

COLLEGE PREPARATORY MATHEMATICS

MTH09 7-5

COURSE NAME

COURSE NUMBER

TOTAL CREDIT HOURS: 85

PREREQUISITE(S): NONE

I. PHILOSOPHY/GOALS:

The objectives of this course are to increase the student's speed, accuracy and skill in performing basic arithmetic calculations and operations on algebraic expressions, as well as the solution of practical problems involving linear equations in one variable.

A study of measurement will enable the student to use metric and Imperial units of length, capacity and mass and to change from one system of units to the other.

Emphasis will be placed on developing the student's ability to state a ratio in simplified form, and to solve basic problems dealing with direct and inverse proportions.

II. STUDENT PERFORMANCE OBJECTIVES:

The basic objectives are that the student will develop an understanding of the methods studied, demonstrate a knowledge of the facts presented and show an ability to use these in the solution of problems. To accomplish these objectives, exercises are assigned. Test questions will be of near equal difficulty to questions assigned in the exercises. The level of competency demanded is the level required to obtain an overall passing average on the tests. The material to be covered is listed below.

III. TOPICS TO BE COVERED:

TIME FRAME:

- | | |
|--|----------|
| 1. Review of Whole numbers, Fractions, Decimals, Percent and their operations. | 33 hours |
| 2. Metric and Imperial systems of measurement. | 18 hours |
| 3. Ratio and Proportion. | 16 hours |
| 4. Integers, algebraic expressions and linear equations in one variable. | 18 hours |
| | <hr/> |
| | 85 hours |

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IV. LEARNING ACTIVITIES:

REQUIRED RESOURCES:

REVIEW

TEXT: BASIC MATHEMATICAL
SKILLS
- James Streeter & Gerald
Alexander. SECOND EDITION

Exercises are to be done
without the aid of a
calculator.

1.0 WHOLE NUMBERS

- | | | |
|--|-----|-------------|
| 1.1 Determining the place value of a digit
Writing a numeral in words
Writing a numeral, given its word name | 1.1 | (pg-8-9) |
| 1.2 Adding any group of whole numbers | 1.5 | (pg.24-25) |
| 1.3 Rounding a whole number to any place value
Estimating sums by rounding
Using the symbols < and > | 1.6 | (pg. 32-33) |
| 1.4 Subtracting whole numbers
Estimating differences by rounding | 1.8 | (pg. 42-44) |
| 1.5 Solving word problems involving addition and subtraction of whole numbers | 1.9 | (pg. 51-52) |
| 1.6 Multiplying any two whole numbers | 2.4 | (pg. 75-76) |
| 1.7 Multiplying by whole numbers ending in zero
Estimating products by rounding | 2.5 | (pg. 80-81) |
| 1.8 Solving word problems involving multiplication of whole numbers | 2.7 | (pg. 91-93) |

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IV. LEARNING ACTIVITIES:

REQUIRED RESOURCES:

1.9	Dividing with zero and one Dividing whole numbers by single digit numbers	3.2 3.3	(pg. 114) (pg. 119)
1.10	Dividing whole numbers by two or three digit numbers	3.4	(pg. 126)
1.11	Solving word problems involving division of whole numbers	3.7	(pg. 137-139)
1.12	Finding the average of a group of whole numbers	3.8	(pg. 143)
1.13	Using the rules for the order of operations Powers of whole numbers	2.6 2.8	(pg. 84) (pg. 98-99)
1.14	Evaluating expressions using the rules for the order of operations	3.6	(pg. 132-133)
2.0	FRACTIONS		Exercises are to be done without the aid of a calculator.
2.1	Finding the prime factors of a whole number	4.2	(pg. 158)
2.2	Finding the lowest common multiple (LCM) of a group of numbers	4.4	(pg. 169)
2.3	Identifying proper fractions, improper fractions and mixed numbers Converting from one type of fraction to another	5.2 5.3	(pg. 196-197) (pg. 201)
2.4	Simplifying fractions by reducing to lowest terms	5.5	(pg- 210-211)

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IV. LEARNING ACTIVITIES:

REQUIRED RESOURCES:

2.5	Building fractions Comparing the sizes of fractions	5.4 5.6	(pg. 204) (pg. 218-219)
2.6	Multiplying fractions	6.3	(pg. 239-241)
2.7	Dividing fractions	6.4	(pg. 250-252)
2.8	Finding the least common denominator (LCD) for a group of fractions	7.2	(pg. 266)
2.9	Adding fractions	7.3	(pg. 270-272)
2.10	Subtracting fractions	7.4	(pg. 277-278)
2.11	Adding and subtracting mixed numbers	7.5	(pg. 287-288)
2.12	Solving word problems involving fractions	7.6	(pg. 292-294)
3.0	<u>DECIMALS</u>		
3.1	Identifying place values in decimal fractions Writing decimal fractions in words Writing decimal fractions, given their word forms Comparing the sizes of decimal fractions		Exercises are to be done without the aid of a calculator. 8.1 (pg. 319-320)
3.2	Adding decimals	8.2	(pg- 324-326)
3.3	Subtracting decimals	8.3	(pg- 330-331)
3.4	Multiplying decimals	8.4 8.5	(pg- 337-339) (pg- 343-344)
3.5	Rounding a decimal to a specified decimal place Estimating decimals	8.6	(pg. 347-349)

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IV. LEARNING ACTIVITIES:

REQUIRED RESOURCES;

3.6	Dividing a decimal by a whole number	9.1	(pg. 358-360)
3.7	Dividing a decimal by a decimal	9.2	(pg. 365-366)
3.8	Converting a common fraction to a decimal Comparing the sizes of common fractions and decimals	9.4	(pg. 378-379)
3.9	Converting a decimal to a common fraction	9.5	(pg. 384)
4.0	PERCENT	Exercises are to be done <u>without</u> the aid of a calculator.	
4.1	Describing what is meant by "per cent"	11.1	(pg. 440-441)
4.2	Changing a percent to a common fraction or mixed number Changing a percent to a decimal	11.2	(pg. 445-446)
4.3	Changing a decimal or a fraction to a percent	11.3	(pg. 450-451)
4.4	Identifying and finding the rate, base and amount in an application	11.4 11.5	(pg. 455-456) (pg. 464-466)
4.5	Solving word problems involving percentage	11.6	(pg. 476-479)

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IV. LEARNING ACTIVITIES:

REQUIRED RESOURCES:

5.0 MEASUREMENT

Exercises are to be done with
the aid of a calculator

5.1 Metric prefixes

Handout assignments

5.2 Metric units of length

13.1 (pg 554-557)

5.3 Converting between metric
and imperial units of
length

5.4 Metric units of capacity

Handout assignments
13.3 (pg. 567-569)

5.5 Converting between metric
and imperial units of
capacity

5.6 Metric units of mass

13.2 (pg. 562-563)
Handout assignments

5.7 Converting between metric
and imperial units of
mass

6.0 RATIO AND PROPORTION

Exercises are to be done with
the aid of a calculator

6.1 Writing the ratio of two
or more numbers or
quantities in simplest
form

Handout assignments
10.1 (pg. 404-405)

6.2 Determining whether or
not a given proportion is
a true statement

10.2 (pg. 410-411)

6.3 Solving a proportion for
an unknown term

10.3 (pg. 417-419)

6.4 Solving word problems by
using proportions

10.4 (pg. 424-427)

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IV. LEARNING ACTIVITIES:

REQUIRED RESOURCES:

7.0	INTEGERS		Exercises are to be done <u>with</u> the aid of a calculator
7.1	Describing what is meant by an "integer" Finding the opposite and absolute value of a number	14.1	(pg. 597-598)
7.2	Adding signed numbers	14.2	(pg. 607)
7.3	Subtracting signed numbers	14.3	(pg. 611-612)
7.4	Multiplying signed numbers	14.4	(pg. 618-619)
7.5	Dividing signed numbers	14.5	(pg. 622-623)
8.0	<u>ALGEBRAIC EXPRESSIONS AND EQUATIONS</u>		Exercises are to be done <u>with</u> the aid of a calculator
8.1	Evaluating algebraic expressions, given specified values for the variables	15.1	(pg. 633-634)
8.2	Solving equations in one variable	15.2 15.3	(pg. 646) (pg. 657)
8.3	Translating a word phrase to an algebraic expression Solving applications using algebraic equations in one variable	15.4	(pg. 666-668)

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V. METHOD OF EVALUATION:

The final grade will be derived from the results of topic tests each of which will constitute 25% of the final mark. The grading system used will be as follows:

A+	=	90	-	100%
A	=	80	-	89%
B	=	65	-	79%
C	=	55	-	64%
R	=	0	-	54%

A passing grade will be based on a minimum grading of 55%.

VI. REQUIRED STUDENT RESOURCES:

TEXTBOOK: BASIC MATH SKILLS, 2nd Edition, Streeter and Alexander.

An electronic calculator will be required for topics 2, 3 and 4.

VII. ADDITIONAL RESOURCE MATERIALS:

Consult the clerk(s) in the Learning Resource Centre and/or the Learning Assistance Centre.

VIII. SPECIAL NOTES:

Students with special needs (e.g. physical limitations, visual impairments, hearing impairments, learning disabilities) are encouraged to discuss required accommodations confidentially with the instructor.

Your instructor reserves the right to modify the course as he/she deems necessary to meet the needs of students.