DEPARTMENT OF SCIENCE

COURSE OUTLINE – WINTER 2021
MA1600 A3: HIGHER ARITHMETIC– 3 (3-1-0) UT 60 HOURS 15 WEEKS

INSTRUCTOR: Dallas Sawtell **PHONE:** 780-539-2989

OFFICE:

E-MAIL: dsawtell@gprc.ab.ca

OFFICE HOURS:

WINTER 2021 DELIVERY: Remote Delivery. This course is delivered remotely. There are no face-to-face or onsite requirements. Students must have a computer with a webcam and reliable internet connection. Technological support is available through helpdesk@gprc.ab.ca.
Note: GPRC reserves the right to change the course delivery.

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 TEXTS/RESOURCE MATERIALS: Gary L. Musser, Blake E. Peterson, William F. Burger, Mathematics for Elementary Teachers: A Contemporary Approach, any edition, Wiley

COURSE OBJECTIVES: This course is designed to provide students with a broader and deeper understanding of the mathematics underlying the elementary school curriculum. An emphasis will be placed on problem-solving and non-calculator based techniques.

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

TRANSFERABILITY: 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 page http://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:

Written assignments	20%
Quizzes	10%
Midterm Thurs. Feb.25	35% written and oral
Final Exam	35% written and oral

It is the student's responsibility to be available to write the final exam at the scheduled time. Writing early is not permitted.

COURSE SCHEDULE/TENTATIVE TIMELINE: TBA

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

STUDENT RESPONSIBILITIES: Students are responsible for all lecture material, seminars and readings. Students are expected to practice the material by doing problems from the textbook. No late assignments or tests will be accepted. Assignments and quizzes cannot be made up if missed. If the midterm is missed due to illness the weight will be put on the final (ie. the final will be worth 70%). If the final is missed due to illness it will be deferred (see calendar for information). A doctor's note and a phone message or email will be required in all cases.

Cellphone use is not permitted in the classroom. This includes texting. Please turn off and put away your cellphone during class. You may be asked to leave the classroom if using a cellphone.

No recording of any kind is allowed in the class, seminar or during consultation with the instructor.

Refer to the College Policy on Student Rights and Responsibilities at:

https://www.gprc.ab.ca/about/administration/policies

STATEMENT ON PLAGIARISM AND CHEATING: Refer to the Student Conduct section of the College Admission Guide at http://www.gprc.ab.ca/programs/calendar/ or the College Policy on Student Misconduct: Plagiarism and Cheating at

http://www.gprc.ab.ca/about/administration/policies/

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