NORTHWESTERN POLYTECHNIC

DEPARTMENT of Science

COURSE OUTLINE – Fall 2025

MA1600 (A2): Higher Arithmetic – 3 (3-1-0) 60 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:	James Iverson	**PHONE:**	780-539-2850
OFFICE:	C407	**E-MAIL:**	jiverson@nwpolytech.ca
OFFICE HOURS:	1:00-1:50 Monday, Tuesday, and Thursday or by appointment.		

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

REQUIRED MATERIALS:

• Gary L. Musser, Blake E. Peterson, William F. Burger, Mathematics for Elementary Teachers: A Contemporary Approach, 10th edition, Wiley

• Use of calculators is not permitted on the tests or exams.

DELIVERY MODE(S):

Lecture: A2 2:30 –3:50 T & R (Room J202)
Seminar: AS1 11:30 – 12:20 M (Room H211)
AS2 11:30 – 12:20 F (Room E305)

LEARNING OUTCOMES:

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

• Apply and identify a variety of strategies for solving (mathematical) problems

• Recognize number patterns, including arithmetic and geometric sequences, and work with corresponding formulas in problem-solving applications
• Apply basic concepts and constructions of set-theory and use Venn diagrams to depict set relationships
• Count and perform basic arithmetic operations in non-standard base number systems
• Test for divisibility and primality, factor composite numbers, calculate greatest common divisors and least common multiples using multiple techniques
• Represent a real number on a number line, perform standard operations on real numbers (rational + irrational numbers), and order a set of real numbers
• Reduce rational number expressions to simplest form following rules for the order of operations and the field properties of the rational numbers
• Apply rules for operations with decimals
• Convert a rational number to a (terminating/repeating) decimal and vice versa
• Simplify square roots
• Solve and simplify linear equations and inequalities
• Solve problems involving ratios, proportion and percent
• Simplify rational exponential expressions, use scientific notation and absolute value
• 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:

2 Tests: Each equally weighted for a total of 40%.

11 Seminars: Best 10 marks out of 11, each worth 3% for a total of 30%. This mark will be based on the work submitted during scheduled seminar time.

Final Exam: Worth 30% and will be scheduled by the registrar sometime during the finals. It is the student's responsibility to be available to write the final exam at the scheduled time. Writing early is not permitted.

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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	Notes	Topic
Sep 1-5	Classes begin Sep 3	Chapter 1
Sep 8-12		Chapter 1
Sep 15-19		Chapter 2
Sep 22-26		Chapter 3
Sep 29-Oct 3	No Class Sep 30	Chapter 4
Oct 6-10	Midterm 1	Chapter 4
Oct 13-17	No Class Oct 13	Chapter 5
Oct 20-24		Chapter 6
Oct 27-31		Chapter 7
Nov 3-7		Chapter 8
Nov 10-14	Fall Break – No Class	
Nov 17-21	Midterm 2	Chapter 9
Nov 24-28		Chapter 9
Dec 1-5		Chapter 11
Dec 8-12	Last Class Dec 11	Chapter 11

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STUDENT RESPONSIBILITIES:

The following guidelines will maintain an effective learning environment for everyone. We ask the cooperation of all students in the following areas of the classroom environment.

1. Take responsibility for your learning.
2. Attendance: Regular attendance and class participation is expected of all students and is crucial to good performance in the course.
3. Exams must be written on the days announced in class.
4. If an emergency prevents attendance on an exam day, students must contact me before the end of the exam (as soon as possible) via phone or email, students may be asked to provide documentation to justify their absence.
5. No unspecified electronic devices will be permitted during exams. This includes phones, smartwatches etc.
6. Complete daily homework. At least 1.5 hours of study per day outside of class time is required to stay caught up.
7. Behaviors that interfere with learning are not acceptable.
8. Communicate all requests regarding appointments, etc. via email.

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 at https://www.nwpolytech.ca/about/administration/policies/index.html.

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