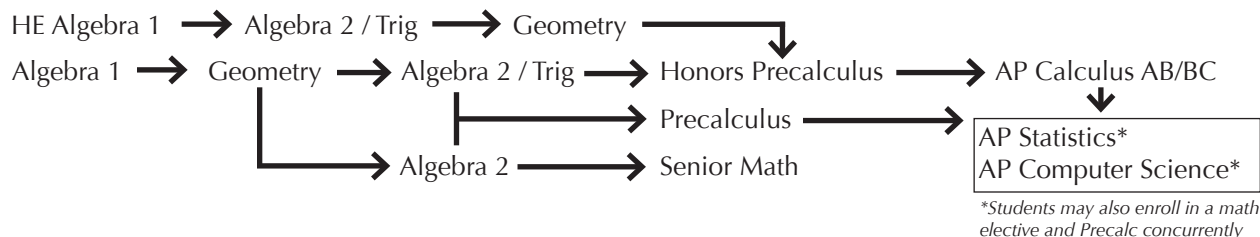


PIONEER HIGH SCHOOL MATHEMATICS

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. Those 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 Precalculus
 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 Precalculus and could include statistics or computer science.

Algebra 1
 Geometry
 Algebra 2 / Trig
 Honors Precalculus or Precalculus
 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 Precalculus 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
 Precalculus 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. Precalculus 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. Precalculus covers skills that can help graduates find jobs and earn promotions in most occupations.

Algebra 1
 Geometry
 Algebra 2
 Precalculus

PLAN 1: San Jose Unified School District Minimal Graduation Requirements

Algebra 1 Geometry Algebra 2

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*)

Precalculus 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. (*Prerequisite: Alg2 or Alg2/Trig*)

Honors Precalculus is the gateway to college-level mathematics. It covers math analysis concepts, advanced trigonometry, and analytic geometry. It is strongly recommended 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 for Calculus BC: Honors Precalc; Prerequisite for Calculus AB: Precalc or Honors Precalc*)

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 Precalculus. (*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: Precalc or Honors Precalc OR Alg2 with a grade of B or higher and concurrent enrollment in Precalc*)

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. For budgetary reasons this course is not offered in 2009-2010. (*Prerequisite: Precalc or Honors Precalc OR Alg2 with a grade of B or higher and concurrent enrollment in Precalc*)

DEPARTMENT FACULTY 2009-2010

Mr. Patrick Bernhardt (dept chair), Stanford Honors Precalculus, Calculus BC

Mr. Charles Follis, Univ of Illinois Senior Math, Geometry

Mr. Greg Giammona, Park Univ Algebra 1, Geometry

Mr. Nicholas Hoffman, Sonoma State Algebra 2 / Trig, Precalculus, Statistics

Mr. Bryan LaCaille, UCLA Algebra 1, Algebra 2 / Trig

Dr. Colleen McDonough, UC Berkeley, UCLA Algebra 2 / Trig

Mr. Stephen McMahon, DeAnza, USF, UC Berkeley Algebra 2 / Trig, Calculus AB

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

Mr. Lonny Weissman, San Jose State Algebra 1

Ms. Susanna Wise, Cal Poly San Luis Obispo Geometry, Algebra 2 / Trig

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