**Pre-Calculus 11**

**Course Overview:**

Pre-Calculus 11 is an academic math course that builds on students’ knowledge of everyday math concepts and expands into the pre-calculus realm to prepare for higher level and post-secondary mathematics courses. The overall framework for this course will be centered around both what the students learn (the content) and how they learn it (the curricular competencies).

The course content can be broken down into three distinct units of study:

1. ***Applications***
   1. Trigonometry (10 days)
   2. Personal Finance (10 days)
2. ***Algebra***
   1. Operations on Powers (3 days)
   2. Factoring (8 days)
   3. Radicals (10 days)
   4. Rationals (10)
3. ***Quadratics***
   1. Functions (10 days)
   2. Equations (10 days)
   3. Systems of Quadratic Equations (10 days)

The content will be assessed using the curricular competencies that stress learning and evaluate understanding in a variety of ways. In any one assessment, one or more of the following competencies may be highlighted. In mathematics, the main competencies are:

* *Understanding & Solving*
  + Develop, demonstrate, and apply mathematical understanding through play, story, **inquiry**, and problem solving
  + **Visualize** to explore and illustrate mathematical concepts and relationships
  + Apply **flexible and strategic approaches** to **solve problems**
  + Solve problems with **persistence and a positive disposition**
  + Engage in problem-solving experiences **connected** with place, story, cultural practices, and perspectives relevant to local First Peoples communities, the local community, and other cultures
* *Reasoning & Modelling*
  + Develop **thinking strategies** to solve puzzles and play games
  + Explore, **analyze**, and apply mathematical ideas using **reason**, **technology**, and **other tools**
  + **Estimate reasonably** and demonstrate **fluent, flexible, and strategic thinking** about number
  + **Model** with mathematics in **situational contexts**
  + **Think creatively** and with **curiosity and wonder** when exploring problems
* *Connecting & Reflecting*
  + **Reflect** on mathematical thinking
  + **Connect mathematical concepts** with each other, other areas, and personal interests
  + Use **mistakes** as **opportunities to advance learning**
  + **Incorporate** First Peoples worldviews, perspectives, **knowledge**, and **practices** to makeconnections with mathematical concepts
* *Communicating & Representing*
  + **Explain and justify** mathematical ideas and **decisions** in **many ways**
  + **Represent** mathematical ideas in concrete, pictorial, and symbolic forms
  + Use mathematical vocabulary and language to contribute to **discussions** in the classroom
  + Take risks when offering ideas in classroom **discourse**

Students will be assessed and evaluated through a variety of means to meet different learning styles. Students will engage in both individual and group activities to guide their learning. Students will have opportunities to self-evaluate their own learning and celebrate achievements. Students will be encouraged to engage in an environment that accepts and builds on individual strengths and challenges.

Homework can be expected daily and will be posted on Teams and through my homework site, [www.grottolieducation.weebly.com](http://www.grottolieducation.weebly.com) which can be accessed directly or through the school’s homework page at <https://www.fhcollins.ca/homework.html>. In order to avoid accumulating misconceptions, it is necessary for students to keep up with class expectations and self-checks. Certain lessons will require participation in class and cannot be replaced by online learning. As such, extended absences from class are not encouraged. However, in the event of such unexpected situations, the content and video lessons will be made available through Teams.

To complete the course successfully, a student is required to demonstrate a certain level of ability (*Developing – level 2*) in all three content units, as assessed in each of the four competencies, at least three times. For example, in ***Applications***, a student would be required to demonstrate, three times, their ability to *Understand & Solve* as described by the sub-categories of that competency. In a similar manner, students are required to demonstrate their ability, three times, in the remaining three competencies (with the exception of *Connecting & Reflecting* where only 1 piece if of assessed evidence is required). In total, a student would be required to present 30 samples (10 from each content area) of their abilities in a variety of ways. Each of these samples will be graded numerically on a four-point scale and converted into a number grade for the midterm and final reports. A course is considered incomplete and not eligible for credit until the entirety of the content has been covered in this manner.

**Resources:**

- Textbook: *Mathématiques pré-calcul 11* – Chenelière McGraw-Hill

* other resources will be used for supplementary worksheets, practice, projects and concept building (ex. Mickelson workbooks)