



## Course Syllabus

Franklin High School		2020-2021
<b>DIRECTIONS:</b> For each course, complete the syllabus and share with your evaluating/supervising administrator <b>as a pdf</b> ("File-download-PDF document") <b>by 9/28/20</b> . Syllabi will be posted on the FHS website under your name for the public to view.		
<b>Course Overview</b>		
<b>NOTE:</b> For core classes, all elements of this section (except for name and contact information) are the same.		
<b>Course Title:</b> Algebra 3-4		
<b>Instructor Name:</b> Deb Wasserman	<b>Contact Info:</b> dwasserm@pps.net	
<b>Grade Level(s):</b> 9-12		
<b>Credit Type:</b> (i.e. "science", "elective") math	# of credits per semester: 1.0	
<b>Prerequisites</b> (if applicable): Course builds on content learned in Algebra 1-2, but there are no formal prerequisites.		
<b>General Course Description:</b> This is a second-year Algebra course that uses problem-solving and teamwork strategies to solve problems. Topics include linear, exponential, circular, and quadratic functions, logarithms, polynomials, and trigonometry.		
<b>Prioritized National/State Standards:</b> See Appendix A		
<b>Course Details</b>		
<i>Learning Expectations</i>		
<b>Materials/Texts.</b> All student notes and assignments are distributed via Canvas Unit Modules. There is no textbook.		
<b>Course Content and Schedule:</b>  Unit 1: Solving Equations and Inequalities Unit 2: Graph Families and Transformations Unit 3: Inverse Functions (*) Unit 4: Logarithms and Exponentials Unit 5: Complex Numbers (*) Unit 6: Polynomials Unit 7: Rational Expressions (*) Unit 8: Trigonometry  Due to the distance learning model, and its associated compressed 4x4 schedule for 2020-21, the specific schedule for each unit is TBD. In addition, the (*) units may be deleted.		
<b>Differentiation/accessibility strategies and supports</b> (TAG, ELL, SpEd, other): Assignments regularly contain challenge problems that can be completed by TAG (or other) students. Students classified as SpEd may have assignments reduced, deadlines extended, and exams chunked or allocated additional time as specified by student IEP.		
<b>Safety issues and requirements (if applicable):</b> N/A		



**Classroom norms and expectations:**

- Students will log on before or when class starts with microphones and cameras off.
- Students are expected to be present during the entire class.
- Stretch breaks, walking around, eating and drinking is fine.
- Students will have textbooks (if appropriate), notebook, papers, calculator, and general supplies at each class.
- Students will ask math questions verbally (if possible), rather than typing in the chat.
- Students will take notes and complete classwork problems.
- Students will limit use of chat box to urgent private message to teacher, or brief general question for class (e.g., what page are we on)

*Evidence of Course Completion*

**Assessment of Progress and Achievement:** Daily score on homework assignments, summative unit test.

**Progress Reports/Report Cards (what a grade means):**

90-100%= A

80-89% = B

70-79% = C

60-69% = D

Less than 60% = F

**Career Related Learning Experience (CRLEs) and Essential Skills:** N/A

**Communication with Parent/Guardian**

What methods are used to communicate curriculum, successes, concerns, etc.? Grades are posted regular in Canvas for students and/or parents to review. Specific concerns regarding attendance or academic performance are communicated via email.

**Personal Statement and other needed info**

N/A

# Appendix A.

## Unit 1: Equations and Inequalities

### Priority Standards:

[HSA.CED.A.1](#) Create equations and inequalities in one variable and use them to solve problems. Include equations arising from linear and quadratic functions, and simple rational and exponential functions.

[HSA.CED.A.2](#) Create equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales.

## Unit 2: Parent Graphs

### Priority Standards:

[HSF.IF.B.4](#) For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship. *Key features include: intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative maximums and minimums; symmetries; end behavior; and periodicity.\**

[HSF.IF.C.7](#) Graph functions expressed symbolically and show key features of the graph, by hand in simple cases and using technology for more complicated cases.\*

[HSF.IF.C.7.B](#) Graph square root, cube root, and piecewise-defined functions, including step functions and absolute value functions.

[HSF.BF.B.3](#) Identify the effect on the graph of replacing  $f(x)$  by  $f(x) + k$ ,  $k f(x)$ ,  $f(kx)$ , and  $f(x + k)$  for specific values of  $k$  (both positive and negative); find the value of  $k$  given the graphs. Experiment with cases and illustrate an explanation of the effects on the graph using technology. Include recognizing even and odd functions from their graphs and algebraic expressions for them.

[HSF.IF.B.5](#) Relate the domain of a function to its graph and, where applicable, to the quantitative relationship it describes. *For example, if the function  $h(n)$  gives the number of person-hours it takes to assemble  $n$  engines in a factory, then the positive integers would be an appropriate domain for the function.\**

## Unit 4: Logarithms and Exponentials

### Priority Standards:

[HSF.LE.A.4](#) For exponential models, express as a logarithm the solution to  $ab^{ct} = d$  where  $a$ ,  $c$ , and  $d$  are numbers and the base  $b$  is 2, 10, or  $e$ ; evaluate the logarithm using technology.

[HSF.IF.C.7.E](#) Graph exponential and logarithmic functions, showing intercepts and end behavior, and trigonometric functions, showing period, midline, and amplitude.

## Unit 6: Polynomials

### Priority Standards:

[HSA.APR.A.1](#) Understand that polynomials form a system analogous to the integers, namely, they are closed under the operations of addition, subtraction, and multiplication; add, subtract, and multiply polynomials.

[HSA.APR.B.3](#) Identify zeros of polynomials when suitable factorizations are available, and use the zeros to construct a rough graph of the function defined by the polynomial.

[HSF.IF.C.7.C](#) Graph polynomial functions, identifying zeros when suitable factorizations are available, and showing end behavior.



## **Unit 8: Trigonometric Functions**

### **Priority Standards:**

**[HSF.TF.A.2](#)** Explain how the unit circle in the coordinate plane enables the extension of trigonometric functions to all real numbers, interpreted as radian measures of angles traversed counterclockwise around the unit circle.

**[HSF.TF.B.5](#)** Choose trigonometric functions to model periodic phenomena with specified amplitude, frequency, and midline.\*

**[HSF.IF.C.7.E](#)** Graph exponential and logarithmic functions, showing intercepts and end behavior, and trigonometric functions, showing period, midline, and amplitude.