



C. MATHEMATICS

VUSD Graduation Requirement - 3 years

All students must pass Integrated Math 1 (only -Class of 2021 & beyond) and Integrated Math 2 (up to Class of 2020)

A-G College Entrance Requirement- 3 years with C or better

including Integrated Math 1, Int. Math 2 and Int. Math 3

All classes are college prep and meet the UC/CSU “C” math requirement unless otherwise noted

M690 Quantitative Reasoning (9)

- *Non-college prep*
- *Multiple measures used to determine if placement needed*

This course is for the student who has been identified as having learning gaps that will affect their success in high school math and beyond. Thus this course will seek to fill in these gaps through the use of a variety of instructional methods and a sequenced computer based curriculum. Topics include order of operation, number sense, arithmetic structures, linear equations, and modeling.

M651 Integrated Math 1 (9-12) or M652 P Lang Int. Math 1 or M653 Int. Math 1 SEI

- *This is the first year-long course of a three –year high school mathematical sequence.*

Integrated Math 1 is designed to combine some of the basic principles of Algebra 1, Geometry, and Statistics. Topics include Linear and Exponential functions, Rigid Transformation and Constructions, Interpreting and Analyzing Univariate and Bivariate data. The expectation is to develop and maintain a growth mindset for students and teach students how to learn math in a collaborative process where multiple methods and representations are celebrated. The Common Core Standards for Mathematical Practices will be addressed throughout the course.

M655 Integrated Math 2 (10-12) or M658 Int. Math 2SEI or M657 Int. Math 2 PLang

- *Prerequisite: successful completion of Integrated Math 1*

The second of a three-year high school math sequence, this course is designed to use patterns, modeling and conjectures to build student understanding and competency in math. It aligns with the five goals of the UC math requirement. Students will learn the mathematical sense-making, make and test conjectures and justify conclusions, use mathematical models to represent real-world data to provide clear and concise answers, and have computational and symbolic fluency.

M660 Integrated Math 2 with Math Analysis (10-12) or M658 Integrated Math with Math Analysis SEI

- *Prerequisite: successful completion of Integrated Math 1 with advanced achievement.*

This second course of a three-year accelerated high school math sequence includes topics from Math provide clear and concise answers, and have computational and symbolic fluency. Analysis in addition to the ones covered in Integrated Math 2. Students will learn the mathematical sense-making, make and test conjectures and justify conclusions, use mathematical models to represent real-world data to provide clear and concise answers, and have computational and symbolic fluency.

M800 Integrated Math 3 or M801 Int. Math 3 SEI

- *Prerequisite: successful completion of Integrated Math 2*

Integrated Math 3 completes the three-course sequence of Integrated Mathematics courses required for high school graduation. This yearlong course addresses the Common Core Standards for Integrated Math 3 as described in the state framework. This course brings together knowledge acquired in the previous two courses and uses it as a bridge to expand into more complex territory. Students expand their knowledge of functions, right-triangle trigonometry, and experiences with data as they solve sophisticated problems in preparation for enrolling in advanced mathematics courses.

M811 Integrated Math 3 with Math Analysis

- *Prerequisite: successful completion of Integrated 2 with Math Analysis*

This course will cover the same topics found in Integrated 3 with respect to the California Common Core State Standards. In addition, there will be topics from Math Analysis added to this course that will be needed for success in advanced college level mathematics courses. In addition, students will be asked to make sense of the mathematics in a deeper way to prepare them for the rigors of college level advanced math courses.

M803 Integrated Math 3 IB Math Studies (11-12) (2019-20 lat year it will be offered)

- *Prerequisite: successful completion of Integrated 2 with Math Analysis*
- *Full IB candidate*

This course will cover the same topics found in Integrated Math 3 with respect to the California Common Core State Standards. Students expand their knowledge of functions, right-triangle trigonometry, and experiences with data as they solve sophisticated problems in preparation for enrolling in advanced mathematics courses. In addition, it includes topics in logic, differential calculus, IB Exam question strategies and a focus on the mathematical research paper. Moreover, the course will include several small projects for each topic where students are expected to use the mathematics to investigate a concept or prove a conjecture. Lastly, this course will provide time for the IB Math Studies internal assessment project as well as prepare students to successfully take the IB Math Studies SL exam..

M680 Financial Algebra (11-12)

- *Prerequisite: successful completion of Int. Math 1 and Int. Math 2*

This mathematical modeling course is algebra-based, applications- oriented, and technology-

dependent. The course addresses college preparatory mathematics topics from Advanced Algebra, Statistics, Probability, Pre-calculus, and Calculus under seven financial umbrellas: banking, investing, credit, employment and income taxes, automobile ownership, independent living, and retirement planning and household budgeting. It allows students to experience the interrelatedness of mathematical topics, find patterns, make conjectures, and extrapolate from known situations to unknown situations. Students will be expected to use a variety of problem-solving skills and strategies in real-world contexts, and to question outcomes using mathematical analysis and data to support their findings.

M400 Probability/Statistics/Trigonometry (11-12)

- *Prerequisite: successful completion of Financial Algebra or Int Math 3*

The purpose of this Advanced Placement 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 statistical conceptual themes: 1) Exploring Data; 2) Planning a Study; 3) Anticipating Patterns; 4) Statistical Inference

M405 AP Statistics (11-12)

- *Prerequisite: successful completion of Int. Math 3*

This course uses real data from sports, business, science, health, education and other fields to teach students how to understand and analyze data. Topics of study include surveys, experiments, correlation, probability and inference. This is a fast paced course with the goal of preparing the students for the AP Statistics exam.

M420 IB Math Studies SL (12) (2019-20 is last year it will be offered)

- *Prerequisite: successful completion of Integrated Math 3 and*
- *Full IB candidate*

Math Studies is an elective math course open to all students who have successfully completed Int. Math 3. The curriculum emphasizes real world applications in probability /statistics, trigonometric functions, logic and polynomial functions. This course will prepare students for the standard level IB exam and all students are required to complete an internal assessment project due in the spring.

M440 AP Calculus AB (11-12)

- *Prerequisite: successful completion of Int. Math 3 with MA or Pre-Calculus*

This very demanding course, Calculus AB is the equivalent to one semester of a university analytic geometry/calculus course. Topics include functions, graphs, limits, derivatives and integrals.

M446 IB Mathematics HL2 (12) (2019-2020 will be the last year it will be offered)

- *Prerequisite: successful completion of Int. Math 3 with MA or AP Calculus*

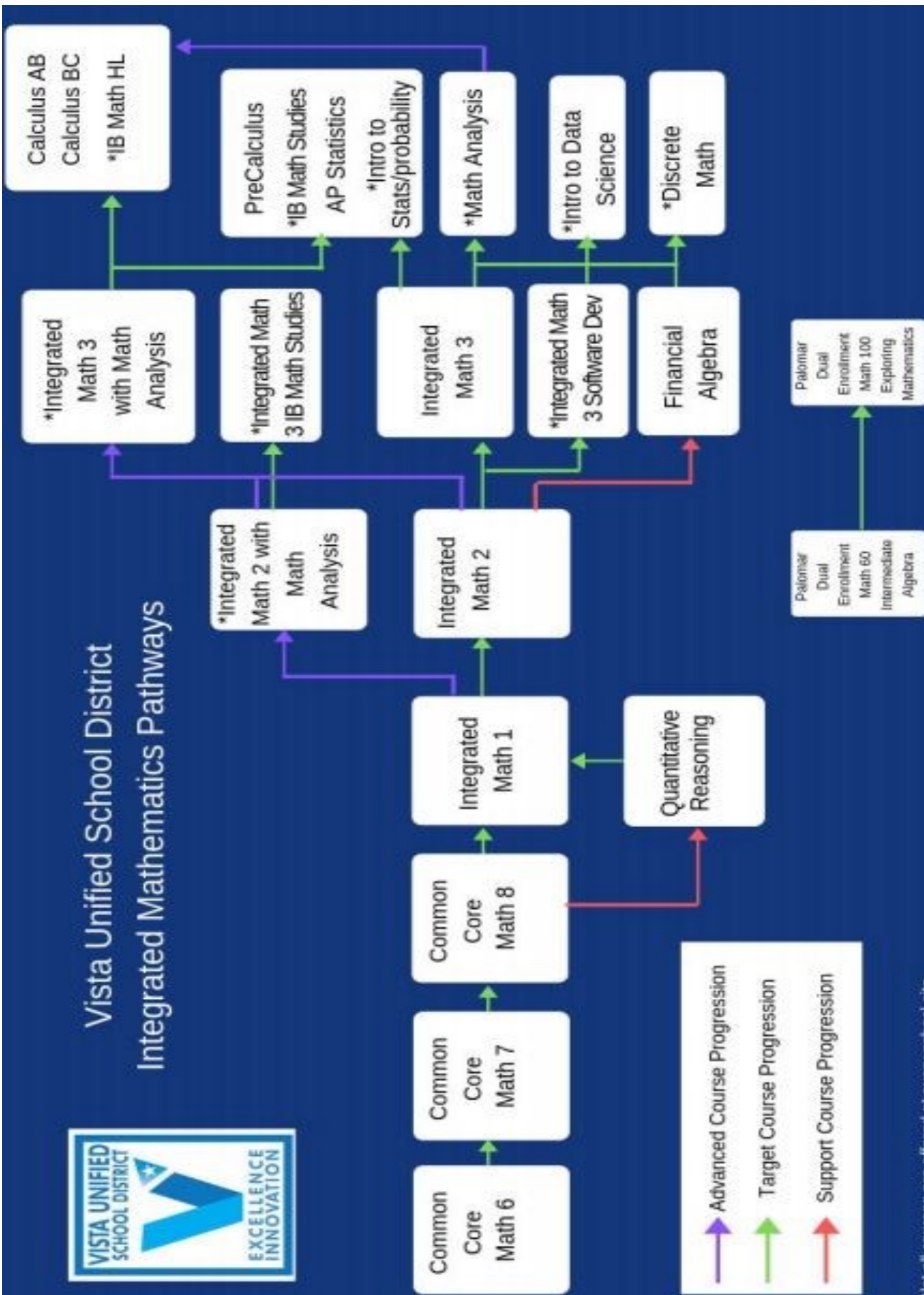
This IB Mathematics class is designed for students who will be expecting to either study mathematics in college or as a major component of a related subject such as physics, engineering or technology. Students are required to submit a portfolio consisting of two extended problems – one on a mathematical investigation and one on mathematic modeling. They are also expected to take the IB Mathematics Exam HL in the spring. Most colleges will give college credit for a passing score on the IB exam.

Refer to Math sequence on next page





Vista Unified School District Integrated Mathematics Pathways



*Not all courses are offered at every school site.