UNIVERSITY COLLEGE of the FRASER VALLEY

COURSE IMPLEMENTATION DATE: September 1993
COURSE REVISED IMPLEMENTATION DATE: January 2007
COURSE TO BE REVIEWED: September 2009
(Four years after UPAC Final Approval Date) (MONTH YEAR)

OFFICIAL COURSE OUTLINE INFORMATION

Students are advised to keep course outlines in personal files for future use.
Shaded headings are subject to change at the discretion of the department and the material will vary - see course syllabus available from instructor

FACULTY/DEPARTMENT: **Science, Health & Human Services / Mathematics & Statistics**

MATH 110		**4**
COURSE NAME/NUMBER	FORMER COURSE NUMBER	UCFV CREDITS

PRE-CALCULUS MATH
COURSE DESCRIPTIVE TITLE

CALENDAR DESCRIPTION:

This course is required for students who intend to study calculus and who have not obtained a mark of at least a B in Principles of Math 12 or equivalent.

MATH 110 is intended to give students an opportunity to develop the mathematics they have seen in high school and progress into a successful completion of first-year calculus. In particular, it is meant to help students strengthen their basic algebraic skills, to re-examine functions including rational, exponential, logarithmic, trigonometric, and inverse functions, and to provide a general introduction to the instantaneous rate of change as studies in calculus. Practical applications are emphasized. As the use of technology can greatly facilitate the study of mathematics, students will require a graphing calculator.

Students may receive credit for only one of Math 094/095 or Math 110.

PREREQUISITES: **A recent Principles of Math 12 (provincially examined); or UCFV MATH 094 and 095 with a C- or better, or Applications of Math 12 with at least a C+; or a score of at least 55% on the MDPT. Effective January 2007, the prerequisites will be: Principles of Math 12 with a C or higher (provincially examined), or MATH 094 and MATH 095 with a C- or higher, or Applications of Math 12 with at least a C+, or a score of at least 55% on the MDPT.**

COREQUISITES:

SYNONYMOUS COURSE(S)
(a) Replaces: _____ *(Course #)*
(b) Cannot take: **MATH 094 and 095** *(Course #)* for further credit.

SERVICE COURSE TO:
_____ *(Department/Program)*
_____ *(Department/Program)*

TOTAL HOURS PER TERM: **75**
STRUCTURE OF HOURS:

Lectures:	**75**	Hrs
Seminar:		Hrs
Laboratory:		Hrs
Field Experience:		Hrs
Student Directed Learning:		Hrs
Other (Specify):		Hrs

TRAINING DAY-BASED INSTRUCTION
LENGTH OF COURSE: _____
HOURS PER DAY: _____

MAXIMUM ENROLLMENT: **36**
EXPECTED FREQUENCY OF COURSE OFFERINGS: **Fall & Winter**

WILL TRANSFER CREDIT BE REQUESTED? (lower-level courses only)	☒ Yes	☐ No
WILL TRANSFER CREDIT BE REQUESTED? (upper-level requested by department)	☐ Yes	☐ No
TRANSFER CREDIT EXISTS IN BCCAT TRANSFER GUIDE:	☒ Yes	☐ No

AUTHORIZATION SIGNATURES:

Course Designer(s): Calculus Group
Chairperson: Gillian Mimmack *(Curriculum Committee)*
Department Head: Gillian Mimmack
Dean: Jacalyn Snodgrass
PAC Approval in Principle Date:
PAC Final Approval Date: September 30, 2005

LEARNING OBJECTIVES / GOALS / OUTCOMES / LEARNING OUTCOMES:

The course is meant to provide students with a deeper understanding of the concepts and techniques necessary for a successful study of calculus. Work progressed at a pace which provides a good preparation for the pace of first-year calculus.
Successful students will:

1. reinforce their basic algebraic skills, especially those most frequently required in the study of calculus,
2. increase their proficiency with function notation,
3. become comfortable using technology to explore mathematical concepts,
4. thoroughly familiarize themselves with the graphs and properties of the basic functions used in calculus (power, rational, exponential, logarithmic, trigonometric, inverse functions), and
5. be able to apply the basic functions to practical situations, translating from English to mathematics and back again.

METHODS:

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

PRIOR LEARNING ASSESSMENT RECOGNITION (PLAR):

Credit can be awarded for this course through PLAR (Please check:) ☒ Yes ☐ No

METHODS OF OBTAINING PLAR:

Course challenge. Please check online at http://www.ucfv.ca/math/challenge.htm for the departmental challenge policy.

TEXTBOOKS, REFERENCES, MATERIALS:

[Textbook selection varies by instructor. An example of texts for this course might be:]

The textbook is chosen by a departmental curriculum committee. Recent texts include:
Connally, Hughes, Hallett, Gleason, et al. 2000. Functions Modeling Change. Wiley.
Stewart, Redlin, Watson. 1998. Precalculus. Third edition. Brooks/Cole.

SUPPLIES / MATERIALS:

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

STUDENT EVALUATION:

[An example of student evaluation for this course might be:]

The weighting of the various components may vary from instructor to instructor and from year to year, although there must be at least two midterms, and the comprehensive final exam must be worth from 30% to 50% of the final grade.
An example of student evaluation for this course:

Quizzes/assignments	20%
Midterm exams	40%
Final exam	40%

Students must achieve at least 40% on the final exam in order to receive credit for this course.

COURSE CONTENT:

[Course content varies by instructor. An example of course content might be:]

Exact course content and ordering may vary slightly from year to year but will encompass the following:
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 sintuations 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.