



DEPARTMENT of Science

COURSE OUTLINE – Fall 2026

MA1600 (B2, BS1): Higher Arithmetic – 3 (3-1-0) 60 Hours, 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: Brian Redmond

OFFICE: J206

OFFICE HOURS: MWF 10:00-11:00am
(or by appointment)

PHONE: 780 539-2982

E-MAIL: bredmond@nwpolytech.ca

CALENDAR DESCRIPTION:

Elementary Number Theory, Numeration Systems, Number Systems and Elementary Probability Theory are included in this course.

PREREQUISITE(S):

Mathematics 30-1 or equivalent or Mathematics 30-2 or equivalent

COREQUISITE(S):

REQUIRED MATERIALS:

Mathematics for Elementary Teachers, 10th Edition (Digital Format)

Author: Musser

ISBN: 9781118800379

Supplementary OER:

[https://math.libretexts.org/Bookshelves/Applied_Mathematics/Mathematics_for_Elementary_Teachers_\(Manes\)](https://math.libretexts.org/Bookshelves/Applied_Mathematics/Mathematics_for_Elementary_Teachers_(Manes))

Use of calculators is not permitted on tests or exams.

DELIVERY MODE(S):

REMOTE, Synchronous

Lectures: Monday and Wednesdays at 4:00 – 5:20 pm

Seminars: Fridays 11:30 am – 12:30 pm

LEARNING OUTCOMES:

A successful student will be able to demonstrate an understanding of the following concepts (among others):

- Apply various strategies to solve mathematical problems.
- Recognize and analyze number patterns, including arithmetic and geometric sequences, and utilize corresponding formulas in problem-solving.
- Understand and apply basic concepts of set theory, using Venn diagrams to depict set relationships.
- Perform counting and basic arithmetic operations in non-standard base number systems.
- Test for divisibility and primality, factor composite numbers, and calculate greatest common divisors and least common multiples using various techniques.
- Represent real numbers on a number line, perform standard operations on rational and irrational numbers, and order a set of real numbers.
- Simplify rational number expressions by following the order of operations and the field properties of rational numbers.
- Apply rules for operations with decimals.
- Convert rational numbers to terminating or repeating decimals and vice versa.
- Simplify square roots.
- Solve and simplify linear equations and inequalities.
- Solve problems involving ratios, proportions, and percentages.
- Simplify rational exponential expressions, use scientific notation, and apply absolute value.
- Perform basic probability and expected value calculations.

TRANSFERABILITY:

Please consult the Alberta Transfer Guide for more information. You may check the transferability of this course at the Alberta Transfer Guide main page

<http://www.transferalberta.alberta.ca>.

****** For courses with alpha (letter) grading, a 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:

Worksheets	24%
Tests (x3)	3x14%=42%
Final	32% (cumulative)
Attendance	2% will be given to each student who has more than 75% attendance.

GRADING CRITERIA:

Please note that most institutions will not accept your course for transfer credit **IF** your grade is **less than C-**.

Alpha Grade	4-point Equivalent	Percentage Guidelines		Alpha Grade	4-point Equivalent	Percentage Guidelines
A+	4.0	95-100		C+	2.3	67-69
A	4.0	85-94		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:

Week	Lecture Sum	Seminar Sum	Topic	Notes
Sept. 2 – Sept. 6	1	1	Problem Solving	Wed. Sept. 2 First Day of Class
Sept. 7 – Sept. 13	2	2	Problem Solving	Mon. Sept. 7 Labour Day
Sept. 14 – Sept. 20	4	3	Set Theory	
Sept. 21 – Sept. 27	6	4	Numeration Systems	



Sept. 28 – Oct. 4	7	5	Whole Numbers: Properties	Wed. Sept. 30 TR Day
Oct. 5 – Oct. 11	9	6	Whole Numbers: Operations	
Oct. 12 – Oct. 18	10	7	Wed. Oct 14: Test 1	Mon. Oct. 12 Thanksgiving
Oct. 19 – Oct. 25	12	8	Number Theory	
Oct. 26 – Nov. 1	14	9	Fractions	
Nov. 2 – Nov. 8	16	10	Decimals	
Nov. 9 – Nov. 15	Fall Break			
Nov. 16 – Nov. 22	18	11	Integers Wed. Nov. 18: Test 2	
Nov. 23 – Nov. 29	20	12	Rational and Real Numbers	
Nov. 30 – Dec. 6	22	13	Probability	
Dec. 7 – Dec. 9	24	13	Mon. Dec. 7: Test 3 Review	Wed. Dec. 9 Last Day of Classes
Dec. 12 – Dec. 19	Final Exam Period			

STUDENT RESPONSIBILITIES:

This is a challenging course. Success requires regular attendance, timely completion of assignments, and at least 10 hours of weekly study outside of class. Collaboration with classmates is encouraged, but each student must submit their own work and ensure they understand it fully

STATEMENT ON ACADEMIC MISCONDUCT:

Academic Misconduct will not be tolerated. For a more precise definition of academic misconduct and its consequences, refer to the Student Rights and Responsibilities policy available <https://www.nwpolytech.ca/about/polytechnic-leadership/policies-directory>.

****Note:** all Academic and Administrative policies are available on the same page.