NORTHWESTERN POLYTECHNIC

DEPARTMENT OF ACADEMIC UPGRADING

COURSE OUTLINE –Winter 2023

MA0110 (A3,B3): Mathematics Grade 10-C Equivalent–5 (0-0-7.5) HS
112.5 Hours for 15 Weeks

Northwestern Polytechnic acknowledges that our campuses are located on Treaty 8 territory, the ancestral and present-day home to many diverse First Nations, Metis, and Inuit people. We are grateful to work, live and learn on the traditional territory of Duncan's First Nation, Horse Lake First Nation and Sturgeon Lake Cree Nation, who are the original caretakers of this land.

We acknowledge the history of this land and we are thankful for the opportunity to walk together in friendship, where we will encourage and promote positive change for present and future generations.

INSTRUCTOR: Doris LaChance
PHONE: (780)539-2810 or 2234
OFFICE: A205 or C202
E-MAIL: dlachance@nwpolytech.ca
OFFICE HOURS: TBD or by appointment

CALENDAR DESCRIPTION:

This is a modularized course which covers measurement including surface area and volume, introduction to trigonometry, numbers, roots, and exponents, polynomial multiplication and factoring, relations and functions, linear functions, and system of equations.

PREREQUISITE(S)/COREQUISITE:

MA0091 or equivalent math placement test score

REQUIRED TEXT/RESOURCE MATERIALS:

Package of MA0110 modules, 2017;
Non-graphing scientific calculator (TI-30XIIS recommended)

DELIVERY MODE(S):

MA0110 is a modularized math course.

COURSE OBJECTIVES:

Introducing students to:

- SI units and imperial units and their conversion
- real life problems, using SI and imperial units, that involve surface area and volume of complex figures
- primary trigonometric ratios and their use in real life situations
- general root of a number and its use in real life situation
- powers with integral and rational exponents and basic operations using the rules for order of operations
- the concept of factoring a polynomial expressions with two, three, and four terms
- the concept of relation and how to convey it, and explain if the relation is a function
- equation of a linear function and its graphing
- the concept of system of equation and how to solve it

LEARNING OUTCOMES:

As a result of taking this course, students will gain the ability to:

- Convert measurement between SI units and imperial units
- Solve problems, using SI and imperial units, that involve the surface area and volume of general and complex 3-D object
- Solve similar right triangles using proportions, trigonometric ratios, and/or Pythagorean theorem
- Calculate prime factors, greatest common factor, and /or nth root by applying in real life situations
- Simplify expressions with integral and rational exponents using the rules for order of operations
- Factor a polynomial expression using greatest common factor, product and sum, and/or difference of two squares
- Determine the domain and range of a relation, and prove if a relation is a function
- Determine the equation of a line if a graph, a point and the slope, two points, or slope and y-intercept is given
- Graph a linear functions by constructing a table of values, determining and plotting x and y-intercepts, or using slope and y-intercepts
- Solve systems of linear equations with two unknown using graphing, substitution, or elimination

TRANSFERABILITY:

This course is listed in the Alberta Transfer Guide. It is accepted at colleges and universities in Alberta as equivalent to Math 10C. Please consult the Alberta Transfer Guide for more information. You may check to ensure the transferability of this course at the Alberta Transfer Guide main pagehttp://www.transferalberta.ca.

** Grade of D or D+ may not be acceptable for transfer to other post-secondary institutions. **Students are cautioned that it is their responsibility to contact the receiving institutions to ensure transferability.**

EVALUATIONS:

4 section tests (best 4 out of 5)	40 %
Midterm	20 %
Final Exam	40 %

**Note: Even though 50% is a passing mark, a mark of at least 65% is recommended for success in future courses.

GRADING CRITERIA:

Alpha Grade	4-point Equivalent	Percentage Guidelines		Alpha Grade	4-point Equivalent	Percentage Guidelines
A+	4.0	90-100		C+	2.3	67-69
A	4.0	85-89		C	2.0	63-66
A-	3.7	80-84		C-	1.7	60-62
B+	3.3	77-79		D+	1.3	55-59
B	3.0	73-76		D	1.0	50-54
B-	2.7	70-72		F	0.0	00-49

COURSE SCHEDULE/TENTATIVE TIMELINE:See table on last page.

STUDENT RESPONSIBILITIES:

In addition to the Student Rights and Responsibilities as set out in the Northwestern Polytechnic website, the following guidelines will maintain an effective learning environment for everyone:

- Regular attendance is expected of all students in all mathematics courses. Your success in math is directly linked to your attendance. Attendance will be taken daily.
- Students are expected to be punctual. Arrive on time for classes and remain for the duration of scheduled classes.
- Refrain from disruptive talking or socializing during class time.
- Be respectful of others regarding food or beverages in the classroom. Clean up your eating area and dispose of garbage.
- Recycle paper, bottles, and cans in the appropriate containers.
- Children are not permitted in the classrooms.
- Students are expected to notify the instructor of any extenuating circumstances.
- Students are expected to turn off cell phones during class time or in labs. No unspecified electronic devices will be allowed in exams.

STATEMENT ON PLAGIARISM AND CHEATING:

Cheating and plagiarism will not be tolerated and there will be penalties. For a more precise definition of plagiarism and its consequences, refer to the Student Conduct section of the Northwestern Polytechnic Calendar at https://www.nwpolytech.ca/programs/calendar/ or the Northwestern Polytechnic Policy on Student Misconduct: Plagiarism and Cheating athttps://www.nwpolytech.ca/about/administration/policies/index.html
**Note: all Academic and Administrative policies are available on the same page.

How to use the book:

1. Read the title of each chapter, table of contents page, and title of each section. You will observe a progressive growth of operations/concepts.
2. Read and thoroughly understand the concepts and terminology of a section.
3. Understand and do each example very carefully using the terminology.
   If difficulties arise, meet with your instructor.
4. Match each question in an exercise with the corresponding examples before the exercise. *If difficulties arise, return in your module and rework the examples.*
5. Attempt the exercise questions and check the answers before moving on to the next section.
   If difficulties arise, meet with your instructor.
6. Review the terminology of the module(s) before taking any test/exam.

Ma0110 Tentative Test Schedule

Test #	% towards final grade	Topics	Recommended Test Date	Date written	Mark
1	10%	Numbers and Roots & Exponents	January 23		
2	10%	Polynomials	February 3		
3	10%	Relations and Functions & Trigonometry	February 17		
Midterm Exam	20%	All of the Above	March 1		
4	10%	Measurement	March 15		
5	10%	Linear Functions & Systems of Equations	April 10		
Final Exam	40%	All of the Above	TBA (April 14-24) 3 hour exam		

*****All tests must be completed by April 10th.**

*****Midterm must be completed by March 8th.**