MATHEMATICS For CCHS Students

These are general rules of thumb. Please take into consideration student interest, motivation, etc.

If a student took:	And got a grade of:	The next class should be:
Secondary Math I/IIH Advanced	A or B C, D or F	Secondary Math IIIH Secondary Math III
Secondary Math IH	A or B C, D or F	Secondary Math IIH Secondary Math II
Secondary Math I	A A, B, or C C, D, or F	Secondary Math IIH with successful completion of summer bridge course Secondary Math II Secondary Math II & recommendation of Secondary 2 Math Lab
Secondary Math IIH	A or B C, D, or F	Secondary Math IIIH Secondary Math III
Secondary Math II	A or B C or D D or F	Secondary Math III Secondary Math III & recommendation of Secondary 3 Math Lab See your counselor
Secondary Math IIIH	A or B A, B, or C D, or F	AP Calc AB, AP Calc BC, AP Stats, Math 1040, Math 1050, or Math 1060 Pre-Calculus, Math 1030, Math 1040 Intro to Statistics, College Prep, Math in Business & Personal Finance
Secondary III	A or B A, B, or C A, B, C, or D A, B, C, D, or F	Math 1050, Math 1060, AP Stats Pre-Calculus, Math 1030, Math 1040 College Prep Math in Business & Personal Finance, Introduction to Stats

COURSE DESCRIPTIONS

AP Calculus AB

Prerequisite: Pre-Calculus or Secondary Mathematics IIIH

This is an introduction to differential and integral calculus topics, which are equivalent to a college level Calculus 1 course. The course uses advanced skills in algebra, geometry, and trigonometry to analyze real world problems involving movement and variable rates of change. Graphing calculator investigations are an integral part of the course and the AP exam. University credit may be earned with successful performance on the AP exam.

AP Calculus BC

Prerequisite: Pre-calculus or Secondary Math IIIH

This course teaches the extension of the differential and integral calculus topics of Calculus AB, which is the equivalent to two semesters of college level Calculus 1 and 2 courses. The course uses advanced skills in algebra, geometry, and trigonometry to analyze real world problems involving movement and variable rates of change. This course focuses on the application of calculus using vectors, parametric/polar modeling, and power series. Graphing calculator investigations are an integral part of the course and the AP exam. University credit may be earned with a successful performance on the Advanced Placement exam.

AP Statistics

Prerequisite: Secondary Mathematics II. Can be taken concurrently with Secondary Math III.

An introductory, non-calculus based college level course which introduces students to the major concepts and tools for collecting, analyzing, and drawing conclusions from data, including exploring data, statistical inference, planning a study, and using probability and simulation to anticipate patterns. Graphing calculators with statistical capabilities are an integral part of the course and of the Advanced Placement exam. University credit may be earned with a successful performance on the Advanced Placement exam.

College Prep Math

Prerequisite: Secondary Math III

College Prep Math formalizes and reinforces concepts from the Secondary Mathematics series to provide students with the foundational skills and understanding that are prerequisite for College Algebra (1050). Students will reason abstractly and quantitatively while solving linear and quadratic equations and linear inequalities. They will efficiently use polynomial and rational expressions and functions, radicals and complex numbers, and exponential and logarithmic expressions and functions to model and solve mathematical problems. They will explore conic sections and represent parabolic data. Throughout this course, students will make sense of problems and persevere in solving them, use tools strategically, and attend to precision.

Introductory Statistics

Prerequisite: Secondary Math II

Statistics is a branch of mathematics that explores concrete connections with everyday living. Students will develop critical thinking skills with lifelong application. Students will gather, graph, examine, compare and interpret data using technology, including graphing calculators or computer statistics software. They will describe data and make informed decisions and predictions based on data.

Math Lab

The intervention mathematics course is designed to support students who need additional instruction beyond their Core mathematics course (Secondary I, II, or III). This course is intended to increase student understanding and achievement by increasing time and intensity on grade level core standards. Students will receive a pass/fail grade.

Mathematics of Personal & Business Finance

Prerequisite: Secondary II

This course focuses on the application of mathematics with an emphasis on understanding formulas and reasoning through real-life situations. Some of the topics that students will learn are wages, taxes, budgeting, interest, loans, credit, vehicle and house purchases, insurance and retirement.

MATH 1030 Quantitative Literacy

Prerequisite: Successful completion of Secondary I, II and III (C grade or better). Qualifying ACT Scores (Math: 19, Reading: 16). See Wayne Dittmore for more details.

Appropriate CPT or ACT Math score. Students must have successfully completed Secondary Math 3. This course focuses on the development of analytical thinking through the application of math to real-life problems. Topics include modeling, logic, financial math, probability, statistics, and geometry.

MATH 1040 Statistics

Prerequisite: Successful completion of Secondary I, II and III (C grade or better). Qualifying ACT Scores (Math: 22, Reading: 16). See Wayne Dittmore for more details.

Descriptive and inferential statistical methods. Emphasis on sampling design; descriptive statistics; linear regression and correlation; probability; sampling distributions; hypothesis testing, and confidence intervals.

MATH 1050 College Algebra

Prerequisite: Successful completion of Secondary I, II and III (C grade or better). Qualifying ACT Scores (Math: 23, Reading: 18). See Wayne Dittmore for more details.

This course covers polynomial, rational, exponential, and logarithmic functions and graphs, complex roots of polynomial functions, matrices, partial fractions, conics, sequences and series, and the binomial theorem. Includes real-world application problems and graphing technology.

MATH 1060 Trigonometry

Prerequisite: Math 1050 with C or Successful completion of Secondary I, II and III (C grade or better) and qualifying ACT Scores (Reading: 18) and Accuplacer math score. See Wayne Dittmore for more details.

Trigonometric functions and their graphs developed using circular and triangular methods including inverses; polar coordinates; and an introduction to vectors.

Pre-calculus

Prerequisite: Secondary Math III

This course combines the trigonometric, geometric, and algebraic techniques needed to prepare students for the study of calculus, and strengthens students' conceptual understanding of problems and mathematical reasoning in solving problems. Instructional time will focus on four critical areas: (1) extend work with complex numbers; (2) expand understanding of logarithms and exponential functions; (3) use characteristics of polynomial and rational functions to sketch graphs of those functions; and (4) perform operations with vectors. Proficiency with these topics is especially important for students intending to study calculus, physics, and other sciences, and/or engineering in college.

Secondary Mathematics I

The main focus of Secondary Mathematics I is to formalize and extend the mathematics that students learned in the middle grades. Students will deepen their understanding of linear relationships, in part by contrasting them with exponential relationships, and in part by applying linear models to data that exhibit a linear trend. Properties and theorems involving congruent figures will be used to deepen and extend understanding of geometric knowledge.

Secondary Mathematics I H

The main focus of Secondary Mathematics I H is to formalize and extend the mathematics that students learned in the middle grades. Students will deepen their understanding of linear relationships, in part by contrasting them with exponential relationships, and in part be applying linear models to data that exhibit a linear trend. Properties and theorems involving congruent figures will be used to deepen and extend understanding of geometric knowledge. Vectors and matrices, additional Pre-Calculus topics, will also be studied in the honors class so as to prepare students to take AP Calculus upon successful completion of Secondary Math III H.

Secondary Mathematics I H Adv.

This course is designed for the advanced math student who needs to take AP Calculus before their senior year and/or enter the IB program in their junior year. This course will cover all of Secondary I H and the first half of Secondary IIH. Students will not be placed into this class unless they meet all of the criteria. Students enrolling in Secondary Mathematics I H Advanced for first semester must also enroll in Secondary Mathematics II H Advanced A for second semester.

Secondary Mathematics II

The main focus of Secondary II is on quadratic expressions, equations, functions and comparing their characteristics and behavior to those of linear and exponential relationships. Extension of the set of rational numbers and real and complex numbers are introduced so that all quadratic equations can be solved. Students will explore conditional probability and counting methods in making and evaluating decisions. The study of similarity, Pythagorean relationships, and circles will the back to quadratics with their quadratic algebraic representations.

Secondary Mathematics II H

Prerequisite: Secondary Math IH or Secondary Math I with summer bridge course

The main focus of Secondary Mathematics II is on quadratic expressions, equations, and functions and comparing their characteristics and behavior to those of linear and exponential relationships. Extension of the set of rational numbers and real and complex numbers are introduced so that all quadratics equations can be solved. Students will explore conditional probability and counting methods in making and evaluating decisions. The study of similarity, Pythagorean relationships, and circles will the back to quadratics with their quadratic algebraic representations. The Fundamental Theorem of Algebra, along with additional probability and geometric concepts, will also be studied in the honors class so as to prepare students to take AP Calculus upon successful completion of Secondary III H.

Secondary Mathematics II H Adv. A

This course is designed for the advanced math student who needs to take AP Calculus before their senior year and/or enter the IB program in their junior year. This course will cover all of Secondary IH and the first half of Secondary Mathematics II H. Students enrolling in Secondary Mathematics II H Advanced for second semester must also enroll in Secondary Mathematics I H Advanced for first semester.

Secondary Mathematics III

The main focus of Secondary Mathematics III is for students to make connections and apply the concepts they learned in Secondary I and II. Students will apply methods from probability and statistics to draw inferences and conclusions from data. They will expand their knowledge of functions to include polynomial, rational, and radical functions. Students will further develop their study of right triangle trigonometry to include general triangles. Finally, they will create geometric and functional models to solve contextual problems.

Secondary Mathematics III H

Prerequisite: Secondary Math IIH

The main focus of Secondary Mathematics III H is for students to make connections and apply the concepts they learned in Secondary Mathematics I and Secondary Mathematics II. Students will apply methods from probability and statistics to draw inferences and conclusions from data. They will expand their knowledge of functions to include polynomial, rational, and radical functions. Students will further develop their study of right triangle trigonometry to include general triangles. Finally, they will create geometric and functional models to solve contextual problems. In the honors class, students will extend Secondary Mathematics III concepts to include polynomials with complex numbers, work with the Binomial Theorem, apply laws of trigonometry, and use further extended probability concepts. These extra topics will prepare students to take AP Calculus upon successful completion of Secondary Mathematics III H.