Mathematics – Scope & Sequence

Preparatory for High School Graduation

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Algebra I/          Geometry/           Algebra II/
Integrated   ───→   Integrated   ──┬──→ Integrated
Math I              Math II          │   Math III*
                                     │
                                     ├──→ Accounting
                                     │
                                     └──→ ROP Class
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High school graduation requires 30 credits completed at the high school level. All students must complete through Geometry/Integrated Math II.
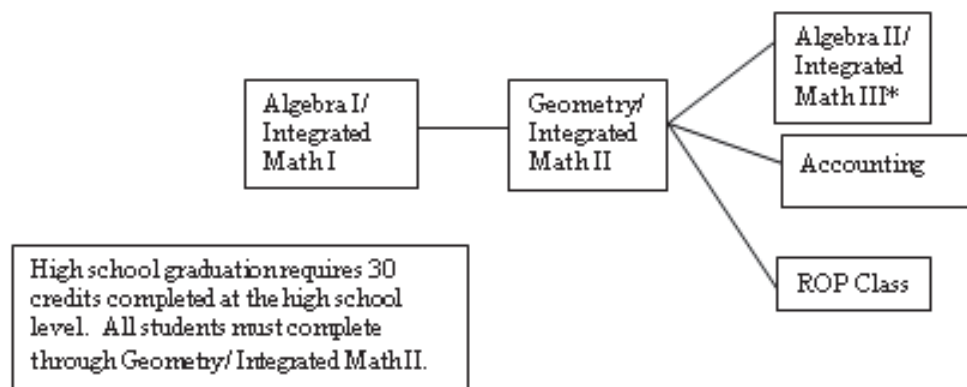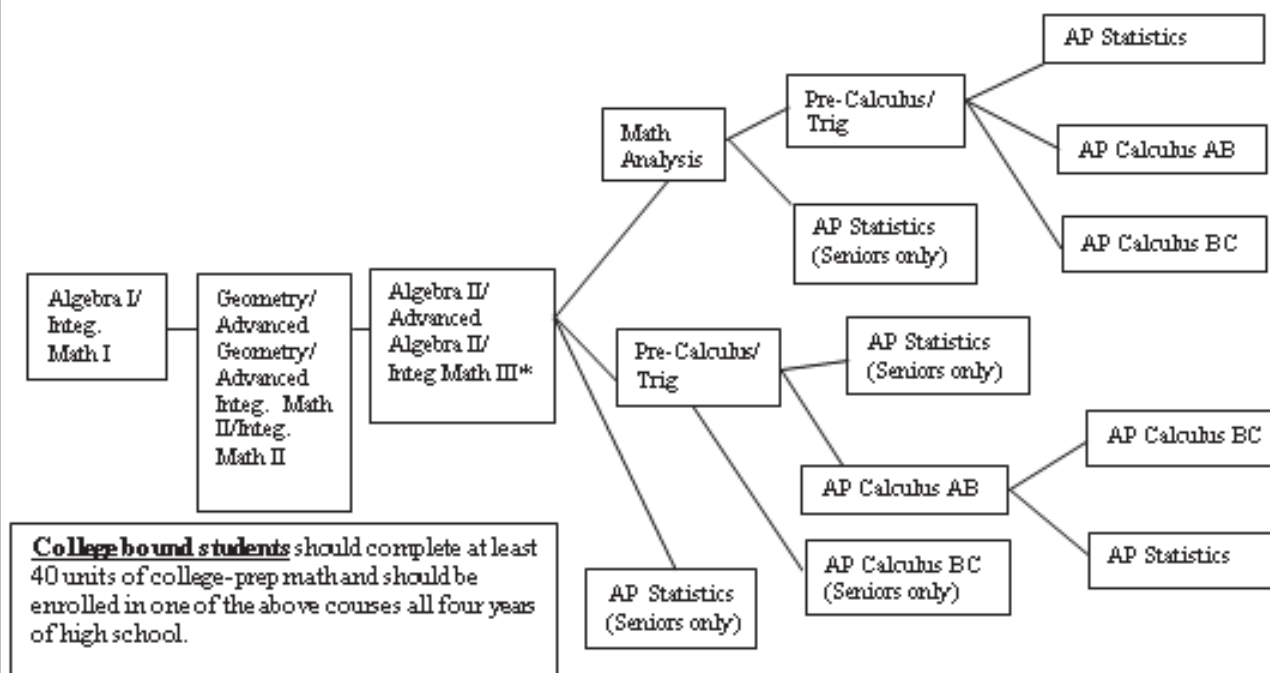
*Offered starting in 2016-2017
Please refer to the ROP Course Descriptions found on pages 58-64 for a complete list of courses that meet the math elective graduation requirement.

Preparatory for four-year College, University, or Community College with plans to transfer to a four-year school

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                                                         ┌──→ AP Statistics
                                      Pre-Calculus/  ────┼──→ AP Calculus AB
                                      Trig             │
                           Math  ────┤                  └──→ AP Calculus BC
                           Analysis   │
                                      └──→ AP Statistics
                                           (Seniors only)

Algebra I/     Geometry/      Algebra II/
Integ.   ───→  Advanced  ───→ Advanced    ──┤
Math I         Geometry/      Algebra II/    │         ┌──→ AP Statistics
               Advanced       Integ Math III*│  Pre-Calculus/  (Seniors only)
               Integ. Math    │              └──Trig ──┤
               II/Integ.                               └──→ AP Calculus BC
               Math II                                      (Seniors only)

                                           AP Calculus AB ──┬──→ AP Calculus BC
                                                            │
                                                            └──→ AP Statistics

                           AP Statistics
                           (Seniors only)
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College bound students should complete at least 40 units of college-prep math and should be enrolled in one of the above courses all four years of high school.

Starting in 2016-2017, Students wishing to accelerate their math course of study can take an Integrated Math II and Integrated Math III combination class. The class meets daily and covers Integrated Math II during the first semester and Integrated Math III during the second semester. Students should see their Integrated Math I teacher regarding placement for the following year. Sophomores and juniors may enroll in AP Statistics if they meet the prerequisites and are concurrently enrolled in another advanced math course.

INTEGRATED I
Grade Level: 9-12
Prerequisite: None

Requirements Met:	WHS Mathematics	UC/CSU Approved "C"

This course is the entry-level mathematics course at WHS. Topics covered include functions, transformations, modeling two variable data, sequences, systems of linear equations, congruence, coordinate geometry, exponential functions, and inequalities.

INTEGRATED II
Grade Level: 9-12
Prerequisite: Integrated I. Incoming 9th grade students must have a grade of "B" or higher in Advanced Integrated I or Integrated I and they must have approval from their 8th grade math teacher. Incoming 9th grade students, who have earned a "C" in Advanced Integrated I, have the option of taking a placement test the first week in June to be enrolled in Integrated II.

Requirements Met:	WHS Mathematics	UC/CSU Approved "C"

This course is for students who have completed Integrated I. Topics covered include, reasoning, angles, similarity, right triangles, probability, trigonometry, factoring, quadratic functions and equations, proof, quadrilaterals, polygons, circles, inequalities, functions, and solids.

INTEGRATED II/III
Grade Level: 10
Prerequisite: A grade of "A" both semesters in Integrated I.

Requirements Met:	WHS Mathematics (2nd year)	UC/CSU Approved "C"

This is the second and third year of a three-year course progression in which students will discover the concepts of algebra, geometry and statistics with an overall theme of problem solving. This course will meet every day so it will count as two classes in a student's schedule, and students will earn 20 credits total. This fast paced course is designed for students on the path to take AP Calculus AB or BC.

MATHEMATICS ELECTIVES

The following courses meet the WHS **Mathematics Elective** graduation requirement. Students must complete 30 credits of mathematics and complete at least through Geometry. Students must be enrolled in a Mathematics course in grades 9-11. It is recommended that college-bound students enroll in a 12th grade UC/CSU approved math course.

INTEGRATED III
Grade Level: 9-12
Prerequisite: Student must have completed both semesters of Algebra I and Geometry. Incoming 9th grade students must have a signature from their 8th grade Math teacher on their Six-Year Plan to enroll in this course.

Requirements Met:	WHS Mathematics Elective	UC/CSU Approved "C"

This course is to prepare students for the rigors of college level mathematics. Topics covered include problem solving, functions, series, exponentials, "parent graphs", linear systems, complex numbers, polynomials, transformations, combinations and permutations, inequalities, statistics, trigonometry, and rational expressions. It is highly recommended each student have a graphing calculator. Integrated III is the minimum requirement for entrance into most four-year colleges and universities.

MATH ANALYSIS
Grade Level: 10-12
Prerequisite: A grade of "C" or higher in both semesters of Algebra II and teacher approval

Requirements Met:	WHS Mathematics Elective	UC/CSU Approved "C"

This is a college preparatory course for students intending to go on to a UC/CSU school that have passed Algebra II, but need more practice with algebra related concepts to be successful in Pre-Calculus. The year-long course will incorporate California State Standards for mathematical analysis, linear algebra, and trigonometry. At the conclusion of this course, students will be prepared to continue studying mathematics in college or continue studying mathematical analysis and trigonometry in more detail in Pre-Calculus.

PRE-CALCULUS/TRIGONOMETRY HONORS
Grade Level: 10-12
Prerequisite: A grade of "B" or higher in both semesters of Algebra II or a grade of "C" or higher in both semesters of Math Analysis and teacher approval

Requirements Met:	WHS Mathematics Elective	UC/CSU Approved "C"

This course is to prepare students for the rigor of calculus. The topics include rational, polynomial, exponential, and transcendental functions, polar equations, parametric equations, the binomial theorem, vectors, limits, series, and trigonometry. This course will also cover trigonometry. In particular, students will learn about graphs, identities, and numerous applications.

ADVANCED PLACEMENT CALCULUS AB
Grade Level: 11-12
Prerequisite: A grade of "C" or higher in both semesters of Pre-Calculus
Fees: College Board testing fee ($TBA)

Requirements Met:	WHS Mathematics Elective	UC/CSU Approved "C"

Covers one semester of college calculus. Topics to be covered include functions and graphs, limits and continuity, differential calculus, integral calculus, and graphing calculator applications. Students take the AP exam at the end of this course. Students who pass the test may receive one semester of college credit, advanced placement, or both depending on the institution's policies.

ADVANCED PLACEMENT CALCULUS BC
Grade Level: 12
Prerequisite: A grade of "B" or higher in both semesters of Pre-Calculus or Prior enrollment in AP Calculus AB
Fees: College Board testing fee ($TBA)

Requirements Met:	WHS Mathematics Elective	UC/CSU Approved "C"

Covers two semesters of college calculus. Topics to be covered include all topics from AP Calculus AB, parametric, polar and vector functions, Euler's method, applications of integrals, integration techniques, partial fractions, logistical differential equations, polynomial approximations, and series. Students take the AP exam at the end of the course. Students who pass the test may receive up to two semesters of college credit, advanced placement, or both depending on the institution's policies.

ADVANCED PLACEMENT STATISTICS
Grade Level: 12 (10th -11th grade students may enroll with concurrent enrollment in another college-prep math course)
Prerequisite: Algebra II and an Academic GPA of 3.0 or higher
Fees: College Board testing fee ($TBA)

Requirements Met:	WHS Mathematics Elective	UC/CSU Approved "C"

AP Statistics is a college-level statistics course that is designed to prepare students for the AP Statistics exam in the spring. It is an introductory course in probability and statistics that includes descriptive statistics, techniques and of counting, probability, inferential statistics, regression techniques, and use of a statistical graphing calculator. It is recommended that each student have a graphing calculator. Students take the AP exam at the end of the course. Students who pass the test may receive college credit, advanced placement, or both depending on the institution's policies.

EAP MATH
Grade Level: 12
Prerequisite: A grade of "C" or higher in both semesters of Algebra 2

Requirements Met:	WHS Mathematics Elective	UC/CSU Approved "C"

EAP Math is a joint math project of California State University, Sacramento, Sierra College, and Placer County high schools designed to enhance students' understanding of functions and ability to model data mathematically. The course is designed to increase students' mathematical thinking by studying problem solving, functions (including linear, quadratic, exponential, logarithmic, systems, absolute value, and piecewise), business related topics, and various mathematical applications. As an added benefit of the course, students will be allowed to waive the math placement test if he or she attends Sierra College and/or the summer math project if he or she attends California State University, Sacramento.

ACCOUNTING
Grade Level: 11-12
Prerequisite: Integrated I
College Articulation: Students may articulate and receive CSU/UC transferable college credit at Sierra College

Requirements Met:	WHS Mathematics Elective	UC/CSU Approved "G"

This one-year course covers fundamental accounting principles for those who have had no previous study in bookkeeping or accounting. It provides practical training to enable students to hold bookkeeping or account clerk positions. Concepts covered will include basic accounting principles, data accumulation for financial statements, and the accounting cycle. The course utilizes a computerized accounting system, spreadsheets, and the use of word processing software for business applications.