

SAULT COLLEGE OF APPLIED ARTS & TECHNOLOGY

SAULT STE. MARIE, ONTARIO

COURSE OUTLINE

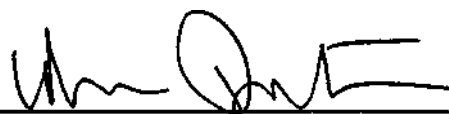
COURSE TITLE: MATHEMATICS OF FINANCE

CODE NO.: MTH 114-4 SEMESTER: II

PROGRAM: BUSINESS - GENERAL & ACCOUNTING

AUTHOR: J. GLOWACKI

DATE: AUGUST 1993 PREVIOUS OUTLINE DATED: AUGUST 19 92

APPROVED:  _____ DATE •^ .pMolsa

DEAN, SCHOOL OF SCIENCES &
NATURAL RESOURCES

MATHEMATICS OF FINANCE

MTH 114-4

COURSE NAME

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TOTAL CREDIT HOURS: 64

PREREQUISITE(S): MTH 111-5

I. PHILOSOPHY/GOALS:

The development of the students' knowledge and skill in computation of financial problems relating to business and the skill in using interest formulas and forming accurate answers, which is essential to this course.

The goals of this course are, first to show that mathematics does play a most important role in the development and understanding of the various fields of business and, secondly, to ensure that students acquire the mathematical and critical thinking skills necessary to analyze and solve business problems.

II. TERMINAL PERFORMANCE OBJECTIVES:

After studying the indicated topics, the student should be able to perform the following objectives:

Topic 1

1. Construct time diagrams to assist in problem solving.
2. Manipulate the simple interest formulae to find the exact simple interest, principal, rate, time or maturity value.
3. Compute equivalent values for specified focal dates.
4. Understand the terms related to a promissory note.
5. Determine the maturity value of promissory notes.
6. Discount promissory notes using simple discount.

Topic 2

1. Use the compound amount formula to compute future values.
2. Use the present value formula to compute present values.
3. Solve problems involving the use of equations of value.
4. Find the compound amount and discounted values for functional compounding periods.
5. Compute nominal and effective interest rates, number of conversion periods.
6. Find equated dates, equivalent rates and solve problems involving continuous compounding.

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II. TERMINAL PERFORMANCE OBJECTIVES: (continued)

Topic 3

1. Compute the amount and present value of ordinary annuities.
2. Find the periodic rent, term, and interest rate of ordinary annuities.
3. Compute the amount and present value of annuities due.
4. Find the periodic rent, term and interest rate of annuities due.
5. Compute the present value, periodic rent, term, and interest rate for deferred annuities.
6. Find the present value of simple perpetuities.

Topic 4

1. Compute the amount, present value, periodic payment, term, and interest rate of ordinary general annuities and general annuities due.
2. Determine present value, periodic payment, term and interest rate of deferred general annuities.
3. Determine the present value of general perpetuities.
4. Make computations associated with amortization of debts to determine the periodic payments and outstanding balance.
5. Make computations associated with sinking funds to determine the periodic payments and accumulated balance.

Topic 5

1. Determine the purchase price of bonds bought on or between interest dates.
2. Determine the premium or discount on the purchase of a bond.
3. Calculate the yield rate for bonds purchased on the market.

III. TOPICS TO BE COVERED:

TIME FRAME (hours)

- | | |
|---|----|
| 1. Simple Interest and Promissory Notes | 12 |
| 2. Compound Interest | 14 |
| 3. Simple Annuities | 18 |
| 4.(a) General Annuities | 14 |
| 5.(b) Amortization and Sinking Funds | |
| 6. Bond Valuation | 6 |

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TOPIC NO,	PERIODS	TOPIC DESCRIPTION	REFERENCES
	12	Simple interest, graphical presentations promissory notes, simple and bank discount	p. 236-295
	14	Compound interest - amount and present value, discounting promissory notes, special problems	p. 298-379
	18	Ordinary simple annuities Annuities due Deferred annuities Perpetuities	p. 380-481
	14	General annuities-deferred General annuities-present value Amortization and sinking funds	p. 482-590
	6	Bond valuation - purchase price Premium and discount book value yield rate	p. 591-636

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IV. EVALUATION METHODS:

The final mark will be based on four unit tests, each representing 25% of the final mark. Test questions will be of near equal difficulty to questions assigned in the exercises.

Grading: A+ = 90-100%
A = 80-89%
B = 65-79%
C = 55-64%

A passing grade will be based on a minimum grading of 55%. Students obtaining a grade of 45-54% may be allowed to write a rewrite test. However, only students who have attended at least 80% of the math classes will be considered for a rewrite test.

V. REQUIRED STUDENT RESOURCES:

1. TEXTBOOK: Contemporary Business Math; S.A. Hummelbrunner
- 3rd Edition (Prentice-Hall)
2. Calculator: Recommended; SHARP Scientific calculator EL - 531G

VI. 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.