

Algebra 2 Honors Course Outline

Course Number:	311
Level	: Honors
Length	: Full year
Textbook	: <u>Algebra 2, Applications, Equations and Graphs,</u> <u>McDougal Littell, 2001</u>
Credit	: 5.0 credits
Revised	: August 2008

Prerequisite

Students enrolling in this course must have completed Geometry Honors with at least a “C” average. Students from Algebra 1 Academic may enroll in this course if they have an “A” average in Algebra 1 Academic, teacher recommendation and take Geometry (Academic or Honors) concurrently.

Course Description

This course is designed for students who have demonstrated exceptional ability and motivation in mathematics and will meet the needs of students who anticipate entering college majors requiring an extensive mathematical background.

The content of this course reflects the NCTM Standards. The concept of a function is used as a unifying theme throughout the course. Graphing and the relationship between graphs and equations will be emphasized. Algebra is connected to other areas of mathematics such as geometry, data analysis, probability and discrete mathematics. Problem solving and application to real world problems are integrated throughout the course.

Teaching strategies used in this course follow the recommendations of the National Council of Teachers of Mathematics. Students are expected to be active participants in the learning process. The teacher will involve them in the introduction and development of material through exploratory activities, questioning and class discussions. Understanding of concepts is stressed rather than rote memorization of skills. When appropriate, students are guided in discovering the concepts themselves through a study of patterns and relating their work to prior knowledge. The graphing calculator is essential to this course as students use it both to discover concepts and strengthen their understanding of concepts.

Course Policies

Homework will be given almost every day and is an important part of the course, providing students the opportunity to apply skills learned in class, strengthen their understanding of the concepts, and identify areas they don't understand. It is imperative that students do homework regularly and conscientiously. Homework will be reviewed in class and it is the student's responsibility during that time to ask questions about problems he/she doesn't understand, to identify specific mistakes, and to take notes on any further explanation concerning these problems. Some of the homework will be based on the sample problems done in class and students are expected to study these examples and use them as a guide when doing their homework. Other problems will require students to extend the concepts learned in class to new situations. Students will also be given reading assignments either to preview material that will be taught the next day or to learn new concepts and procedures independently.

Students will be responsible to make up any missed class work (test, quiz, homework) in a timely manner, according to teacher established policies. Policies 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.

Student Evaluation

One to three quizzes, based on the course proficiencies, will be given during a unit and a unit test will be given at the end of each unit. Group or individual projects or explorations may also be used as quiz grades. An exam will be given at the end of each semester, covering all the work of that semester. Notebooks will be collected and graded. The teacher will explain what is expected in notebooks and when they will be collected.

Take home tests and quizzes may also be assigned.

Homework will be checked daily. It 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. Sometimes an assignment given for homework may be collected and graded as a quiz. Students will be informed ahead of time about these assignments.

Grades will be calculated according to the school grading policy and the following guidelines.

A. Marking Period Grade

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|----|--|-----------------|
| 1. | Tests and Quizzes | 90 - 95% |
| 2. | Homework
(Each teacher will explain his/her policy to the class) | 05 - 10% |
| 3. | Class Participation | 00 - 05% |
| 4. | Notebooks are required, and will be graded as a quiz or test. | |

B. Final Grade

1.	Each Marking Period Grade	20%
2.	Mid-term Exam	10%
3.	Final Exam	10%

Student Proficiencies

Students will be able to:

1. use technology to explore and solve problems.
2. formulate, simplify and evaluate numerical and variable expressions including polynomial, rational, radical and exponential expressions.
3. use tables, graphs, functions, matrices and simulations to model real world problems.
4. write, graph and solve linear equations and inequalities in one variable.
5. use function notation and perform operations on functions.
6. use concepts of domain and range.
7. solve quadratic equations by factoring, completing the square and the Quadratic Formula.
8. use properties of exponential and logarithmic functions and solve exponential and logarithmic equations.
9. solve radical equations.
10. perform operations on complex numbers.
11. graph and use the graphs of polynomial equations, exponential and logarithmic equations, radical equations and rational equations to solve problems.
12. solve systems of equations by graphing, substitution, linear combinations and matrices.

13. use properties and theorems of polynomial equations to find complex zeros, maximum and minimum points.
14. use coordinate geometry to solve problems.
15. write and graph the equations of conic sections.
16. collect, organize, classify, analyze, interpret and present data.
17. use correlation coefficients and best fit lines to analyze data.
18. apply all concepts to real world problems.
19. use trigonometric relationships to evaluate trigonometric functions of any angle.
20. use trigonometric functions to solve real-life problems.
21. measure angles in standard position using degree and radian measure.
22. calculate arc lengths and areas of sectors in degrees and radians.
23. evaluate inverse trigonometric functions.

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, 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.

Equity Statement:

High Point Regional High School's curriculum and instruction are aligned with New Jersey 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.

