**Course Description**

The IP Math Intensive course picks up where 9 Intensive ended; it covers a precalulus curriculum of functions and trigonometry. It is aimed at developing: mathematical skills and techniques, an understanding of how and why the techniques work, the ability to apply those techniques to a wide range of application problems, and the ability to use technology judiciously and effectively. Students will develop reasoning and critical thinking skills, as well as the ability to read and speak about mathematics.

Course content

Functions

Modeling and equation solving

Functions and their properties

Twelve basic functions

Building functions from functions

Graphical transformations

Modeling with functions

Polynomial, Power, and Rational Functions

Linear and quadratic functions and modeling

Power functions and modeling

Polynomial functions of higher degree and modeling

Real zeros of polynomial functions

Complex numbers

Complex zeros and the Fundamental Theorem of Algebra

Graphs of rational functions

Solving equations and inequalities in one variable

Exponential, Logistic and Logarithmic functions

Exponential and logistic functions

Exponential and logistic modeling

Logarithmic functions and their graphs

Properties of logarithmic functions

Equation solving and modeling

Trigonometric Functions

Angles and their measures

Trigonometric functions of acute angles

Trigonometry extended: the circular functions

Graphs of sine and cosine, tangent, cotangent, secant, and cosecant

graphs of composite trigonometric functions

Inverse trigonometric functions

Solving problems with trigonometry

Analytic trigonometry

Fundamental identities

Proving trigonometric identities

Sum and difference identities

Multiple a-angle Identities

The Law of Sines

The Law of Cosines

Vector, Parametric equations, and Polar equations

Vectors in a plane

Dot products of vectors

` Parametric equations and motion

Polar coordinates

Graphs of polar equations

Discrete Mathematics

Basic combinatorics

Binomial theorem

Probability

Series and sequences

Math induction

**Assessment**

         International School of Boston (ISB) grade: Each trimester, students will be assessed on:

o  Completion of homework and corrections

o   Tests and Quizzes

**Materials**

         **Binder** with separators and paper (graph paper is best), or spiral notebook.  Binder/notebook should be used exclusively for math.

         **Pens, pencils, eraser, pencil sharpener, ruler.**

         **Graphing Calculator,**TI-84 plus recommended model

**Preparation, vacation, and off-site work**

This course requires self-discipline and initiative. Students are expected to be on time and prepared for class. They are expected to meet deadlines and to **seek help ahead of time** if needed.

Students are **responsible for all work missed** during an absence, including copying class notes from a peer. If an assignment is due during a planned absence, students should turn it in ahead of time or on time electronically.

**Resources**

         Class textbook

* Websites and on line learning tools as assigned by teacher