SAULT COLLEGE
of Applied Arts and Technology
Sau It Ste. Marie

COURSE OUTLINE

MATHEMATICS
SECRETARIAL MATHEMATICS
MTH 117-3

r 6 V i S 6 C l June, 1979 by B. Maki

Secretarial Mathematics

MTH 117-3

TEXT:

MacLaughlin & MacLaughlin - Machine Applications for Business Problems

- Workbook for the above
Sir Isaac Pitman Ltd.

Secretarial Mathematics

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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. Review and re-inforce algebraic methods used to solve every-day business problems.

4. Examine in detail the following topics:

   a) fractions and decimal fractions
   b) percentage
   c) financial statement analysis
   d) buying goods
   e) selling goods
   f) simple interest
   g) simple discount
   h) compound interest and discount
   i) 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.

TOPIC *n*

Fractions and Decimal Fractions

SPECIFIC OBJECTIVES:

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 tv/o 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. subtractdecimal fractions
28. multiply 2 or more decimal fractions
29. divide decimal fractions by 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 Percentage (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,'BASE, 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/or example the concept of "percent of incre
22. clearly explain by definition and/or example the concept of "percent of decre
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 "ECREASE are known
27. calculate RATE OF INCREASE when BASE and A O N T are known
28. calculate RATE OF DECREASE when BASE and DIFFERENCE are known

TOPIC •⁄?

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 trade 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 cost
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 period
17. calculate list price when cost and discounts are known

TOPIC #4

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 ki
7. find the percent of markup on cost when the cost and the selling price are km
8. find the cost when the selling pirce and the percent of markup on the selling price are known
9. find the selling price when the cost and the percent of markup on selling pri> **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 equival 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 bas on cost

TOPIC #5

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 any credit instrument
11. clearly explain by definition and/or example the difference between exact interest, ordinary interest and bankers interest
12. calculate exact interest
13. calculate ordinary interest
14. calculate bankers interest
15. clearly explain the 6%, 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%, 60 day method or the 4%, 90 day method of approximation
20. state the relationship between maturity value, principle, and interest
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

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TOPIC § 6

Simple Discount

SPECIFIC OBJECTIVES:

The student shall be able to:

1. define discount
2. define discount rate
3. define date of discount
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

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UNIT NO.	WEEKS	TOPIC
1 •	1-3	Fractions & Percentage
		-addition, subtract, multiplication and division of fractions -decimal equivalents -percentage of a number -short methods involving percentage -finding the percentage one number is of another number
		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 expc-nses -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 #3	

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UNIT NO.	WEEKS	TOPIC
4^	9-12	Systems International (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