UNIVERSITY OF THE FRASER VALLEY

ORIGINAL COURSE IMPLEMENTATION DATE: September 1993
REVISED COURSE IMPLEMENTATION DATE: September 2018
COURSE TO BE REVIEWED: (six years after UEC approval) January 2020
Course outline form version: 09/15/14

OFFICIAL UNDERGRADUATE COURSE OUTLINE FORM

Note: The University reserves the right to amend course outlines as needed without notice.

Course Code and Number: MATH 110	**Number of Credits:** 4 Course credit policy (105)
Course Full Title: Pre-Calculus Math **Course Short Title (if title exceeds 30 characters):**	
Faculty: Faculty of Science	**Department (or program if no department):** Mathematics and Statistics

Calendar Description:

An opportunity to develop high school mathematics skills in order to progress into first-year calculus. Topics include basic algebraic skills, functions including rational, exponential, logarithmic, trigonometric, and inverse functions, and an introduction to the instantaneous rate of change. Practical applications are emphasized.

Note: Students with credit for MATH 140 cannot take this course for further credit.

Prerequisites (or NONE):	One of the following: (C or better in one of Principles of Mathematics 12 or Pre-calculus 12) or (B or better in Calculus 12) or (both MATH 092 and MATH 093) or (both MATH 094 and MATH 095) or (MATH 096) or (C+ or better in Applications of Mathematics 12) or (at least 55% on the MDPT).
Corequisites (if applicable, or NONE):	NONE
Pre/corequisites (if applicable, or NONE):	NONE

Equivalent Courses (cannot be taken for additional credit)

Former course code/number:

Cross-listed with:

Equivalent course(s): **MATH 140**

Note: Equivalent course(s) should be included in the calendar description by way of a note that students with credit for the equivalent course(s) cannot take this course for further credit.

Transfer Credit

Transfer credit already exists: ☒ Yes ☐ No

Transfer credit requested (OReg to submit to BCCAT):
☐ Yes ☐ No (if yes, fill in transfer credit form)

Resubmit revised outline for articulation: ☒ Yes ☐ No

To find out how this course transfers, see **bctransferguide.ca**.

Total Hours: 60

Typical structure of instructional hours:

Lecture hours	60
Seminars/tutorials/workshops	
Laboratory hours	
Field experience hours	
Experiential (practicum, internship, etc.)	
Online learning activities	
Other contact hours:	
Total	**60**

Special Topics

Will the course be offered with different topics?
☐ Yes ☒ No

If yes, different lettered courses may be taken for credit:
☐ No ☐ Yes, repeat(s) ☐ Yes, no limit

Note: The specific topic will be recorded when offered.

Maximum enrolment (for information only): 36

Expected frequency of course offerings (every semester, annually, every other year, etc.): Fall and Winter

Department / Program Head or Director: Ian Affleck	**Date approved:**	September 2017
Faculty Council approval	**Date approved:**	September 8, 2017
Campus-Wide Consultation (CWC)	**Date of posting:**	October 13, 2017
Dean/Associate VP: Lucy Lee	**Date approved:**	September 8, 2017
Undergraduate Education Committee (UEC) approval	**Date of meeting:**	October 27, 2017

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Demonstrate basic algebraic skills, especially those most frequently required in the study of calculus,
2. Demonstrate proficiency with function notation,
3. Use technology to explore mathematical concepts,
4. Explain the graphs and properties of the basic functions used in calculus (power, rational, exponential, logarithmic, trigonometric, inverse functions), and
5. Apply the basic functions to practical situations, translating from English to mathematics and back again.

Prior Learning Assessment and Recognition (PLAR)

☒ Yes ☐ No, PLAR cannot be awarded for this course because

Typical Instructional Methods (guest lecturers, presentations, online instruction, field trips, etc.; may vary at department's discretion)

Lectures are interspersed with problem sessions; evaluation includes assignments, midterms, and a three-hour comprehensive final. Graphing calculators will be used throughout.

Grading system: Letter Grades: ☒ Credit/No Credit: ☐ Labs to be scheduled independent of lecture hours: Yes ☐ No ☐

NOTE: The following sections may vary by instructor. Please see course syllabus available from the instructor.

Typical Text(s) and Resource Materials

The textbook is chosen by a departmental curriculum committee. Recent texts include:

	Author (surname, initials)	Title (article, book, journal, etc.)	Current ed.	Publisher	Year
1.	Ratti and McWaters	Precalculus Essentials	☒	Pearson	2014
2.			☐		
3.			☐		
4.			☐		
5.			☐		

Required Additional Supplies and Materials (software, hardware, tools, specialized clothing, etc.)

A graphing calculator (without a computer algebraic system) is required.

Typical Evaluation Methods and Weighting

Final exam:	40%	Assignments:	10%	Midterm exam:	%	Practicum:	%
Quizzes/tests:	50%	Lab work:	%	Field experience:	%	Shop work:	%
Other:	%	Other:	%	Other:	%	Total:	100%

Details (if necessary): Students must achieve at least 40% on the final exam in order to receive credit for this course.

Typical Course Content and Topics

1. Review of basic algebra.
2. Algebraic equations and inequalities.
3. Functions and graphs, including mathematical notation and language, and the use of functions to relate a mathematical equation to situations encountered in life.
4. Polynomial and rational functions.
5. Inverse functions: finding them graphically and algebraically, understanding their uses.
6. Exponential and logarithmic functions, including applications such as population growth, radioactive decay, the spread of pollution.
7. Trigonometric functions and their relationship to periodic phenomena such as ocean tides, human physiology.
8. Analytic trigonometry
9. Sequences, series, inductions, as time permits.
10. Introduction to the instantaneous rate of change.