MASKWACIS CULTURAL COLLEGE
Faculty/Department
Course Code/Title: Math 1507
Course level 1st Year
Course term/ date: Fall 2017

Course dates: Sept. 5 – Dec. 20, 2017
Instructor and Qualifications: Randy Porterfield B.A., B.Ed., P.G.D., M.Ed.
Contact Information: 780 – 585 – 0035 and/or rporterfield@mccedu.ca
Room No: 102
Hours: Tuesday and Thursday: 5:30 pm – 8:30 pm – instruction time

---

Academic Calendar description and credit hour breakdown:
Elementary number theory; number systems; numeration systems and elementary probability. This course is intended for students seeking an elementary education degree.

Required Text(s):

Mill, Charles D., Heeren, Vern E., and Hornsby, John (2012). *Mathematical Ideas* (12th edition): Addison Welsey; Toronto.

Additional Resources:

-calculator

-geometry set (compass, protractor, ruler)

-teacher generated materials

Prerequisites and Co-requisite information: Successful completion of Gr. 12 Math course.

Course Description:

Elementary number systems, numeration systems and number theory, real numbers, probability, elementary geometry, elementary statistics with measures of central tendency and, basic concepts of algebra

Course Objectives:

The course objective is to prepare elementary education students to teach mathematics to elementary students.

Learning outcomes: At the end of this course, the students will be able to

a) Perform arithmetic operations on the set of natural numbers including manipulating fractions.

b) Explain the concepts of commutative, associative, distribution, identify and inverse and identify and identity.

c) Explain the concept of the Hindu Arabic numeration system

d) Expand numbers into their base representation (expanded notation)

e) Explain the concept of division in the natural numbers and find quotient and remainder of any two natural numbers.

f) Explain the concepts of area and perimeter.

g) Find the area and perimeter of a variety of two (2) dimensional geometric figures

h) Explain and manipulate the concepts of graphs and functions

i) Define PRIME and COMPOSITE numbers

j) Determine all the factors of a given nature number

k) Find the prime factors for a given natural number using more than one method

l) Fid the greatest common factor (GCF) and least common multiple (LCM) by more than one method

m) Convert between fractions and decimal representation, explain the decimal representation of rational and irrational numbers, able to do problems in percent and decimals.

n) Solve elementary linear equations

o) Define terms from plane geometry

p) Determine the perimeter and area of regular and irregular polygons

q) Determine circumference and area of a circle

r) Define "REAL NUMBERS" and determine place value and absolute value

s) Perform basic operations using real numbers

Assignments: Specific questions will be assigned for practice and homework each class.

Assignment	**Request for**	**Percentage of total grade**	**Due date**
#1	Mid Term Exam 1	25	Oct. 3, 2017
#2	Mid Term Exam 2	25	Nov. 7, 2017
#3	Final Exam	30	Dec. 19
#4	Homework Assignment	20	No Later than: Dec. 14, 2017

Total		100%	

Grading system:

Homework assignments will be graded after each class. A cumulative total will compromise 20% of the final grade.

Grading System:

DESCRIPTOR	*GRADE POINT VALUE*	*PERCENTAGE*	*ALPHA GRADE*	*STANDING*
Outstanding performance	4.0	95 or above	A +	Honours
Excellent performance – superior performance showing comprehensive knowledge of the subject matter	4.0	85 – 94.99	A	Honours
Approaching excellent	3.7	80-84.99	A-	Honours
Exceeding good performance	3.3	77-79.99	B+	
Good performance – clearly above average performance with knowledge of subject matter generally complete	3.0	73-76.99	B	
Approaching good performance	2.7	70-72.99	B-	
Exceeding Satisfactory performance	2.3	67-69.99	C +	
Satisfactory performance basic understanding of the subject matter	2.0	63-66.99	C	**Minimal pass**
Approaching satisfactory performance	1.7	60-62.99	C-	
Insufficient prep for subsequent courses in same subject	1.3	55-59.99	D+	
Insufficient prep for subsequent courses	1.0	50-54.99	D	
Failure. Did not meet course requirements	0.0	0-49.99	F	
Incomplete	0.0	0.0	I	

Schedule of lectures and topics covered: dates of each class, topics that will be covered, any assignments due on that date, speakers attending, etc.

Date	Readings	Assignments Due (as a reminder)
Sept. 7	Introduction of instructor and course explanation **Section 1.1 –** Solving problems by Inductive Reasoning Section 1.2 – Application of Deductive Reasoning (Number Patterns)	Sept. 14
Sept. 14	**Section 4.1 –** Historical Numeration Systems -Navajo Numeration System – Base 10 and multiplicative -Cree Counting – Base 10 and multiplicative system. Review Cree Counting words and have students recognize the addition of suffixes and other words that give place value beyond the face value of the numbers. **Section 4.2 –** More Historical Numeration -Mayan, Babylon, Roman, Egyptian	Sept. 21
Sept. 21	**Section 4.3 –** Arithmetic in the Hindu-Arabic System	Sept. 28
Sept. 28	**Section 4.4 –** Conversion between number bases (2, 5, 8, 100	Oct. 12
Oct. 5	Conversion between number bases (2, 5, 10, 16)	---
Oct. 10	**REVIEW for Mid Term #1**	---
Oct. 12	**Mid Term Exam #1**	Oct. 19
Oct. 19	**Review Mid Term Exam** **Section 5.1 –** Define and use Prime Numbers, Composite Numbers and Rules of Divisibility	Oct. 26
Oct. 26	**Section 5.4 –** Greatest Common Factor and Least Common Multiple -Division Method of determining -Produce of Primes Method of determining **Section 6.1 –** -Real Numbers, Order, and Absolute Value	Nov. 9

Date	Readings	Assignments Due (as a reminder)
Nov. 2	**Section 6.2 –** -Operations, Properties, and Applications of Real Numbers	---
Nov. 7	**Review for Mid Term Exam #2**	---
Nov. 9	**Mid Term Exam #2**	Nov. 16
Nov. 16	**Review Mid Term Exam #2** **Section 6.3 –** Rational Numbers and Decimal Representations **Section 6.5 –** Applications of Decimals and Percentages	Nov. 23
Nov. 23	**Section 9.1 –** Points, Lines, Planes, and Angles	Nov. 30
Nov. 30	**Section 9.4 –** Perimeter, Area, and Circumference	Dec. 7
Dec. 7	**Fractions:** -definition; nomenclature; equivalences -conversion of improper fractions to mixed numbers -conversion of mixed numbers to improper -conversion of decimals to fractions	Dec. 14
Dec. 14	**Fractions:** -operations involving fractions	---
Dec. 19	**Final Exam**	---

Schedule of Laboratories and topics covered:

Date	Readings	Assignments Due (as a reminder)
Sept. 5	Introduction of instructor and course explanation **Section 1.1 –** Solving problems by Inductive Reasoning Section 1.2 – Application of Deductive Reasoning (Number Patterns)	Sept. 14
Sept. 12	**Section 4.1 –** Historical Numeration Systems -Navajo Numeration System – Base 10 and multiplicative -Cree Counting – Base 10 and multiplicative system. Review Cree Counting words and have students recognize the addition of suffixes and other words that give place value beyond the face value of the numbers. **Section 4.2 –** More Historical Numeration -Mayan, Babylon, Roman, Egyptian	Sept. 21
Sept. 19	**Section 4.3 –** Arithmetic in the Hindu-Arabic System	Sept. 28
Sept. 26	**Section 4.4 –** Conversion between number bases (2, 5, 8, 100	Oct. 12
Sept. 28	Conversion between number bases (2, 5, 10, 16)	---
Oct. 3	**REVIEW for Mid Term #1**	---
Oct. 5	**Mid Term Exam #1**	Oct. 19
Oct. 10	**Review Mid Term Exam** **Section 5.1 –** Define and use Prime Numbers, Composite Numbers and Rules of Divisibility	Oct. 26
Oct. 17	**Section 5.4 –** Greatest Common Factor and Least Common Multiple -Division Method of determining -Produce of Primes Method of determining **Section 6.1 –** -Real Numbers, Order, and Absolute Value	Nov. 9
Oct. 24	**Section 6.2 –**	---

Date	Readings	Assignments Due (as a reminder)
	-Operations, Properties, and Applications of Real Numbers	
Oct. 31	**Review for Mid Term Exam #2**	---
Nov. 2	**Mid Term Exam #2**	Nov. 16
Nov. 7	**Review Mid Term Exam #2** **Section 6.3 –** Rational Numbers and Decimal Representations **Section 6.5 –** Applications of Decimals and Percentages	Nov. 23
Nov. 14	**Section 9.1 –** Points, Lines, Planes, and Angles	Nov. 30
Nov. 21	**Section 9.4 –** Perimeter, Area, and Circumference	Dec. 7
Nov. 28	**Fractions:** -definition; nomenclature; equivalences -conversion of improper fractions to mixed numbers -conversion of mixed numbers to improper -conversion of decimals to fractions	Dec. 14
Dec. 5	**Fractions:** -operations involving fractions	---
Dec. 12	**Review for Final Exam**	---
Dec. 19	**Final Exam**	---

Additional Information:

Student conduct: It is expected that students are on time and ready to work. If you are going to be late, or miss a class please let the instructor know as soon as possible.

Plagiarism: is a serious Academic offence. The consequence of such an offence is termination from the program.

Missed Assignments and projects: Missed assignments can be turned in at any time up to and including the date of the final exam. Other arrangements may be made in consultation with the instructor.

Mid Term Exam Re-writes: should a student request a re-write to upgrade their mark, they will need to make arrangements with the instructor. Re-writes must be done within one week of the mid-term exam. The re-write will not be done during class time, some alternate arrangement must be made with the instructor. If a student wishes to re-write an exam, whatever mark they obtain on the rewrite (higher or lower) will be their mark. There is no rewrite for the final exam.

Academic approval by _____ President

Cultural content approved by _____ Elder Jerry Saddleback

Approvals must be obtained prior to start of classes and will be organized by the Dean of Academic Studies with a signed copy sent to the instructor.