Math Course Descriptions for the W.S. Hart UHSD

10-02-2019

Course and IC Number	Description	Prerequisite Course	Typical Grade Level
Algebra 1 2621 & 2622	The Algebra course focuses on five critical areas: (1) deepen and extend understanding of linear and exponential relationships; (2) contrast linear and exponential relationships with each other and engage in methods for analyzing, solving, and using quadratic functions; (3) identify the effect of transformations on equations and graphs; (4) apply linear models to data that exhibit a linear trend; and (5) understand quadratic relationships and their applications.	Accelerated Math 7 Math 8	9
Honors Algebra 2660 & 2661	Includes all topics from Algebra 1 with additional work on complex numbers and matrices.	Accelerated Math 7 Math 8	8 or 9
Geometry 2641 & 2642	The Geometry courses focuses on five critical areas: (1) establish criteria for congruence of triangles based on rigid motions; (2) establish criteria for similarity of triangles based on dilations and proportional reasoning; (3) informally develop explanations of circumference, area, and volume formulas; (4) apply the Pythagorean Theorem to the coordinate plane; and (5) prove basic geometric theorems.	Algebra 1	10
Honors Geometry 2651 & 2652	Includes all topics from Geometry with additional work on conics and deriving the Laws of Sine and Cosine.	Honors Algebra 1 or Algebra 1 with Bridge to Honors Geometry	9 or 10
Algebra 2 2711 & 2712	The Algebra 2 courses focus on five critical areas: (1) relate arithmetic of rational expressions to arithmetic of rational numbers; (2) expand understandings of parents functions and graphing; (3) synthesize and generalize functions and extend understanding of exponential functions to logarithmic functions; (4) relate data display and summary statistics to probability and explore a variety of data collection methods; and (5) deepen and extend understanding of polynomial functions and their applications.	Geometry (low C or D grade one or both semesters)	11
Algebra2 /Trig 2715 & 2716	The Algebra 2/Trig courses focus on five critical areas: (1) relate arithmetic of rational expressions to arithmetic of rational numbers; (2) expand understandings of parents functions and graphing to include trigonometric functions; (3) synthesize and generalize functions and extend understanding of exponential functions to logarithmic functions; (4) relate data display and summary statistics to probability and explore a variety of data collection methods; and (5) deepen and extend understanding of polynomial functions and their applications.	Geometry (A, B or solid C grade both semesters)	11
Honors Algebra 2/Trig 2719 & 2720	Includes all topics from Algebra 2/Trig with additional work on conics, the unit circle, and the addition, subtraction, half angle and double angle formulas for trigonometry.	Honors Geometry	10 or 11

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Personal Finance (A-G) 2541	• Students will learn the foundations of personal finance and become proficient at applying the principles to their personal life goals. • Students will become financially literate and able to reason through future financial situations. • Students will learn to behave responsibly with finances, not just have knowledge, so they will be able to achieve financial well-being. • Students will learn how mathematical models, practices, standards, and reasoning apply to personal finance. • Students will develop informed and ethical money-management strategies • Students will reinforce academic skills such as communication, mathematics application, reading, research, and writing.	Algebra 2 or higher with a "C" or better	12
Personal Finance (non A-G) 2544	Same content as the A-G course described above, but this new course will allow students who have not completed A-G to have access to financial literacy curriculum, as well.	GE Students: Algebra 1 SPED Students: Basic Algebra AB and Basic Algebra CD	12
Survey Statistics (A-G) 2749	This course focuses on the following four topics: • Statistical Literacy (including bias, misleading graphical representations, parameter vs. statistic, cause and effect vs. association, sampling variability, etc.) • Exploratory data analysis (including numerical and graphical, measures of central tendency and spread) for univariate data • Analyzing and interpreting bivariate data • Experimental design	Algebra 2 or higher with a "C" or better	12
Discovering Statistics (non A-G) 2755	• Students will participate in learning activities that promote statistical literacy. • Students will learn sound statistical reasoning to empower them to intelligently cope with the requirements of citizenship, employment, and family. • Students will use technology regularly to analyze real data (often generated by the students). • Students will experience the investigative process of problem-solving through student-led surveys/polls and experiments.	GE Students: Algebra 1 SPED Students: Basic Algebra AB and Basic Algebra CD	12

Course and IC Number	Description	Prerequisite Course	Typical Grade Level
Pre-Calculus 2723 & 2724	Pre-calculus is a comprehensive course that weaves together previous study of algebra, geometry, and functions into a preparatory course for calculus. The course focuses on the mastery of critical skills and exposure to new skills necessary for success in subsequent math courses. The major topics include linear, quadratic, exponential, logarithmic, radical, polynomial, and rational functions; conic sections; trigonometric ratios and functions; inverse trigonometric functions; applications of trigonometry, including vectors and laws of cosine and sine; sequences and probability; and limits and continuity.	Algebra 2/Trig	11 or 12
Honors Pre-Calculus 2727 & 2728	Same content as above but covered much quicker and deeper. Most of the second semester is spent on Calculus ideas of limits, continuity, and derivatives.	Honors Algebra 2/Trig	11 or 12
AP Calculus AB 2735 & 2736	AP Calculus AB is designed to be the equivalent of a first semester college calculus course devoted to topics in differential and integral calculus.	Pre-Calculus or Honors Pre-Calculus or Honors Algebra 2/Trig	11 or 12
AP Calculus BC 2743 & 2744	AP Calculus BC is designed to be the equivalent to both first and second semester college calculus courses. AP Calculus BC applies the content and skills learned in AP Calculus AB to parametrically defined curves, polar curves, and vector-valued functions; develops additional integration techniques and applications; and introduces the topics of sequences and series.	Honors Pre-Calculus or AP Calculus AB	12
AP Statistics 2753 & 2754	The purpose of the AP course in statistics is to introduce students to the major concepts and tools for collecting, analyzing and drawing conclusions from data. Students are exposed to four broad conceptual themes: 1. Exploring Data: Describing patterns and departures from patterns 2. Sampling and Experimentation: Planning and conducting a study 3. Anticipating Patterns: Exploring random phenomena using probability and simulation 4. Statistical Inference: Estimating population parameters and testing hypotheses	Algebra 2/Trig or higher with a strong Language Arts background	12

Course and IC Number	Description	Prerequisite Course	Typical Grade Level
Basic Algebra A/B 2 semesters	This Algebra course focuses on two critical areas: (1) understand linear relationships and engage in methods for analyzing, solving, algebraic equations and inequalities; and (2) learn to solve systems of equations and inequalities including real-world problems.	Basic Math 8	9
Basic Algebra C/D 2 semesters	This Algebra course focuses on two critical areas: (1) identify the effect of transformations on equations and graphs; and (2) understand quadratic relationships and their applications.	Basic Algebra A/B	10
Preparation for Advanced Mathematics (PAM) (non A-G) GE: 2685 & 2686 SPED: 2119 & 2120	The course is split into four units of study as follows: • Algebra Academy (18 weeks) reviews and deepens students' understanding of algebra concepts. These include exponents, radicals, solving equations, systems of equations and quadratics. • Real-Life Geometry (6 weeks) looks at the foundations of geometry, scale drawings, maps, and area and volume problems. • Probability & Statistics in the World (6 weeks) includes gathering and analyzing data, creating appropriate visual displays and explanations of data, introduces the concepts of distribution and statistical tests, and explores probability in games and other contexts. • Money Talks (6 weeks) the cost of buying and maintaining a car, budgeting, banking, credit and taxes are all introduced in this unit. This math course is designed for juniors and seniors who are seeking to fulfill their 3rd year math requirement for graduation, but do **not** have the prerequisite skills to take Algebra 2 or a similar level of coursework.	GE Students: Algebra 1 SPED Students: Basic Algebra A/B and Basic Algebra C/D	GE: 12 SPED: 11
Personal Finance (non A-G) 2544	• Students will learn the foundations of personal finance and become proficient at applying the principles to their personal life goals. • Students will become financially literate and able to reason through future financial situations. • Students will learn to behave responsibly with finances, not just have knowledge, so they will be able to achieve financial well-being. • Students will learn how mathematical models, practices, standards, and reasoning apply to personal finance. • Students will develop informed and ethical money-management strategies • Students will reinforce academic skills such as communication, mathematics application, reading, research, and writing.	GE Students: Algebra 1 SPED Students: Basic Algebra AB and Basic Algebra CD	12
Discovering Statistics (non A-G) 2755	• Students will participate in learning activities that promote statistical literacy. • Students will learn sound statistical reasoning to empower them to intelligently cope with the requirements of citizenship, employment, and family. • Students will use technology regularly to analyze real data (often generated by the students). • Students will experience the investigative process of problem-solving through student-led surveys/polls and experiments.	GE Students: Algebra 1 SPED Students: Basic Algebra AB and Basic Algebra CD	12