DEPARTMENT OF SCIENCE

COURSE OUTLINE – WINTER 2020

MA1600 (A3): Higher Arithmetic – 3 (3-1-0) UT

60 Hours for 15 Weeks

INSTRUCTOR:	Dr. Mustafa Avci	**PHONE:**	780-539-2008
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OFFICE HOURS:	Mon. & Tue. 13:15-14:15		

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, any edition, Wiley

DELIVERY MODE(S):

Mode	Time	Day	Classroom
Lecture	11:30-12:50	Monday	J228
	10:00-11:20	Friday	J228
Seminar	11:30-12:20	Tuesday	J228

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:

UA*, UC*, AU*, AF, CU, CUC, KUC, GMU (From the GPRC catalog)

Please consult the Alberta Transfer Guide for more information. 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:

The final grade for this course is composed of the marks received for each of the following components:

Component	Percent /Weight	Notes
Assignments	**10%**	Collaborative group work
Worksheets	**10%**	Works delivered in the seminars
Quizzes	**15%**	On Mondays: Feb 3, March 9, April 6
Midterm	**25%**	Tuesday, February 10
Final Exam	**40%**	April 15-April 25 (including Saturdays and evenings)
Total	**100%**	

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 responsible for all lecture material, seminars and readings. Students are expected to practice the material by doing problems from the textbook. **No late worksheets will be accepted**. **Quizzes cannot be made up if missed**. **If the midterm is missed** due to illness the weight will be put on the final (**i.e. the final will be worth 65%**). **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.

Final Exam: The final exam will be written during the exam period, **between April 15 and April 25 inclusive** (including Saturdays and evenings). It is the student's responsibility to be available to write the exam at the scheduled time. Writing early is not permitted.

No calculators or formula sheets are allowed on quizzes, midterms or the final exam.

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 College Calendar at http://www.gprc.ab.ca/programs/calendar/ or the College Policy on Student Misconduct: Plagiarism and Cheating at https://www.gprc.ab.ca/about/administration/policies
Note: All Academic and Administrative policies are available at the same page.