Course Syllabus

Franklin High School	2020-2021

DIRECTIONS: For each course, complete the syllabus and share with your evaluating/supervising administrator **as a pdf** ("File-download-PDF document") by 9/28/20. Syllabi will be posted on the FHS website under your name for the public to view.

Course Overview

NOTE: For core classes, all elements of this section (except for name and contact information) are the same.

Course Title: Algebra 3-4

Instructor Name:Erika Johnson	Contact Info:ejohnso3@pps.net

Grade Level(s): 10-12

Credit Type: (i.e. "science", "elective") Math	# of credits per semester: 1

Prerequisites (if applicable):
Algebra 1-2; Geometry 1-2

General Course Description:
A study of advanced algebra skills with an emphasis on evaluating and graphing functions.

Prioritized National/State Standards:

Unit 1: Equations and Inequalities

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.*

Unit 2: Parent Graphs

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.

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 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.

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 3 and 4: Inverses, Logarithms and Exponentials

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.

Unit 5 and 6: Polynomials

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 7: Rational Expressions
Priority Standards:
HSA.APR.D.6 Rewrite simple rational expressions in different forms; write $a(x)/b(x)$ in the form $q(x) + r(x)/b(x)$, where $a(x)$, $b(x)$, $q(x)$, and $r(x)$ are polynomials with the degree of $r(x)$ less than the degree of $b(x)$, using inspection, long division, or, for the more complicated examples, a computer algebra system.
Unit 8: Trigonometric Functions
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.
Unit 9: Statistics
HSS.ID.A.4 Use the mean and standard deviation of a data set to fit it to a normal distribution and to estimate population percentages. Recognize that there are data sets for which such a procedure is not appropriate. Use calculators, spreadsheets, and tables to estimate areas under the normal curve
HSS.IC.B.6 Evaluate reports based on data.

Course Details
Learning Expectations
Materials/Texts All material will be posted on Canvas
Course Content and Schedule: Course Content and Schedule: Subject to change to meet the needs of students. Unit 1: Solving equations and inequalities: 9/14-9/23 Unit 2: Parent graphs: 9/24 - 10/14 Unit 3 and 4: inverses, logs and exponentials: 10/15-11/6 Unit 5 and 6: Polynomials: 11/9 - 11/30 Unit 7: Rational expressions: 12/1-12/11 Unit 8: Trigonometry: 12/14-1/21 Unit 9: Statistics: 1/22 - 1/28

Differentiation/accessibility strategies and supports (TAG, ELL, SpEd, other):
All materials are designated as C-level or A-level to provide differentiation opportunities for all students. Materials are provided with automatic feedback, notes are available in printed form and videos of teacher guided instruction are posted in Canvas. There will be a flexible timeline for demonstrating proficiency. Multiple attempts to retake assessments are allowed.

Safety issues and requirements (if applicable): NA

Classroom norms and expectations:
Students are to attend synchronous classes and complete materials assigned in Canvas on both synchronous and asynchronous class days.

Evidence of Course Completion

Assessment of Progress and Achievement:
Daily formative assessments will be given. These will provide feedback to both student and teacher as to how well the student is understanding the current learning target.
At the end of each Unit a Summative Assessment will be given.
Grades will be based on Summative assessments only

Progress Reports/Report Cards (what a grade means):
F:Not Passing :0-59%
D: Passing: 60-69%
C: Proficient :70-79%
B: High proficiency: 80-89%
A: Excels: 90-100%

Career Related Learning Experience (CRLEs) and Essential Skills: None

Communication with Parent/Guardian

What methods are used to communicate curriculum, successes, concerns, etc.?
Back to school night video, Synergy ParentVue and Canvas
Email and Remind

Personal Statement and other needed info