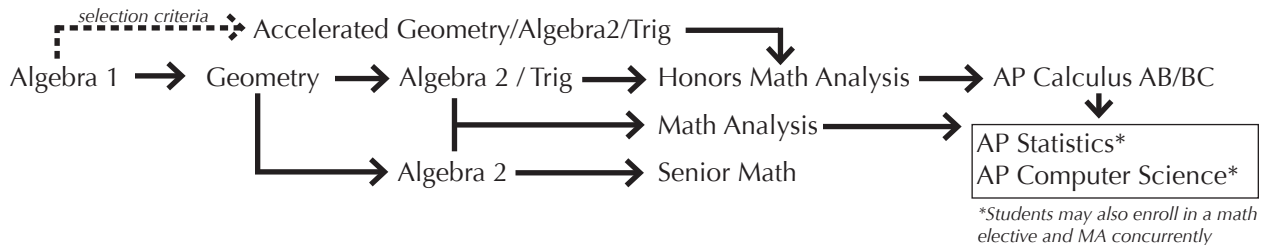


# PIONEER HIGH SCHOOL MATHEMATICS

## RECOMMENDED COURSE SEQUENCES



### PLAN 5: Preparation for Quantitative Majors and for Highly Selective Colleges

All of Pioneer's successful applicants to highly selective colleges, such as Stanford and Berkeley, take four years of math at Pioneer, regardless of how many credits they earn in middle school. Students who intend to major in science, engineering, medicine, business, or the social sciences need a rigorous mathematical curriculum to prepare for their university work. Both groups of students should follow a course sequence that culminates in calculus. Students should also consider taking statistics and/or computer science to supplement their sequence.

Algebra 1  
Geometry  
Algebra 2 / Trig  
Honors Math Analysis  
AP Calculus AB/BC  
AP Statistics and/or AP Computer Science

### PLAN 4: Preparation for Four-Year College

More than two-thirds of Pioneer's successful applicants to four-year colleges take four years of math at Pioneer. Students who do not plan to study quantitative subjects in college can achieve this with a less rigorous sequence that includes Math Analysis and could include statistics or computer science.

Algebra 1  
Geometry  
Algebra 2 / Trig  
Honors Math Analysis or Math Analysis  
AP Statistics and/or AP Computer Science

### PLAN 3: Preparation for College for Math-Resistant and Math-Phobic Students

Incoming CSU students take a math placement exam and those who don't pass must retake high school-level math classes for no credit. CSU-bound seniors need to maintain their math skills. Senior Math provides a lower-pressure alternative to Math Analysis for seniors who have historically struggled with math. Senior Math prepares students to pass the placement exam by reviewing the material presented in the first three years of the high school curriculum.

Algebra 1  
Geometry  
Algebra 2  
Math Analysis or Senior Math

### PLAN 2: Preparation for the Work Force

Students not planning to enter college immediately are also strongly encouraged to take four years of math. Math Analysis is an important capstone course that teaches students to solve real-world problems using computers, calculators, and the math they've learned throughout high school. Math Analysis covers skills that can help graduates find jobs and earn promotions in most occupations.

Algebra 1  
Geometry  
Algebra 2  
Math Analysis

### PLAN 1: San Jose Unified School District Minimal Graduation Requirements

Algebra 1      Geometry      Algebra 2

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## CORE COURSE DESCRIPTIONS

**Algebra 1**, whether taken at Pioneer or in middle school, covers the basic tools used to solve equations. (*Prerequisite: none*)

**Geometry** covers spatial reasoning, relationships between objects in two and three dimensions, and methods of mathematical proof. (*Prerequisite: Alg1*)

**Algebra 2** combines the skills of Alg1 and Geom and applies them to more complicated mathematical relationships. All students must complete Alg2 to graduate from high school. (*Prerequisite: Geom*)

**Algebra 2 / Trigonometry** covers Alg2 topics to a greater depth and adds additional material on trigonometric relationships. Students who intend to take calculus in high school or college should take Alg2/Trig. (*Prerequisite: Geom*)

**Accelerated Geometry / Algebra 2 / Trigonometry** covers in one year the material normally covered in Geom and Alg2/Trig. This course is for sophomores who would not otherwise be able to take calculus in high school. Enrollment is limited to students meeting specific criteria. See Ms. Ventura for more information. (*Prerequisites: Alg1 and enrollment criteria*)

**Math Analysis** studies how mathematics is used to analyze and solve real-world problems. Examples are drawn from science, business, government, and finance. Special focus is placed on using computers and calculators as problem-solving tools. The course is designed for students who do not intend to take calculus. (*Prerequisite: Alg2 or Alg2/Trig*)

**Honors Math Analysis** is the gateway to college-level mathematics. It covers pre-calculus concepts, advanced trigonometry, and analytic geometry. It is required for students who intend to study calculus in high school or college. (*Prerequisite: Alg2/Trig*)

**Advanced Placement Calculus AB/BC** are college-level calculus courses. AB covers a semester of college calculus. BC covers a full year of college calculus in the same amount of time. Students take one course or the other. When in doubt, students should take AB, as it is better to know the foundation of calculus well than all of calculus poorly. (*Prerequisite: Honors MA*)

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## ELECTIVE COURSE DESCRIPTIONS

**Senior Math** reviews material from Alg1, Geom, and Alg2 to prepare students to take placement tests

as college freshmen. Seniors who plan to attend a four-year college should take this course if they do not enroll in Math Analysis. (*Prerequisites: Alg2 and senior standing*)

**AP Statistics** is a college-level course in the statistics used to describe and make inferences from data. Numerical data and statistics are used in almost every discipline, especially in the social sciences, business, and engineering. College-bound students not planning on taking another AP math course are encouraged to take statistics. (*Prerequisite: MA with a grade of C or higher OR Alg2 with a grade of B or higher and concurrent enrollment in MA*)

**AP Computer Science** is a college-level course in the design, implementation, and analysis of JAVA computer programs. No prior programming experience is required, but students should be very comfortable with mathematical problem solving. (*Prerequisite: MA with a grade of C or higher OR Alg2 with a grade of B or higher and concurrent enrollment in MA*)

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## DEPARTMENT FACULTY 2005-2006

**Ms. Lori Ventura** (department chair), San Jose State  
Algebra 1, Algebra 2 / Trig, Statistics

**Mr. Patrick Bernhardt**, Stanford  
Math Analysis, Honors Math Analysis, Calculus BC

**Mr. Charles Follis**, Univ of Illinois  
Geometry

**Mr. Michael Hathaway**, UCLA, Univ of Virginia  
Algebra 2 / Trig, Math Analysis, Honors Math Analysis

**Mr. Nicholas Hoffman**, Sonoma State  
Algebra 1, Algebra 2 / Trig, Senior Math

**Mr. Bryan LaCaille**, UCLA  
Algebra 1, Calculus AB

**Mr. Eric Perry**, San Jose State, National Univ  
Algebra 1, Algebra 2

**Ms. Natalie Troedson**, San Diego State  
Algebra 1, Geometry

**Mr. Lonny Weissman**, San Jose State  
Algebra 1, Geometry

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