

Algebra 2 (College Prep B) Course Outline

Number: 323
Level: College Prep B
Textbook: Algebra 2 with Trigonometry, Prentice Hall, 2006
Workbook: Preparing for the New Jersey HSPA, Glatzer and Glatzer, AMSCO, 2001
Credits: 5
Written: July, 2005
Revised August 2008

Prerequisite:

Students must have successfully completed Algebra 1 (CP B). Students who received lower than a C in Algebra 1 (CP A) should also schedule this course.

Course Description:

This course is the third year of mathematics at the College Prep B level. It meets college entrance requirements and prepares students for a liberal arts college mathematics course. It is designed for students who have demonstrated some difficulty mastering mathematical concepts. This course meets New Jersey's Core Curriculum Content Standards.

During this course, topics from Algebra 1 such as solving equations in one or two variables, graphing and operations with polynomials and factoring will be reviewed and extended. Other topics studied are relations and functions, rational equations, negative and rational exponents, radicals, complex numbers, the Quadratic Formula and logarithms. Time will also be allocated to review for the High School Proficiency Assessment in March.

District Policy: ACADEMIC INTEGRITY

Pupils are expected to be honest in all of their academic work. This means that the students in this course will not engage in any of the following acts:

- Cheating on examinations or other school assignments, including but not limited to, the non-authorized use of books or notes, the use of crib sheets, copying from other students' papers, exchanging information with other students orally, in writing, or by signals, obtaining copies of the examination illegally and other similar activities. Cheating through the use of technology to exchange information on any school assignment, examination, etc. is prohibited. Technology is defined as, but not limited to, computers, telephones, text messaging, palm pilots, calculators, cameras or any other hand held device.
- Plagiarism is not permitted in term papers, themes, essays, reports, images, take-home examinations, and other academic work. Plagiarism is defined as stealing or use without acknowledgment of the ideas, words, formulas, textual materials, on-line services,

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computer programs, etc. of another person, or in any way presenting the work of another person as one's own.

- Falsifications, including forging signatures, altering answers after they have been graded, inserting answers after the fact, erasing of grader's markings, and other acts that allow for falsely taking credit.

A pupil found guilty of academic dishonesty may be subjected to a full range of penalties including, but not limited to reprimand and loss of credit for all of the work that is plagiarized. Disciplinary action may also be a consequence of such behavior. Additional consequences may apply as defined in specific department policies and guidelines.

A teacher who believes that a pupil has been academically dishonest in his/her class should resolve the matter in the following manner:

- Reprimand the student orally and/or in writing. The teacher is also authorized to withhold credit in the work due to academic dishonesty.
- If warranted, the teacher shall file a written complaint against the student with the Administration, requesting a more stringent form of discipline. The complaint must describe in detail the academic dishonesty that is alleged to have taken place, and must request that the matter be reviewed by the Administration.
- The Administration will determine if further discipline of the pupil is appropriate, and will determine the nature of the discipline on a case-by-case basis.
- If the pupil is not in agreement with the disciplinary action of the Administration, he/she may appeal the action first to the Principal and secondly to the Superintendent. If the pupil is dissatisfied with the Superintendent's disposition of the case, he/she may grieve the action in accordance with Policy No. 5710, Pupil Grievance.

District Policy: Equal Opportunity

High Point Regional High School's curriculum and instruction are aligned to the State's Core Curriculum Content Standards and address the elimination of discrimination by narrowing the achievement gap, by providing equity in educational programs and by providing opportunities for students to interact positively with others regardless of race, creed, color, national origin, ancestry, age, marital status, affectional or sexual orientation, gender, religion, disability or socio-economic status.

New Jersey Core Curriculum Content Standards Addressed:

Standard 4.3 Patterns and Algebra

All students will represent and analyze relationships among variable quantities and solve problems involving patterns, functions and algebraic concepts and processes.

Standard 4.5 Mathematical Processes

All students will use the mathematical processes of problem solving, communication, connections, reasoning representations and technology to solve problems and communicate mathematical ideas.

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Course Objectives:

Students will be able to:

1. evaluate and simplify algebraic expressions.
2. select and use appropriate methods to solve equations and inequalities.
3. identify relations and functions and their graphs and transformations and explain their properties.
4. use various representations for functions, including equations or inequalities, tables, charts and graphs and convert among them.
5. use all concepts to model problems.

Course Policies:

Homework will usually be assigned daily and is an important part of the course, providing students with the opportunity to apply skills learned in class, strengthen conceptual understanding and identify areas of weakness. It is **imperative** that students do homework regularly and conscientiously. Assignments will be reviewed in class and it is the student's responsibility to ask questions about problems he/she may not understand, to identify specific mistakes and to take notes on any further explanations concerning these problems. Students are responsible to make up any missed class work (quizzes, tests, homework) in a timely manner and according to teacher established policies, which will be discussed in class. It is the student's responsibility to obtain material (notes, homework) for any extended absence and meet with the teacher upon return to class. The teacher will be available to meet with students for extra help and to help students make up work from absences.

This class will use graphing calculators (TI-83 or 83+). Students who do not have a calculator will be issued one by the school. The student will sign that he/she has received the calculator and is expected to return the calculator in the condition they received it or pay the full purchase price of the calculator. Students may not substitute a calculator for a lost or damaged calculator. Students are expected to bring their textbook, homework, calculator and a pen/pencil to class. They are expected to take notes during class and to keep these notes, along with homework, quizzes and tests, in an organized manner. A three ring binder is strongly recommended.

Student Evaluation:

Quizzes, based on the course proficiencies, will be given about once a week, with a major test, based on the proficiencies, given at the end of each unit. An exam covering the semester's work will be given at the end of each semester.

Homework will be checked daily. All work must be shown neatly. Homework will usually not be graded, but will be considered satisfactory if the work shown indicates the student has made a conscientious effort to complete the assignment. If a student is not able to complete an assignment because he/she does not understand the work, he/she may be asked to complete it after the assignment is reviewed in class and/or the student has come for extra help in order to receive credit for the assignment. Sometimes an assignment given for homework may be collected and graded as a quiz. This will only

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occur when the concepts have been thoroughly reviewed. Class work/group work may also be graded. Each teacher will explain his/her homework policy to the class. Grades will be calculated according to the school grading policy and the following guidelines:

- A. Marking Period Grade:
 - 1. Tests and Quizzes 70 – 80 %
 - 2. Homework and class work 20 – 30 %
(Each teacher will explain his/her policy to the class.)

- B. Final Grade
 - 1. Each Marking Period 20 %
 - 2. Midterm Exam 10 %
 - 3. Final Exam 10 %

Student Proficiencies:

Students will be able to:

1. identify rational and irrational numbers and perform operations with real numbers.
2. evaluate and simplify algebraic expressions.
3. solve linear and quadratic equations with and without a calculator.
4. solve linear inequalities.
5. solve absolute value equations.
6. evaluate expressions with integral and rational exponents with and without a calculator.
7. use the laws of exponents and apply them to scientific notation.
8. graph relations and functions and their transformations.
9. write equations of line.
10. graph exponential and logarithmic functions
11. solve logarithmic equations
12. evaluate, simplify and perform operations with polynomials.
13. factor polynomials.
14. simplify and perform operations on rational, radical and complex expressions.
15. demonstrate an understanding of the four clusters on the HSPA: 1. Number Sense and Numerical Operations 2. Geometry and Measurement 3. Patterns and Algebra 4. Data Analysis, Probability, Statistics and Discrete Mathematics.
16. apply all concepts to real world problems.