*Coquitlam Learning Opportunity Centre*

**FOUNDATIONS OF MATH 12 (ONLINE)**

**INSTRUCTOR:** Angus Chan

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**SCHEDULE:** Tuesday/Thursday 4:30pm9:00pm

**LEARNING CENTRE HOURS:** MondayFriday 10:00am2:00pm

MondayThursday 4:00pm9:00pm

The Learning Centre is closed all statutory and school holidays.

**INTRODUCTION**

Foundations of Math 12 is designed to prepare students for entry into post-secondary programs that do not require the study of calculus. The following **big ideas** are emphasized:

* *Probabilistic thinking informs decision making in situations involving chance and uncertainty.*
* *Modelling data requires an understanding of a variety of functions.*
* *Mathematical analysis informs financial decisions.*
* *Through explorations of spatial relationships, we can develop a geometrical appreciation of the world around us.*

**CURRICULAR COMPETENCIES** *Students are expected* ***to do*** *the following:*

**Reasoning and Modelling**

* *develop thinking strategies to solve puzzles and 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*

**Understanding and Solving**

* *develop, demonstrate, and apply conceptual understanding of mathematical ideas 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*

**Communicating and 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*
* *take risks when offering ideas in classroom discourse*

**Connecting and Reflecting**

* *reflect on mathematical thinking*
* *connect mathematical concepts with each other, with other areas, and with personal interests*
* *use mistakes as opportunities to advance learning*
* *incorporate First Peoples worldviews, perspectives, knowledge, and practices to make connections with mathematical concepts*

**CONTENT** *Students are expected* ***to know*** *the following:*

* *graphical representations of polynomial, logarithmic, exponential, and sinusoidal functions*
* *regression analysis*
* *combinatorics*
* *odds, probability, and expected value*
* *polynomial functions and equations*
* *financial planning*
* *geometric explorations: constructions, conics, fractals*

**LEARNING RESOURCES**

The self-paced online Foundations of Math 12 course does not require a textbook. All lessons and

practice materials are provided online. Access information will be provided following registration. A graphing calculator is required for successful completion of this course. The graphing calculator used in the online course and at CLOC is Texas Instruments model TI-84 or TI-83.

**FOUNDATIONS of MATH 12 at Coquitlam Learning Opportunity Centre**

Foundations of Math 12 at CLOC is a self-paced, self-directed course. You will be expected to work independently and to manage your time productively. If needed, individual help is available online or face-to-face at CLOC. An important element for success in Foundations of Math 12 will be your study skills. Successful students establish a study schedule and stick to it.

**EVALUATION**

Evaluation in Foundations of Math 12 includes unit tests, a midterm test, and a final exam. All tests include both multiple-choice and written-response questions. To encourage mastery of course content, **one** rewrite will be available for each unit test. There are **no** rewrites for the midterm test or the final exam. The tests will be weighted as follows:

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| **TEST** | **CONTENT** | **PERCENT** |
| Unit 1 | Investing Money | **8** |
| Unit 2 | Borrowing Money | **8** |
| Unit 3 | Combinatorics | **8** |
| Unit 4 | Probability | **10** |
| Midterm | Units 1‒4 | **15** |
| Unit 5 | Polynomial Functions | **6** |
| Unit 6 | Exponential and Logarithmic Functions | **6** |
| Unit 7 | Sinusoidal Functions | **8** |
| Unit 8 | Conics | **6** |
| Final Exam | Units 1‒8 | **25** |
|  |  | **100** |