

SAULT COLLEGE OF APPLIED ARTS & TECHNOLOGY

SAULT STE. MARIE, ONTARIO

COURSE OUTLINE

**COURSE TITLE:** COLLEGE PREPARATORY MATHEMATICS

**CODE NO.** MTH097-5 **SEMESTER:**

**PROGRAM:** GENERAL ARTS & SCIENCE - COLLEGE PREPARATORY

**IAUTHOR:** KEITH PELEW

**DATE:** JULY 1992 **PREVIOUS OUTLINE DATED:** AUGUST 1991

**APPROVED:** DEAJJ^ 

  
DATE

COLLEGE PREPARATORY MATHEMATICS

MTH097-5

**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

COLLEGE PREPARATORY MATHEMATICS

MTH097-5

**COURSE NAME**

**COURSE NUMBER**

**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<br>Writing a numeral in words<br>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<br>Estimating sums by rounding<br>Using the symbols < and >         | 1.6 | (pg. 32-33) |
| 1.4 Subtracting whole numbers<br>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<br>Estimating products by rounding                                 | 2.5 | (pg. 80-81) |
| 1.8 Solving word problems involving multiplication of whole numbers  | 2.7 | (pg. 91-93) |

COLLEGE PREPARATORY MATHEMATICS

MTH097-5

**COURSE NAME**

**COURSE NUMBER**

**IV. LEARNING ACTIVITIES:**

**REQUIRED RESOURCES:**

1.9	Dividing with zero and one Dividing whole numbers by single digit numbers	3.2	(pg. 114)
		3.3	(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	(pg. 84)
		2.8	(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 <u>without</u> 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	(pg. 196-197)
		5.3	(pg. 201)
2.4	Simplifying fractions by reducing to lowest terms	5.5	(pg. 210-211)

COLLEGE PREPARATORY MATHEMATICS

MTH097-5

**COURSE NAME**

**COURSE NUMBER**

**IV. LEARNING ACTIVITIES:**

**REQUIRED RESOURCES:**

2.5 Building fractions Comparing the sizes of fractions	5.6	(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>		Exercises are to be done <u>without</u> the aid of a calculator.
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	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	(pg. 337-339)
	8.5	(pg. 343-344)
3.5 Rounding a decimal to a specified decimal place Estimating decimals	8.6	(pg. 347-349)

COLLEGE PREPARATORY MATHEMATICS

MTH097-5

**COURSE NAME**

**COURSE NUMBER**

**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 without 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)

COLLEGE PREPARATORY MATHEMATICS

MTH097-5

**COURSE NAME**

**COURSE NUMBER**

**IV. LEARNING ACTIVITIES:**

**REQUIRED RESOURCES:**

5.0	<u>MEASUREMENT</u>	EXERCISES
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
5.5	Converting between metric and imperial units of capacity	13.3 (pg. 567-569)
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	<u>RATIO AND PROPORTION</u>	EXERCISES
6.1	Writing the ratio of two or more numbers or quantities in simplest form	Handout assignments
6.2	Determining whether or not a given proportion is a true statement	10.1 (pg. 404-405)
6.3	Solving a proportion for an unknown term	10.2 (pg. 410-411)
6.4	Solving word problems by using proportions	10.3 (pg. 417-419)
		10.4 (pg. 424-427)

**COURSE NAME****COURSE NUMBER****IV. LEARNING ACTIVITIES:****REQUIRED RESOURCES:**7.0 INTEGERS

## EXERCISES

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 ALGEBRAIC EXPRESSIONS AND EQUATIONS

## EXERCISES

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 (pg. 646)  
15.3 (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)



COURSE NAME

COURSE NUMBER

**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.