IB Mathematics: Grade 9 International Standard and Advanced Levels

9th Grade International *[6 periods per week]*

Mr. David Berkowitz & Mr. Don Buer

Course Description

This math course is a one-year course, required for a high school diploma. This course is designed to teach you the skills needed to apply mathematical techniques correctly, in subjects such as liberal arts, statistics, mathematics, physics, engineering and technology, and economics. A graphing calculator is highly recommended for this course. The instructor will use both the graphing calculator and possibly other mathematical software during class. Throughout the year students will be given both formative and summative assessments that test students learning and comprehension of the topics listed below.

Timeline and Topics

The course will be adapted to fit the needs of each student's needs as it will be split into 2 classes titles "Standard" and "Advanced".

The standard class is geared for students whose goals, university major, and possible career path does not include a substantial amount of math. As such it is taught under the assumption that once students enroll in the Diploma Programme starting in grade 11, they will likely choose Standard Level (SL) within their math course. Therefore, the year will be devoted to multiple concepts in Algebra so students can enhance their algebraic skills such as solving linear, absolute value, and quadratic equations and inequalities. Graphing lines and their real world applications will be discussed. Exponential and linear functions will be thoroughly investigated as well as the real, rational, and irrational numbers. The graphing calculator will aid in conceptual understanding of the course.

The advanced class is geared for students whose goals, university major, and possible career path do include a substantial amount of math. As such it is taught under the assumption that once students enroll in the Diploma Programme starting in grade 11, they will likely choose Higher Level (HL) within their math course. Therefore, the year will be devoted to one semester of Algebra and one semester of Geometry. Topics in Algebra include all those in the standard class. Topics in Geometry will include but are not limited to Coordinate Geometry including midpoint and distances formulas and the Pythagorean Theorem. Right triangles will be discussed and an introduction to the 3 trigonometric rations will be introduced. Other topics such as areas and volumes of polygons and polyhedra will be studied.