GPRC

DEPARTMENT OF SCIENCE

COURSE OUTLINE – FALL 2017

MA1600 A2/B2: Higher Arithmetic – 3 (3-1-0) UT
60 Hours for 15 Weeks

INSTRUCTOR:	Dr. Shohreh Rahmati	**PHONE:**	780-539-2989
OFFICE:	C412	**E-MAIL:**	SRahmati@GPRC.ab.ca

OFFICE HOURS: R 10:00-12:00

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

PREREQUISITE: Mathematics 30-1 or equivalent or Mathematics 30-2 or equivalent

REQUIRED TEXT/RESOURCE MATERIALS:
Gary L. Musser, Blake E. Peterson, William F. Burger, Mathematics for Elementary Teachers: A Contemporary Approach 10th Edition, Wiley, 2013

DELIVERY MODE(S): Lecture: M 13:00-14:20 PM   J228
                                F 11:30-12:50 PM   J228

           Seminar: T 13:00-13:50 PM   J227 **(Sec A2)**

                                F 8:30-9:20 PM   J227 **(Sec B2)**

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:
At the end of the course, students will be able to:
- 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 (addition, subtraction, multiplication and division) 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 and rounding
- Convert a rational number to a (terminating/repeating) decimal and vice versa
- Simply square roots and approximate the square root of a number using the Babylonian method
- 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:

University of Alberta, University of Calgary, University of Lethbridge, Athabasca University Augustana Faculty, University of Alberta, Concordia University College, Grant MacEwan University, Other (transfers in combination with other courses or to other institutions)

You may also check: http://www.transferalberta.ca or http://alis.alberta.ca/ps/tsp/ta/tbi/onlinesearch.html?SearchMode=S&step=2

** 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:

•	Assignments	15%
•	Midterm 1	20%
•	Midterm 2	20%
•	Final Exam (cumulative)	45%

COURSE SCHEDULE/TENTATIVE TIMELINE: We will tentatively cover chapters 1-9 in the textbook.

GRADING CRITERIA:

Please note that most universities 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	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 required to attend classes (lectures and seminars). Assignments must be submitted on time. No late assignments will be accepted. Late or missed quizzes or tests will result in mark zero unless the student provides a valid reason. No calculators, cellphones, notes or textbooks are allowed during the exams. **Cell phones are to be turned off and not used during class.**

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.