra II/Advanced Algebra** is the culminating course in a sequence of three high school courses designed to ensure career and college readiness. It is designed to prepare students for fourth course options relevant to their career pursuits.

The standards in the three-course high school sequence specify the mathematics that all students should study in order to be college and career ready. Additional mathematics content is provided in fourth credit courses and advanced courses including pre-calculus, calculus, advanced statistics, discrete mathematics, and mathematics of finance courses. High school course content standards are listed by conceptual categories including Number and Quantity, Algebra, Functions, Geometry, and Statistics and Probability. Conceptual categories portray a coherent view of high school mathematics content; a student’s work with functions, for example, crosses a number of traditional course boundaries, potentially up through and including calculus. Standards for Mathematical Practice provide the foundation for instruction and assessment.

**III. Materials and Supplies**

**Campus Portal for Parents and Guardians:** Visit <https://ic.apsk12.org/portal> to view class schedules, attendance records and grades. To activate your account, visit the school to receive your login (activation key).

**A class set of books and workbooks will be used.** Your child will also be given log-in credentials for a virtual text and resources.



**Required Materials:**

* Bounded Composition Book
* 2” 3-ring binder
* Dividers/tabs
* Loose leaf paper
* Pencils
* Colored pencils
* Graphing Calculator

**IV. Course Outline/Curriculum Overview**

 The following academic concepts will be covered. THIS IS ONLY A GUIDE AND IS SUBJECT TO CHANGE.

**Unit 1**: Students will revisit solving quadratic equations in this unit. Students explore relationships between number systems: whole numbers, integers, rational numbers, real numbers, and complex numbers. Students will perform operations with complex numbers and solve quadratic equations with complex solutions. Students will also extend the laws of exponents to rational exponents and use those properties to evaluate and simplify expressions containing rational exponents.

**Unit 2**: This unit develops the structural similarities between the system of polynomials and the system of integers. Students draw on analogies between polynomial arithmetic and base-ten computation, focusing on properties of operations, particularly the distributive property. Students connect multiplication of polynomials with multiplication of multi-digit integers, and division of polynomials with long division of integers. Students will find inverse functions and verify by composition that one function is the inverse of another function.

**Unit 3**: In this unit, students continue their study of polynomials by identifying zeros and making connections between zeros of a polynomial and solutions of a polynomial equation. Students will see how the Fundamental Theorem of Algebra can be used to determine the number of solutions of a polynomial equation and will find all the roots of those equations. Students will graph polynomial functions and interpret the key characteristics of the function.

**Unit 4**: Rational numbers extend the arithmetic of integers by allowing division by all numbers except 0. Similarly, rational expressions extend the arithmetic of polynomials by allowing division by all polynomials except the zero polynomial. A central theme of this unit is that the arithmetic of rational expressions is governed by the same rules as the arithmetic of rational numbers. Similarly, radical expressions follow the rules governed by irrational numbers.

**Unit 5**: Students extend their work with exponential functions to include solving exponential equations with logarithms. They analyze the relationship between these two functions.

**Unit 6**: In this unit students synthesize and generalize what they have learned about a variety of function families. They explore the effects of transformations on graphs of diverse functions, including functions arising in an application, in order to abstract the general principle that transformations on a graph always have the same effect regardless of the type of the underlying functions. They identify appropriate types of functions to model a situation, they adjust parameters to improve the model, and they compare models by analyzing appropriateness of fit and making judgments about the domain over which a model is a good fit. They determine whether it is best to model with multiple functions creating a piecewise function. Students will also explore the sum of finite geometric series.

**Unit 7**: In this unit, students see how the visual displays and summary statistics they learned in earlier grades relate to different types of data and to probability distributions. They identify different ways of collecting data— including sample surveys, experiments, and simulations—and the role that randomness and careful design play in the conclusions that can be drawn.

**V. Primary Text(s)**

**VI. Grading Policy:**

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| --- | --- | --- |
| Formative Pre-Assessment | 0% | Pre-Test/Diagnostic Test/Pre-SLO |
| Assessment During Learning | **25%** | Performance-based Assessments/Quizzes |
| Group/Independent Practice (In Class) | **40%** | Classwork/Projects/Labs/Group work |
| Homework | **5%** | Homework |
| Summative Assessment | **30%** | Culminating Projects/Unit Tests/Final Exam/Post-SLO |

**Grading scale** A: 90-100 B: 80-89 C: 70-79 F: 0-69

***Grading Systems-Grading Expectations [See Board Policy IHA-R (1)]***

*2.1.    Students shall receive report cards after the end of the 9th, 18th, 27th and 36th weeks of the school year. The report cards received after the semester midpoints (9th and 27th weeks) will be considered progress reports for all students.*

*2.3.    For grades 6-12, evaluation of student mastery shall be cumulative for the semester.*

*2.4.    All students shall receive interim progress reports at least four (4) times per year—4.5 weeks into the school year and midway between report card issuance dates.*

**VII. Assessment Calendar**

Unit/Benchmark Assessments: TBA

Final Exam: (December/May)

GA Milestone/SLOs: May 2017

**VIII. Classroom Expectations:**

Come to class prepared to focus only with the before mentioned material. Be on time and be prepared to learn. At all times everyone in this classroom will conduct himself or herself in a professional manner. ANY deviation from acceptable behavior shall require immediate attention up to and including referral to an administrator. Any student receiving a grade of 70% or below on any graded work is expected to see me for assistance. Come prepared to discuss how to improve your performance.

**Class Rules:**

1. Arrive to class on time. Be seated and prepared to work when the bell RINGS

2. Respect teacher and classmates.

3. Follow all school rules such as no eating, no cell phones, no electronic devices, etc.

4. Listen for and adhere to all directions the first time they are given.

5. Make sure the space around your desk is clean/dispose of all trash in the proper receptacle

6. Do not ask to leave the classroom for any reason other than a true emergency.

### Consequences of Misbehavior:

1st offense: Teacher conference/move seat

2nd offense: Parent conference/phone, email, or in person

3rd offense: Administrative action

*Some offenses may require immediate administrative attention.*

## Notebooks/Note-taking: You are required maintain a neat and organized notebook, in which you should bring to class EVERYDAY.

 **Quizzes/Labs**: Quizzes will be announced to the class at least 2 days prior to being given.

## Make-up Policy

MAKING UP MISSED ASSIGNMENTS OR TESTS: It is the ***student’s and parent’s responsibility to make arrangements for make-up work.*** Students should ask their teacher for any missed assignments on the first day they return to school.

## Deficiency Notices and Progress Reports

The student will periodically receive from the teacher GRADE PROGRESS reports and DEFICIENCY NOTICES. You should review with your parent(s) or guardian(s) **AND** they must sign and return both the GRADE PROGRESS REPORT and DEFICIENCY NOTICE on or before the assigned due date.

**Expectations for Technology:**

There may be times when the teacher will ask you to utilize your own technology during a class. This technology can include a smart phone, laptop, or tablet. When personal technology is not required by the teacher, the electronic device should be OFF and AWAY.

**Academic Integrity**

The Atlanta Board of Education recognizes that academic integrity is the foundation of academic excellence and student success. It is the responsibility of every student and employee to exhibit honesty, trust, fairness, respect, and responsibility in academic work at all times to support a positive learning environment in the school. Violations of [board policy JFA Academic Integrity](http://www.boarddocs.com/ga/aps/Board.nsf/goto?open&id=9CKTW868A3B2) shall be handled as violations of the student code of conduct and addressed via the progressive discipline guidelines in the Student Handbook.

**Parent Expectations**

Parental communication and involvement is essential to the success of all students. We fully welcome your involvement. Parents are encouraged to contact the teacher for updates and concerns. If a parent requests a conference, one will be scheduled as soon as possible.