THE SAULT COLLEGE OF APPLIED ARTS AND TECHNOLOGY
SAULT STE. MARIE, ON

COURSE OUTLINE

Course Title: Mathematics

Code No.: MTH117-2   **Semester: One**

Program: Office Administration

Author: Math Department

Date: August 2006   **Previous Outline Dated: August 2005**

Approved: _____ _____
                        Dean   **Date**

Total Credits: 2
Prerequisite(s): None
Hours/Week: 2

Business Mathematics 2 MTH 117-2
Course Name Code No.

I. COURSE DESCRIPTION:

The student will study fractions, decimals, percentages, ratio and proportion, and the metric system and conversion of units, applying each of these to business problems. The course concludes with an introduction to statistics, including preparing and interpreting graphs.

Administrative support staff employees are required to demonstrate basic math competencies both in their jobs and in their personal lives. Tasks ranging from spreadsheet creation and analysis through to calculation of invoices require a strong foundation in mathematical principles. Regardless of the field, employment opportunities today require strong numeracy skills such as those gained in MTH 117.

Specific applications where Office Administration students/administration support personnel would be required to demonstrate mathematical proficiency include:

1. Calculating costs based on rate structures: postal, fax, telephone, etc.

2. Calculating totals (invoices, credit notes, quotations, proposals, reports, budgets, etc.) percentage discounts, interest, sales tax and GST

3. Managing a petty cash fund

4. Performing a bank reconciliation

5. Preparing spreadsheets for budgeting/tracking purposes, including creating formulas needed to perform required calculations

6. Utilizing the mathematical feature available in most word processing software packages

7. Interpreting and preparing bar graphs, line graphs and pie charts (report, presentation overheads, etc.)

8. Utilizing the mathematical features in word-processing and database programs

9. Utilizing a calculator to add, subtract, divide, and multiply

10. Handling payroll duties including calculation of CPP, UIC, income tax, etc.

11. Managing manual or computerized accounting applications

II. LEARNING OUTCOMES AND ELEMENTS OF THE PERFORMANCE:

1. Perform operations with whole numbers, decimals, and fractions, with and without the use of a calculator, and apply these operations in problem solving situations.

    Potential elements of the performance:

    - Define whole numbers.
    - Round whole numbers.
    - Estimate an answer.
    - Add, subtract, multiply, and divide whole numbers.
    - Find indicator words in application problems.
    - Use the four steps for solving application problems.
    - Read and write decimals.
    - Round decimals.
    - Add and subtract decimals.
    - Multiply and divide decimals.
    - Recognize types of fractions.
    - Convert mixed numbers to improper fractions and improper fractions to mixed numbers.
    - Write a fraction in lowest terms
    - Use the rules for divisibility.
    - Add and subtract like and unlike fractions.
    - Find the least common denominator.
    - Rewrite fractions with a common denominator.
    - Add and subtract mixed numbers.
    - Multiply and divide fractions and mixed numbers.
    - Convert decimals to fractions and fractions to decimals.

2. Apply concepts of percentage to solve problems.

    Potential elements of the performance:
    - Write a decimal and fraction as a percent and a percent as a decimal and fraction.
    - Write a fractional percent as a decimal.
    - Know the three quantities of a percent problem.
    - Use the basic percent formula to solve for part, base, and rate.
    - Recognize the terms associated with base, rate, and part.
    - Find the percent of change.
    - Identify an increase or a decrease problem.
    - Solve application problems.

II. LEARNING OUTCOMES AND ELEMENTS OF THE PERFORMANCE (continued):

3. Apply the concepts of simple and compound interest to solve problems.

   Elements of the performance:

   - Solve for simple interest.
   - Calculate maturity value.
   - Determine the number of days in a loan or investment period.
   - Define the basic terms used with notes.
   - Find the due date of a note.
   - Find the principal, rate, and time using the simple interest formula.
   - Decide on a period of compounding.
   - Use the formulas and tables to find compound amount and compound interest.
   - Define the terms *future value* and *present value*.
   - Use tables to calculate present value.

4. Use and convert units of measure.

   Potential elements of the performance:

   - Use the International System of Units (SI).
   - Evaluate and use the SI prefixes.
   - Convert from one SI (metric) unit to another.
   - Convert a quantity from a metric unit to a British unit or vice versa using a table of conversion.
   - Convert international currency amounts to Canadian dollars, or vice versa.
   - Use units of measure in applied situations.

5. Present and interpret quantitative information using descriptive statistics techniques.

   Potential elements of the performance:

   - Construct and analyze a frequency distribution.
   - Construct and analyze bar, line, and circle graphs.
   - Find the mean, median and mode of a list of numbers.
   - Calculate a weighted mean.

III. TOPICS TO BE COVERED: **Approximate Time Frame**

1. Whole Numbers, Fractions, and   8 hours
   Decimals
2. Percents   8 hours
3. Interest Calculations   6 hours
4. Metric Conversion   6 hours
5. Statistics, Tables and Graphs   4 hours

IV. REQUIRED RESOURCES / TEXTS / MATERIALS:

1. Text: Practical Business Math PROCEDURES, 1st Canadian Edition, (2004), Slater and Skliarenko, McGraw-Hill.
2. Calculator: (Recommended) SHARP Scientific Calculator EL-531. *The use of some kinds of calculators, cell phones, and other electronic devices may be restricted during tests.*

V. EVALUATION PROCESS/GRADING SYSTEM:

There will be four tests each worth 25% of the final grade.

Test 1 will cover Topic 1.
Test 2 will cover Topic 2.
Test 3 will cover Topic 3.
Test 4 will cover Topics 4 & 5.

The following semester grades will be assigned to students:

Grade	Definition		*Grade Point Equivalent*
A+		90 – 100%	4.00
A		80 – 89%	
B		70 - 79%	3.00
C		60 - 69%	2.00
D		50 – 59%	1.00
F (Fail)		49% and below	0.00
CR (Credit)	Credit for diploma requirements has been awarded.		
S	Satisfactory achievement in field /clinical placement or non-graded subject area.		
U	Unsatisfactory achievement in field/clinical placement or non-graded		

	subject area.
X	A temporary grade limited to situations with extenuating circumstances giving a student additional time to complete the requirements for a course.
NR	Grade not reported to Registrar's office.
W	Student has withdrawn from the course without academic penalty.

VI.   SPECIAL NOTES:

Special Needs:
If you are a student with special needs (e.g. physical limitations, visual impairments, hearing impairments, or learning disabilities), you are encouraged to discuss required accommodations with your professor and/or the Special Needs office. Visit Room E1101 or call Extension 2703 so that support services can be arranged for you.

Retention of Course Outlines:
It is the responsibility of the student to retain all course outlines for possible future use in acquiring advanced standing at other postsecondary institutions.

Plagiarism:
Students should refer to the definition of "academic dishonesty" in *Student Rights and Responsibilities*. Students who engage in "academic dishonesty" will receive an automatic failure for that submission and/or such other penalty, up to and including expulsion from the course/program, as may be decided by the professor/dean. In order to protect students from inadvertent plagiarism, to protect the copyright of the material referenced, and to credit the author of the material, it is the policy of the department to employ a documentation format for referencing source material.

Substitute course information is available in the Registrar's office.

VII.   PRIOR LEARNING ASSESSMENT:

Students who wish to apply for advanced credit in the course should consult the professor. Credit for prior learning will be given upon successful completion of a challenge exam or portfolio.

VIII.   DIRECT CREDIT TRANSFERS:

Students who wish to apply for direct credit transfer (advanced standing)
should obtain a direct credit transfer form from the Dean's secretary.
Students will be required to provide a transcript and course outline related
to the course in question.