**Grade 12 Pre-Calculus Mathematics (40S)**

**Description**

Grade 12 Pre-Calculus Mathematics 40S is designed for students who intend to study Calculus and related mathematics as a part of post-secondary education. It builds on the topics studied in Grade 11 Pre-Cal and provides background knowledge and skills required for the study of Calculus in post-secondary institutions. The course is comprised of a high-level of theoretical mathematics with an emphasis on problem solving and mental mathematics.

Prior knowledge required for this course will include (but not be limited to) the following skills: graphing on a Cartesian plane, right-angle trigonometry, power laws, multi-step algebra, etc. Students are recommended to review these skills prior to starting the course, particularly if they have not taken a math course in a while.

This is a very fast moving and demanding course. It is imperative that students log in daily, for at least an hour each day. Students work through the lessons independently and can email the teacher with questions. A significant amount of work will be required to complete the lessons, practice material and prepare for assessments. Due dates are set for all assignments and tests to help students stay on track and increase success.

**Modules**

The course is organized into the following topics.

* Permutations, Combinations and Binomial Theorem
* Transformations of Functions
* Trigonometric Functions
* Trigonometric Equations and Identities
* Polynomials
* Radicals and Rationals
* Exponents and Logarithms

**Evaluation**

Assignments 35 %

Test 45 %

Provincial Exam 20 %

**Materials**

* Computer or laptop
  + It is best to complete the course on a computer instead of a mobile device.
* Scientific calculator
  + The use of a phone or computer calculator app is **not** permitted on tests. It is advised to always practice with a handheld calculator.
* Lined paper, pencil and eraser
  + Regular practice is required to master math skills. This is best completed on paper to encourage clear notation. Many assignments and tests will also require writing out processes by hand.
* Optional: Printer
  + Fill-in notes are provided for the video lessons. These may be downloaded and saved electronically or printed to be used while watching the videos.
* Optional: Graph paper