SAULT COLLEGE
of Applied Arts and Technology
Sault Ste. Marie

COURSE OUTLINE

MATHEMATICS

Secretarial Mathematics
MTH 117- 4

r 6 V i S 6 C i   June, 1981 by B. Maki

Secretarial Matnenatics

MTK 117-3

MacLaughlin & MacLaughlin - Machine Applications for Business
                          Problems

                          Workbook for the above
                          Sir Isaac Pitir.an Ltd.

Secretarial Mathematics

MTH 117-3

GENERAL OBJECTIVES:

1. Develop the ability to solve mathematical problems common
   to most businesses quickly and accurately.

2. Provide background material essential to the important
   principles underlying a business activity.

3. Reviev; and re-infcrce algebraic methods used to solve every-
   day business problems.-

4. Examine in detail the following topics:

   frciCtions and decimal fractions
   percentage
   financial statement analysis
   buying goods
   selling goods
   simple interest
   simple discount
   compound interest and discount
   payroll preparation

Use of mini-calculators is almost, essential in working the problems.
The teacher should recommend that the students buy calculators with
square root keys.

Fractions and Decimal Fractions

<u>SPECIFIC OBJECTIVES</u>:

The student shall be able to:

1. define "denominator"
2. define "numerator"
3. define "proper fraction"
4. define "improper fraction"
5. define "mixed number"
6. reduce fractions to lower terms
7. reduce fractions to higher terms
8. reduce fractions (improper) to mixed numbers
9. reduce mixed numbers to improper fractions
10. find common denominator for 2 or more fractions
11. find "lowest" common denominator for two *or* more fractions
12. add 2 or more fractions (proper, improper, or mixed no.)
13. subtract proper, improper fractions or mixed numbers
14. multiply two or more common fractions
15. multiply two or more mixed numbers
16. multiply common fractions by mixed numbers
17. divide common fractions by common fractions
18. divide common fractions by mixed numbers
19. divide mixed numbers by common fractions
20. define pure decimal fraction
21. define mixed decimal fraction
22. convert common fractions to equivalent decimal fractions
23. convert decimal fractions to equivalent common fractions
24. convert mixed numbers to decimal fractions
25. convert decimal fractions to mixed numbers
26. add 2 or more decimal fractions
27. subtract.decimal fractions
28. multiply 2 or more decimal fractions
29. divide decimal fractions bv decimal fractions

TOPIC #2

Percentage

SPECIFIC OBJECTIVES:

The student shall be able to:

1. clearly explain by definition and/or example the concept of percentage
2. convert percents to decimals
3. convert percents to fractions
4. convert decimals to percents
5. convert fractions to percents •
6. define BASE (B)
7. define RATE (R)
8. define Percentaqe (P)
9. state relationship between BASE, RATE, and PERCENTAGE
10. calculate PERCENTAGE when BASE and RATE are known
11. calculate RATE when PERCENTAGE and BASE are known
12. calculate BASE when PERCENTAGE and RATE are known
13. define AMOUNT
14. define DIFFERENCE
15. state relationship between AMOUNT, BASE, and PERCENTAGE
16. state relationship between AMOUNT, EASE, and RATE
17. calculate AMOUNT when BASE and PERCENTAGE are known
18. calculate AMOUNT when BASE and RATE are known
19. state relationship between DIFFERENCE, BASE, and PERCENTAGE
20. state relationship between DIFFERENCE, BASE and RATE
21. clearly explain by definition and/cr example the concept of "percent of i
22. clearly exolain by definition and/or example the concept of "percent of d
23. calculate DIFFERENCE when BASE and PERCENTAGE are known
24. calculate DIFFERENCE when BASE and RATE are known
25. calculate BASE when AMOUNT and RATE OF INCREASE are known
26. calculate BASE when DIFFERENCE and RATE OF DECREASE are known
27. calculate RATE OF INCREASE when BASE and AMOUNT are known
28. calculate RATE OF DECREASE when BASE and DIFFERENCE are known

Buying Goods

SPECIFIC OBJECTIVES:

The student shall be able to:

1. define list price
2. define net purchase price
3. define trade discount
4. explain clearly by definition and/or example the concept of series tra discounts (sometimes *referred* to as chain discounts)
5. define "net price factor"
6. calculate net purchase price using series discounts
7. calculate net price factor
8. calculate net purchase price using net price factor
9. calculate net purchase price using net price factor table provided
10. define cash discount
11. identify terms as presented on suppliers invoice and calculate net cos'
12. define "end of month" dating
13. define "extra" dating
14. define "receipt of goods" dating
15. identify partial payments
16. calculate credit received on partial payments within the cash discount
17. calculate list price when cost and discounts are known   ^

Buying Goods

SPECIFIC OBJECTIVES:

The student shall be able to:

1. define list price
2. define net purchase price
3. define trade discount
4. explain clearly by definition and/or example the concept of series tra discounts (sometimes referred to as chain discounts)
5. define "net price factor"
6. calculate net purchase price using series discounts
7. calculate net price factor
8. calculate net purchase price using net price factor
9. calculate net purchase price using net price factor table provided
10. define cash discount
11. identify terms as presented on suppliers invoice and calculate net cos
12. define "end of month" dating
13. define "extra" dating
14. define "receipt of goods" dating
15. identify partial payments
16. calculate credit received on partial payments within the cash discount
17. calculate list price when cost and discounts are known

Selling Goods

SPECIFIC OBJECTIVES:

The student shall be able to:

1. define markup
2. clearly explain by definition and/or example the difference between markup based on cost and markup based on selling price
3. calculate markup based on cost price
4. calculate markup based on selling price
5. find the selling price when cost and percent of markup on cost is known
6. find the percent of markup on selling price when cost and selling price are
7. find the percent of markup on cost when the cost and the selling price are k
8. find the cost when the selling pirce and the percent of markup on the sell in price are known
9. find the selling price when the cost and the percent of markup on selling pr are known
10. find the cost price when the selling price and the percent of markup on cost are known
11. clearly explain by definition and/or example the relationship between equiva markups based on cost price and selling price
12. calculate an-equivalent markup based on cost when given a markup based on selling price
13. calculate an equivalent markup based on selling price when given a markup be
   . on cost

Simple Interest

SPECIFIC OBJECTIVES:

The student shall be able to:

1. define interest
2. define promissory note
3. define principle
4. define date of note
5. define maturity date
6. define time of note
7. define rate of interest
8. define maturity value
9. state relationship between interest, principle, rate and time
10. name the three methods used to calculate the time on anv cred t instru
11. clearly explain by definition and/or example the diff erence between ex
    interest, ordinary interest and bankers interest
12. calculate exact interest
13. calculate ordinary interest
14. calculate bankers interest
15. clearly explain the 5%, 60 day method of calculating simple interest
16. clearly'explain the 4%, 90 day method of calculating simple interest
17. calculate simple interest using the 6%, 60 day method
18. calculate simple interest using the 4%, 90 day method
19. verify decimal accuracy of interest calculations using either the *6%*
    method *or* the 4%, 90 day method of approximation
20. state the relationship between maturity value, principle, and interes
21. calculate maturity value
22. calculate date of maturity
23. calculate time when only date of note and due date are known
24. calculate rate when interest, principle and time are given
25. calculate' time when interest, principle and rate are given
26. calculate principle when interest, rate, and time are given

SECRETARIAL !',A7HEI'iAT !CS
KTK 117-3

UNIT NO.	WEEKS	TOPIC

1   1-3   Fractions & Percentage

-addition, subtract, multiplication and division of fi
-decimal equivalents
-percentage of a number
-short methods involving percentage
-finding the percentage one number is of another numbe

Simple Interest

-find the interest
-finding the principal
-finding the rate
-finding the time
-promissory notes
• -bank loans
-personal instalment loans

TEST #1

2   4-5   Income Tax

-personal exemptions
-calculating Canada Pension refund
-calculating Unemployment Insurance refund
-allowable deductions
-chartible donations and medical expanses
-determining taxable income
-Ontario Tax credit
-determining income tax payable

TEST #2

3   6-8   Mathematics for Merchandise

-wholesale price, retail price and profit
-trade discounts
-single discount equivalent
-cash discounts
-commission
-brokerage

Family Finance

-budgeting
-borrowing and credit
-home ownership
-life, property, and automobile insurance
-car and maintenance expenses

TEST H2

TOPIC *46*

Simple Discount

SPECIFIC OBJECTIVES:

The student shall be able to:

1. define discount
2. define discount rate
3. define date of disccunt
4. define term of discount
5. define proceeds
6. state relationship between maturity value, discount rate, term of discount and proceeds
7. calcualte discount
8. calculate proceeds
9. state clearly the difference between true discount and bank discount
10. calculate maturity value when proceeds, term of discount and discount rate are given

UNIT NO.	WEEKS	TOPIC
4.	9-12	Systems Internationa! (metric measurement)

-temperature
-linear measurement
-area measurement
-weight measurement
-volume measurement

TEST =4

5	13-14	Taxation_&_Insurance

-property and local improvement taxes
-commercial property and business taxes
-provincial and federal taxes
-indirect taxation

Stocks and Bonds

-description of various types of stocks
-operation of stock exchange
-buying and selling stocks
-yield on stock ownership
-description of bonds
-purchase and sale of bonds
-calculating the yield on bonds