COURSE TITLE: IB Mathematics: Analysis and Approaches 1

Level of Difficulty	Estimated Homework	Prerequisites
Very Difficult	60-90 minutes	**District:** Math Analysis H with a B or better in both subterms; Math Analysis CP with an A in both subterms **Department Suggestion:** Students should take Math Analysis H if they plan to take this course

Course Description:

IB Mathematics: Analysis and Approaches 1 is a Standard-Level IB course that covers all of the topics required for the corresponding IB examination as well as all of the topics required for the AP Calculus AB examination. This course is essentially a first-semester College Calculus course. It starts with a thorough introduction to limits and quickly builds on limits to develop conceptual understanding of differentiation and integration. Students learn many techniques for differentiating and integrating functions, and they use these concepts and techniques in applications such as kinematic problems, optimization, volume calculations, etc. The course also includes an introduction to differential equations as required by the AP Calculus AB examination. Furthermore, the course includes a review of vectors, probability, and statistics from Math Analysis H/CP as these topics are part of the IB examination.

Grading:

Grades for each semester of the course are determined by a weighted average of homework, classwork, projects, an Exploration (6 to 12 page paper involving mathematics of the student's choice), quizzes, and examinations. The weights for each of these categories are as follows: chapter tests and other assessments are 65%, homework and classwork are 15%, and the final exam is 20%

Syllabus:

Following is a link to the AP Calculus AB overview from the College Board website:

https://apcentral.collegeboard.org/pdf/ap-calculus-ab-bc-course-and-exam-description-0.pdf?course=ap-calculus-ab

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

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 Math Analysis. It is possible that a student needs to use factoring by groups in one problem, a trigonometric identity in the next problem, and then rationalizing the denominator in the next problem, all the while employing differentiation and/or integration techniques, and all on the same test! Students must be adept at applying their knowledge from previous math classes at a moment's notice.