Coquitlam Learning Opportunity Centre

PRE-CALCULUS 12 (ONLINE)

INSTRUCTOR: Marg Koetsier
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PHONE: 604–945–4211 (CLOC office)
SCHEDULE: Monday/Wednesday/Friday 10:00am–2:00pm
Tuesday/Thursday 4:00pm–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

Pre-Calculus 12 is designed to prepare students for entry into post-secondary programs that require the study of calculus. The following **big ideas** are emphasized:

- *Using inverses is the foundation of solving equations and can be extended to relationships between functions.*
- *Understanding the characteristics of families of functions allows us to model and understand relationships and to build connections between classes of functions.*
- *Transformations of shapes extend to functions and relations in all of their representations.*

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:*

- *transformations of functions and relations*
- *exponential functions and equations*
- *geometric sequences and series*
- *logarithms: operations, functions, and equations*
- *polynomial functions and equations*
- *rational functions*
- *trigonometry: functions, equations, and identities*

LEARNING RESOURCES

The self-paced online Pre-Calculus 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 Pre-Calculus 12. Although many questions will not require the use of a graphing calculator, there are questions where the graphing capabilities will be used to either produce a graph or to find zeros, intersections points, etc. The graphing calculator used in the online course and at CLOC is Texas Instruments model TI-83 or TI-84.

PRE-CALCULUS 12 at Coquitlam Learning Opportunity Centre

Pre-Calculus 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 Pre-Calculus 12 will be your study skills. Successful students establish a study schedule and stick to it.

EVALUATION

Evaluation in Pre-Calculus 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:

TEST	CONTENT	PERCENT
Unit 1	Transformations	**8**
Unit 2	Graphing Rationals	**8**
Unit 3	Polynomials	**6**
Unit 4	Exponents and Logarithms	**10**
Midterm	Units 1–4	**20**
Unit 5	Circular Functions	**8**
Unit 6	Trigonometric Equations and Identities	**8**
Unit 7	Sequences and Series	**7**
Final Exam	Units 1–7	**25**
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