



Hampden Academy

Hampden Academy challenges all students to achieve individual excellence.

Honors Algebra 2 A Day Period 1 Course Syllabus

“Mathematics is not a spectator sport.” ~ Anonymous

Classroom Expectations:

1. Be respectful
2. Be honest and ethical
3. Be responsible
4. Be on time and be prepared
5. Have fun!

In addition you can expect the following of me in this class:

1. I will arrive on time and will be fully prepared
2. Be honest and ethical
3. Be responsible
4. Be on time and be prepared
5. Have fun!

Course Information

Course Title: Honors Algebra 2
Course Number: 450
Course Date: 2018 - 2019
Course Location: Room 117

Instructor: Sara Ballard

Office Hours: I am typically available between 7:30 am and 8 am and afternoons between 2:05 pm and 3:30 pm or by appointment. Additionally, I am free the following periods during school: A Days Period 3 and B Days Period 1.

Phone: (207) 862 - 3791

E-mail: sballard@rsu22.us

Course Description: This is the most challenging algebra II course offered at HA and is designed for the accelerated math student who is self-motivated and has very strong algebraic skills and study habits. The real number system is expanded to the complex number system. Comprehension of the function concept in mathematics is stressed. The importance of deductive reasoning and precision of terminology in mathematics are important concepts of the course. Topics will include polynomial functions, trigonometric functions, exponential and logarithmic functions, rational functions. The stage will be set for dealing with the challenging problem situations encountered in Honors PreCalculus and AP Calculus. Critical thinking skills will be further developed.

Prerequisite: Algebra 1 and CP Geometry or Honors Geometry

Graduation Standards: Simplifying Expressions (ED.MA.A.EEI.04)
Solving Multi-Step Equations and Inequalities (ED.MA.A.EEI.05)
Analyzing Linear Equations (ED.MA.A.IF.07)
Solving Systems of Equations (ED.MA.A.EEI.07)
Operations on Polynomials (ED.MA.A.EEI.09)
Rational Exponents (ED.MA.NQ.NS.08)
Imaginary Numbers (ED.MA.NQ.NS.09)
Graphing Quadratic Functions (ED.MA.A.IF.06)
Solving Quadratic Equations (ED.MA.A.EEI.11)
Operations on Functions (ED.MA.A.BF.04)

Learning Outcomes:

1. Be able to use expressions and formulas
2. Be able to understand properties of real numbers
3. Be able to solve equations, absolute value equations, inequalities, compound and absolute value inequalities.
4. Be able to find slope of a line
5. Be able to write and graph linear equations
6. Be able to identify and graph special functions
7. Be able to solve systems of equations graphically & algebraically
8. Be able to simplify monomials
9. Be able to add & subtract polynomials
10. Be able to divide polynomials
11. Be able to factor polynomials
12. Be able to simplify radical expressions and complex numbers
13. Be able to solve radical equations
14. Be able to graph quadratic functions
15. Be able to solve quadratic equations and inequalities by graphing, factoring, completing the square, and by using the quadratic equation.
16. Be able to analyze graphs of quadratic functions
17. Be able to graph polynomial functions
18. Be able to solve equations using quadratic techniques
19. Be able to use the remainder and factor theorems
20. Be able to find roots and zeros of polynomial functions
21. Be able to use the rational zero theorem
22. Be able to perform operations on functions
23. Be able to identify and find inverse functions
24. Be able to graph square root functions and inequalities.
25. Be able to multiply, divide, add & subtract rational expressions
26. Be able to graph rational functions
27. Be able to solve rational equations and simplify rational expressions
28. Be able to graph exponential functions
29. Be able to use properties of logarithms to simplify expressions and solve equations
30. Be able to solve exponential growth and decay problems.
31. Be able to solve problems using right triangle trigonometry, law of sines and law of cosines
32. Be able to change degrees measures to radian measures
33. Be able to find values of trigonometric functions
34. Be able to use the trigonometric functions based on the unit circle

Instructional Methods:

This course is taught using a variety of instructional methods including, but not limited to, direct instruction, class discussions, worked examples, individual work, and collaborative learning.

Supporting Materials:

Textbook Title: Algebra 2

Publisher: Glencoe

Materials: Ti-84 Graphing Calculator is required
3 Ring Binder
Pencil and Pen

Google Classroom Code: o4pinb

Topics:

Chapter 1: Solving Equations and Inequalities

Chapter 2: Linear Relations and Functions

Chapter 3: Systems of Equations and Inequalities

Chapter 5: Polynomials

Chapter 6: Quadratic Functions and Inequalities

Chapter 7: Polynomial Functions

Chapter 9: Rational Expressions and Equations

Chapter 10: Exponential and Logarithmic Relations

Chapter 13: Trigonometric Functions

Chapter 14: Trigonometric Graphs and Identities

Assessment:

Formative assessment tools: Quizzes and Math Practice

Summative assessment tools: Tests and Survey Bundles

Grading Policy: Your grade in this class will be calculated as follows:

50% Tests: This category will include tests. You will have a test at the end of every chapter.

30% Quizzes: Weekly quizzes will be given during the last class meeting of each week. Quizzes will be closed notes and may be announced or unannounced. You will also have a

notebook check at least once every quarter, which will count as a quiz grade.

Quiz Corrections:

You will have an opportunity to complete quiz corrections on all of your quizzes and can earn back half of your points on your quizzes for making these corrections. In order to earn back half of your points on your quizzes, you must have the correct answers for all of the problems on your quiz and the correct work to support your new answers. Quiz corrections must be turned in on or before the chapter test. If you are having trouble completing your quiz corrections, feel free to set up a time to see me for help.

10% Math Practice: Math practice will consist of both homework, in-class work, and survey bundles. Homework will be assigned on a **daily** basis. Homework assignments will cover the section or sections that were covered in the last day's class period. Homework will be graded on correctness. You will complete a Homework Check for each homework assignment you are given. On your homework check, you will write down your answers to **5 randomly selected questions** from the assignment. Each answer will count as 20 points.

Homework Corrections:

You will have an opportunity to complete homework corrections on all of your homework assignments and can earn back all of your points on your homework assignment for making these corrections. In order to earn back your points on your homework, you must fill out a homework paper where you will redo the problem(s) you got incorrect on your homework check. You must have the correct answer(s), correct work, and write a brief explanation of why you got the problem incorrect and what you can do differently to make sure you understand the concept(s) being assessed. Homework corrections are due on or before the day of the quiz which covers the material on that homework assignment. In the event that there is not a quiz over that particular lesson, the homework correction for that lesson will be due on or before the day of the test over that unit. If you are having trouble with your homework corrections, feel free to set up a time to see me for help.

Homework completion is mandatory. After a student has three missing homework assignments, they will be required to stay after school for a 30 minute homework detention to complete the assignments they are missing and will not receive full credit on the assignments.

Not knowing how to start a problem is not an excuse for not attempting the problem. If you are having trouble with your homework it is **your** responsibility to see me **before** the class when the assignment is due.


Survey Bundles:

Each unit there will be an assigned packet of questions that will require you to apply and extend the skills and content of the unit. The packet of problems will typically be due on the day before the test for the unit.

10% Participation: Participation is a must in this class. Participation includes in-class behavior, coming to class prepared and on time, and asking and answering questions.

Final Note: Each day you need to come to class prepared, willing to try your hardest, and with a positive attitude. In addition, I strongly encourage contacting me either at school or via e-mail in order to get help if you need it. Good luck this year and let's have some fun in math!

If you have any questions about the syllabus or about Honors Geometry, please feel free to contact me.

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