

COURSE TITLE: IB Mathematics: Analysis and Approaches 2

Level of Difficulty	Estimated Homework	Prerequisites
Very Difficult	60-90 minutes	District: IB Mathematics: Analysis and Approaches 1 with a B or better in both semesters. Department Suggestion: IB Mathematics: Analysis and Approaches 1 with an A in both semesters

Course Description:

IB Mathematics: Analysis and Approaches 2 is a Higher-Level IB course that covers all the topics required for the corresponding IB examination. This challenging course starts with a review of integration techniques learned in IB Mathematics: Analysis and Approaches 1 and moves on to further applications of integration (arc length, surface area, hydrostatic pressure, etc.), differential equations, parametric equations, and vectors. It also covers probability (theoretical, experimental, conditional, Bayes' Theorem, etc.), statistics (random variables, binomial, Poisson, and normal distributions, modeling, etc.), and infinite sequences and series (convergence tests, Taylor series, power series, etc.). Furthermore, students will also review topics learned in AP Precalculus such as complex numbers, DeMoivre's theorem, trigonometric identities, mathematical induction, etc., as they prepare for the IB examination in May.

Grading:

Grades for each semester of the course are determined by a weighted average of homework/classwork, , an Exploration (12- to 20- page paper involving mathematics of the student's choice), quizzes, and examinations. The weights for each of these categories are as follows: final exam, chapter tests, quizzes, and other assessments are 90%, homework/classwork are 10%.

Syllabus:

Following is link to the IB Mathematics: Analysis and Approaches 1 overview from the IB website:

<https://www.ibo.org/contentassets/5895a05412144fe890312bad52b17044/subject-brief-dp-math-analysis-and-approaches-en.pdf>

Students who are interested in the AP Calculus BC examination can find information about the exam here:

<https://apcentral.collegeboard.org/courses/ap-calculus-bc>

Supplemental Information:

This course fulfills the UC/CSU Subject Area “c” requirement.

This course qualifies for a weighted grade point scale.

Students are expected to have a solid grasp and understanding of the algebraic, geometric, and trigonometric concepts taught in Algebra 1, Geometry, Algebra 2, and AP Precalculus. In addition, students must have complete understanding of the concepts and thorough mastery of the techniques learned in the IB Mathematics: Analysis and Approaches 1 course. It is possible that a student needs to use a trigonometric identity to start a problem, follow with u-substitution, and then use integration by parts—all in the same problem! Students must be adept at applying their knowledge from previous math classes at a moment’s notice.