

**STAMFORD HIGH SCHOOL**

**COURSE DESCRIPTIONS AND CLASS EXPECTATIONS**

**2017-2018**

Please **read and sign** indicating that you have read and agree with the information,

procedures and policies in the course description and classroom expectations. Return the completed form to your son/daughter’s teacher as soon as possible.

I have read the course outline completely for the following course:

***Honors Algbera II*** and will maintain academic excellence by adhering to all expectations set forth by the classroom teacher and Stamford High School.

Student Name (Print): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Student Signature: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Teacher Name: \_\_\_Mr. Scianna\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

I have read the course description and classroom expectations for the following course:

***Honors Algebra II*** and understand the requirements and expectations of my son/daughter in this course. I will encourage my son/daughter to arrive to class on time, complete all assignments to the best of his/her ability, and support academic excellence.

Parent/Guardian Name (Print): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Parent/Guardian Signature: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Parent/Guardian Email: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Contact Number (Home/Cell): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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**Honors Algebra II**

Mr. Scianna Room 256

Texts: Larson, Boswell, Kanold, Stiff (2004, 2007)

 Algebra 2. McDougal Littell

Website: sciannamath.weebly.com

**General Information on Stamford High School (SHS)**:

 The Stamford High School faculty has created the following **21st Century** **Learning Expectations** and will work together to ensure that all students master these skills at a proficient level (or above) by the time they graduate in preparation for college and/or the workplace. Students will have the skills and knowledge necessary to:

Academic expectations:

1. Read and understand complex texts from all content areas, including visual texts, in order to extract information from them.
2. Write cohesively and cite evidence when synthesizing information from multiple texts.
3. Use critical thinking skills to analyze, interpret, and solve multi-step real-world problems.
4. Conduct research to build and present knowledge individually or in groups.

Social expectation:

1. Develop an understanding of a healthy intellectual, physical, social, and emotional lifestyle.

Civic expectation:

1. Develop an understanding of the meaning of citizenship.

**Course Information**:

 This course examines the properties of real numbers, linear equations and functions, inequalities, linear systems of equations, quadratic and polynomial functions, radical exponents and functions, and exponential and logarithmic functions. Emphasis is on algebraic, geometric, and graphic representation of these topics through critical thinking activities as well as the use of computers and graphic calculator technology. Students focus on problem solving and real life applications as well as skills required for the SAT examination throughout the year. Technology and online resources are embedded throughout the course.

**Classroom Expectations:**

Be punctual:

 Students will come to class on time and be in their seats ready to work when the class starts. This means that they will have books out, pen or pencil, calculator, and paper ready when the bell rings. Any homework assignments will be ready at the beginning of class as well.

Be respectful:

 Students are expected to be respectful of other people and their property. They will observe proper decorum in the classroom and the computer lab.

Be perseverant:

 Students are expected to persevere in learning the mathematics of every topic in this course and persist in working to find solutions to all problems used in the course.

**Homework:**

 When homework is assigned must be completed by the next class unless told otherwise. It must be neat (legible) and *all work must be shown to get credit*. If you are absent on the day that an assignment is given, you are still responsible for it. Email me or your partners to get the details of the assignment(s).

**Use of Technology in the Classroom:**

 The SHS Acceptable Use of Technology Policy will be followed in this course. Use of the camera and recording feature of any electronic device is not permitted in this classroom; so capturing, recording, or transmitting audio, video or still photos of students, faculty, or staff is prohibited.

Students will follow school policy on technology when any hardware is used in the classroom.

**Evaluation:**

 There will be a number of tests and quizzes in each marking period. The tests will always be announced in advance, quizzes may be announced or unannounced.

If you are absent on the day of a test (*excused* absence), you will take the test the day you return to school.

Your grade will be based upon: tests, quizzes, homework, special assignments, class participation, and other activities.

The grading practice for this class is as follows:

 Formal Assessments (Tests & Quizzes) 55%

 Homework 10%

 Alternative Assessments (Projects, Online

Practice, Participation, & Other Assignments) 35%

The final grade is determined as follows:

 Quarter 1 20%

 Quarter 2 20%

 Quarter 3 20%

 Quarter 4 20%

 Midterm 10%

 Final 10%

**Course Outline:**

 **Introduction to Algebra 2**

 • Pre assessment

 • Order of Operations

 • Properties of Exponents

 • Properties of Addition and Multiplication

 • Solving Multistep Equation

 **Unit 1: Functions and Inverses**

 • Compare relations and functions

 • Domain and range of functions

 • Library of Parent Functions & characteristics

 • Transformations of Parent Functions

 • Find inverse functions algebraically (linear and simple quadratic)

 • Construct an inverse graph

 **Unit 2:Quadratic Functions**

 • Distributive Property – multiplication and factoring

 • Operations on Imaginary & Complex Numbers

 • Solve quadratic equations: Take the square, Factoring, Quadratic Formula, Complete the Square

 • Graph quadratic functions

 • Use quadratic functions to solve real-life problems

 **Unit 3: Polynomial Functions**

 • Operations on polynomials

 • Graph polynomial functions

 • Solve polynomial equations

 • Write an equation of a graph

 • Connect the relationship among zeros, factors, roots, and intercepts

 • Fundamental Theorem of Algebra

 • Interpret and solve problems involving polynomial functions

 **Unit 4: Rational and Power Functions**

 • Convert between radical and rational exponent expressions

 • Solve radical and rational exponent equations

 • Use radical and rational equations in real world situations

 • Operations on rational expressions – add, subtract, multiply, divide.

 • Solve rational equations

 • Graph rational functions

 • Apply equations to model and solve word problems

 **Unit 5: Exponential and Logarithmic** **Functions**

 • Graph exponential functions and describe characteristics

 • Transformations on graphs of exponential functions

 • Use exponential functions in applications involving growth or decay.

 • Investigate the natural base, $e$, and its applications.

 • Solve exponential equations by rewriting in the same base, and using properties of exponents.

 • Make predictions using exponential mathematical models from given information

 • Convert between logarithmic and exponential form

 • Find the inverse function

 • Graph logarithmic functions including transformations, and describe the characteristics.

 • Apply properties of logarithms to simplify expressions.

 • Solve logarithmic equations.

 • Make predictions using logarithmic mathematical models from given information

 **Unit 6: Trigonometry**

 • Radian and Degree Measure

 • Unit Circle and the General Angle

• Graph

• Transformation

• Identities

**HAVE A GREAT SCHOOL YEAR!**