

I. COURSE DESCRIPTION:

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.

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 proportions.

A study of measurement will enable the student to use metric and Imperial units of length, capacity and mass to change from one system of units to the other, to calculate perimeter, area and volume. An introduction to some basic descriptive statistics will allow the student to accurately interpret tables and graphs.

II. LEARNING OUTCOMES

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**TIME FRAME**

1. Whole numbers	10 hours
2. Fractions	10 hours
3. Decimals	10 hours
4. Ratio and proportion	10 hours
5. Percent	10 hours
6. Graphs	5 hours
7. Measurement	15 hours
8. Introduction to algebra	10 hours

IV. LEARNING ACTIVITIES

TOPIC NUMBER	TOPIC DESCRIPTION	REFERENCE CHAPTER ASSIGNMENTS	
1.0	Whole Numbers - Exercises are to be done without the aid of a calculator		
1.1	Determining the place value of a digit Writing a numeral in words Writing a numeral given its word name	1.1	Pages 7-9
1.2	Adding any group of whole numbers	1.4	Pages 33-36
1.3	Rounding a whole number to any place value Estimating sums by rounding Using the symbols $>$ and $<$	1.5	Pages 49-51
1.4	Subtracting whole numbers	1.7	Pages 65-69
1.5	Measuring perimeter	1.8	Pages 77-78
1.6	Multiplying any two whole numbers	2.3	Pages 107-109
1.7	Multiplying by whole numbers ending in zero Estimating products by rounding	2.4	Pages 115-117
1.8	Order of operations	2.5	Pages 121-122
1.9	Power of whole number	2.6	Pages 131-132
1.10	Measuring area and volume	2.7	Pages 139-141
1.11	Dividing with zero and one	3.2	Pages 157-158
	Dividing whole numbers by single digit numbers	3.3	Pages 163-165
1.12	Dividing whole numbers by two or three digit numbers	3.4	Pages 173-176
1.13	Using the rules for the order of operations	3.6	Pages 187-188
1.14	Finding the average of a group of whole numbers	3.7	Pages 197-198
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	Pages 219-221
2.2	Finding the lowest common multiple (LCM) of a group of numbers	4.4	Pages 237-239
2.3	Identifying proper fractions, improper fractions and mixed numbers	5.2	Pages 271-273
2.4	Equivalent fractions	5.3	Pages 277-278
2.5	Simplifying fractions to lowest terms by reducing to lowest terms	5.4	Pages 285-287

IV. LEARNING ACTIVITIES (cont'd):

TOPIC NUMBER	TOPIC DESCRIPTION	REFERENCE CHAPTER ASSIGNMENTS	
2.6	Building fractions	5.5	Pages 299-301
2.7	Multiplying fractions	6.1 6.2	Pages 309-310 Pages 315-317
2.8	Dividing fractions	6.4	Pages 343-345
2.9	Finding the least common denominator (LCD) for a group of fractions	7.2	Pages 363-364
2.10	Adding fractions	7.3	Pages 269-371
2.11	Subtracting fractions	7.4	Pages 379-382
2.12	Adding and subtracting mixed numbers	7.5	Pages 295-399
3.0	DECIMALS - Exercises are to be done without 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	Pages 425-427
3.2	Rounding decimals	8.2	Pages 431-432
3.3	Adding decimals	8.3	Pages 437-440
3.4	Subtracting decimals	8.4	Pages 447-451
3.5	Multiplying decimals	8.5	Pages 461-463
3.6	Finding the circumference and the area of a circle	8.6	Pages 473-475
3.7	Area and unit conversion	8.7	Pages 481-483
3.8	Multiplying decimals by powers of ten	8.8	Pages 487
3.9	Dividing a decimal by a whole number	9.1	Pages 501-503
3.10	Dividing a decimal by a decimal Dividing decimals by powers of 10	9.2 9.3	Pages 511-515 Pages 521-522
3.11	Converting a common fraction to a decimal	9.4	Pages 527-528
3.12	Converting a decimal to a common fraction	9.5	Pages 531-532
3.13	Square roots and the Pythagorean Theorem	9.6	Pages 543-544

IV. LEARNING ACTIVITIES (cont'd):

TOPIC NUMBER	TOPIC DESCRIPTION	REFERENCE CHAPTER ASSIGNMENTS	
4.0	RATIO AND PROPORTION - Exercises are to be done with the aid of a calculator		
4.1	Writing the ratio of two or more numbers of quantities in simplest form	10.1	Pages 565-567
4.2	Determining whether or not a given proportion is a true statement	10.2	Pages 573-575
4.3	Solving a proportion for an unknown term	10.3	Pages 585-590
5.0	PERCENT - Exercises are to be done with the aid of a calculator		
5.1	Describing what is meant by "percent" and changing a percent to a common fraction or decimal	11.1	Pages 607-610
5.2	Changing a decimal or a fraction to a percent	11.2	Pages 617-619
5.3	Identifying and finding the rate, base and amount in an application	11.3 11.4	Pages 625-627 Pages 637-639
5.4	Solving word problems involving percentage	11.5	Pages 649-653
6.0	GRAPHS		
6.1	The Number Line	12.1	Pages 677-678
6.2	Line graphs and bar graphs	12.2	Pages 683-685
6.3	Pie charts	12.3	Page 689
6.4	Creating bar graphs	12.4	Page 693
7.0	MEASUREMENT - Exercises are to be done with the aid of a calculator		
7.1	Units of the English System	13.1	Pages 701-703
7.2	Metric System, using units and prefixes	Handout	assignments
7.3	Metric units of length	13.3	Pages 721-724
7.4	Metric units of mass	13.4	Pages 729-731
7.5	Metric units of volume	13.5	Pages 735-737
7.6	Converting between metric and imperial units	Calculator exercise - Page 743	

IV. LEARNING ACTIVITIES (cont'd):

8.0	AN INTRODUCTION TO ALGEBRA - Exercises are to be done with the aid of a calculators		
8.1	Integers	14.1	Pages 753-754
8.2	Adding and subtracting signed numbers	14.2	Pages 767-771
8.3	Multiplying and dividing signed numbers	14.3	Pages 783-786
8.4	Evaluating algebraic expressions, given specified values for the variables	14.4	Pages 795-797 <i>Atofe: Exercise misabeled 14.1</i>
8.5	Solving equations in one variable	14.5	Pages 809-811

V. REQUIRED RESOURCES / TEXTS / MATERIALS:

1. Basic Math Skills. 4th Edition, Streeter and Alexander.
2. Calculator: Recommended-SHARP Scientific Calculator EL-531L. *Note: The use of some kinds of calculators may be restricted during tests.*
3. Consult the clerk(s) in the Learning Resource Centre and/or the Learning Assistance Centre for additional resource materials.

VI. EVALUATION PROCESS/GRADING SYSTEM:Pretest

You will do a pretest before beginning the course work. This pretest is divided into sections to cover all the modules in this course. If you score 80% or better on a pretest section, you will be exempted from the related module. You can complete modules that you have been exempted from; however, no test marks will be recorded for those modules. You will receive credit (CR) only.

Should pretesting indicate that you need to complete two or less modules, you will be granted a credit for the course after you have completed some supplemental work and further assessment. The professor of the course for which credit is being granted will arrange for your supplemental work and assessment.

VI. EVALUATION PROCESS/GRADING SYSTEM (cont'd):Attendance

It is your responsibility to attend all classes during the semester. Research indicates there is a high correlation between attendance and student success.

Assignments and Tests

The MTH 91 course is delivered in a student-paced mode. You work through the module at your own pace. You decide when you are ready to be evaluated on each module.

The Module topics and the text book references, including assignment pages, are listed in the "Learning Activities" section of this course outline.

You may find the method outlined below helpful as you begin to work on your course:

A. Complete the Module

1. Read through each teaching section.
2. Take notes on all main points and give examples.
3. Practise the skill using questions in the exercises provided. Complete all work showing the steps required to solve.
4. Determine whether you are ready to proceed by checking your answers in the answer keys.
5. Discuss any questions with your professor before going ahead to the next skill.
6. Complete enough questions to ensure understanding of the skill.
7. Proceed to the next skill and repeat the above instructions.

B. Complete the Review

1. Review your notes and examples as well as any appropriate "Summary of Chapters" from the text.
2. Answer all questions on appropriate Self-Tests without checking back to instructional modules.
3. Check your answers in the answer keys.
4. Review any problems from the Self-Tests with your professor to ensure understanding.

VI. EVALUATION PROCESS/GRADING SYSTEM (cont'd):

C. Write the Test

1. Let your professor know you are ready to write the test so that the testing form can be completed.
2. Arrange to write your test at the Testing Centre.
3. Write the test at the arranged time. Bring all necessary supplies.
4. Obtain results from your professor.
5. Review your test noting any areas that require further work.
6. Proceed to next module once minimum pass grade has been reached.

You will need a 60%* or better to pass a module. If you score below 60%*, you will be allowed to write a second test after further study. If you score below 60%* on the second test, you will meet with the professor to discuss the matter. The marks of all tests required to pass a module will be averaged to determine the module grade.

All module grades will be averaged to determine the final grade. If your average is below 60%*, you will still pass the course provided you have passed all the modules.

The College grading system* will be used to assign letter grades.

NOTE: * The LBS minimum grade and grading system may differ due to Ministry regulations.

METHOD OF ASSESSMENT (GRADING METHOD)

A+	Consistently outstanding	(90%-100%)
A	Outstanding Achievement	(80% - 89%)
B	Consistently above average achievement	(70% - 79%)
C	Satisfactory or acceptable achievement in all areas subject to assessment	(60% - 69%)
X or R	A temporary grade, limited to situations With extenuating circumstances, giving a student additional time to complete course requirements (See below)	
R	Repeat - The student has not achieved the objectives of the course, and the course must be repeated	(0% - 59%)
CR	Credit exemption	

VI. EVALUATION PROCESS/GRADING SYSTEM (cont'd):

An "X" grade will be issued to a student who has not completed all the required course modules in a semester, provided the student has attended 80% of the classes, has shown regular progress and will be able to complete the course within a limited amount of time.

If an "X" grade is not cleared by the specified date, it will become an "R" grade.

VII. SPECIAL NOTES:

Students with special needs (e.g. physical limitations, visual impairments, hearing impairments, learning disabilities), are encouraged to discuss required accommodations with the professor and/or contact the Special Needs Office.

Advanced Standing

Students who have completed an equivalent post-secondary course must bring relevant documents to the Coordinator, Mathematics Department:

- a copy of course outline
- a copy of the transcript verifying successful completion of the equivalent course

Note: A copy of the transcript must be on file in the Registrar's Office.

VIII. PRIOR LEARNING ASSESSMENT:

Students who wish to apply for advanced credit in the course should consult the instructor or the Prior Learning Assessment Office (E2203).

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