SAULT COLLEGE OF APPLIED ARTS AND TECHNOLOGY

SAULT STE. MARIE, ONTARIO



COURSE OUTLINE

COURSE TITLE: Mathematics of Finance

CODE NO.: MTH114-4 SEMESTER: One

PROGRAM: Business, General Accounting

AUTHOR: Mathematics Department

DATE: June 2015 **PREVIOUS OUTLINE DATED:** June 2014

APPROVED: "Colin Kirkwood" May/15

DEAN DATE

TOTAL CREDITS: 4

PREREQUISITE(S):

HOURS/WEEK: 4

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I. COURSE DESCRIPTION:

This course develops students' skills required to compute financial data relating to business, accounting and business finance. Students will learn to use and apply formulae to solve a variety of financial problems.

This course provides students with the mathematical knowledge and skill that is required to make financial calculations analyze financial data and problems and apply critical thinking when solving business problems.

II. LEARNING OUTCOMES

Upon successful completion of this course, students will demonstrate the ability to:

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. Define and utilize 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 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 fractional compounding periods.
- 5. Compute nominal and effective interest rates, and number of conversion periods.

Topic 3:

- 1. Compute the future and present values of ordinary simple annuities.
- 2. Find the payment and the term of ordinary simple annuities.

II. LEARNING OUTCOMES (Continued):

Topic 4:

- 1. Compute the future and present values of ordinary general annuities.
- 2. Compute the future and present values of simple annuities due.
- 3. Compute the future and present values of general annuities due.
- 4. Compute the present value for deferred annuities.
- 5. Determine present value of deferred general annuities.
- 6. Find the present value of simple perpetuities.
- 7. Determine the present value of general perpetuities.
- 8. Find the periodic rent of ordinary general annuities, annuities due, deferred annuities, and perpetuities.

Topic 5:

- 1. Construct amortization schedules.
- 2. Make computations associated with amortization of debts to determine the periodic payments and outstanding balance.

Topic 6:

- 1. Determine the purchase price of bonds bought on an interest date.
- 2. Calculate the yield rate for bonds purchased on the market.
- 3. Construct sinking fund schedules.
- 4. Make computations associated with sinking funds to determine the periodic payments and accumulated balance.

III. TOPICS:

Topics to be Covered	Approximate Time Frame
Simple Interest and Promissory Notes	12 hours
2. Compound Interest	11 hours
3. Ordinary Annuities	8 hours
4. Other Annuities	12 hours
5. Amortization	6 hours
6. Bond Valuation and Sinking Funds	4 hours

IV. REQUIRED RESOURCES / TEXTS / MATERIALS:

- 1. Textbook: Pearson Custom: Mathematics of Finance
- 2. Calculator: <u>(Recommended)</u> SHARP **Scientific** Calculator (with fraction button "a b/c" as a primary function). 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 five tests each worth 20% 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 Topic 4.

Test 5 will cover Topics 5 & 6.

The following semester grades will be assigned to students:

		Grade Point Equivalent
Grade	Definition	•
A+	90 – 100%	4.00
Α	80 – 89%	4.00
В	70 - 79%	3.00
С	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.	

If a faculty member determines that a student is at risk of not being successful in their academic pursuits and has exhausted all strategies available to faculty, student contact information may be confidentially provided to Student Services in an effort to offer even more assistance with options for success. Any student wishing to restrict the sharing of such information should make their wishes known to the coordinator or faculty member.

VI. SPECIAL NOTES:

Attendance:

Sault College is committed to student success. There is a direct correlation between academic performance and class attendance; therefore, for the benefit of all its constituents, all students are encouraged to attend all of their scheduled learning and evaluation sessions. This implies arriving on time and remaining for the duration of the scheduled session.

VII. COURSE OUTLINE ADDENDUM:

1. Course Outline Amendments:

The faculty member reserves the right to change the information contained in this course outline depending on the needs of the learner and the availability of resources.

2. 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.

3. Prior Learning Assessment:

Students who wish to apply for advance credit transfer (advanced standing) should obtain an Application for Advance Credit from the program coordinator (or the course coordinator regarding a general education transfer request) or academic assistant. Students will be required to provide an unofficial transcript and course outline related to the course in question. Please refer to the Student Academic Calendar of Events for the deadline date by which application must be made for advance standing.

Credit for prior learning will also be given upon successful completion of a challenge exam or portfolio. Student Services, located in E1101, can provide information regarding the Prior Learning Assessment and Recognition policy or it can be viewed on the student portal.

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

4. Accessibility Services:

If you are a student with a disability (e.g. physical limitations, visual impairments, hearing impairments, or learning disabilities), you are encouraged to discuss required accommodations with the Accessibility Services office. Visit Room E1101, call Extension 2703, or email studentsupport@saultcollege.ca so that support services can be arranged for you.

5. Communication:

The College considers **Desire2Learn (D2L)** as the primary channel of communication for each course. Regularly checking this software platform is critical as it will keep you directly connected with faculty and current course information. Success in this course may be directly related to your willingness to take advantage of this Learning Management System (LMS) communication tool.

6. Academic Dishonesty:

Students should refer to the definition of "academic dishonesty" in *Student Code of Conduct*. Students who engage in academic dishonesty will be issued a sanction under the Student Code of Conduct which could lead to and include expulsion from the course/program. In order to protect students from inadvertent plagiarism, to protect the copyright of the material referenced, and to credit the author of the material, students must use a documentation format for referencing source material.

7. Tuition Default:

Students who have defaulted on the payment of tuition (tuition has not been paid in full, payments were not deferred or payment plan not honoured) as of the first week of November (fall semester courses), first week of March (winter semester courses), or first week of June (summer semester courses) will be removed from placement and clinical activities due to liability issues. This may result in loss of mandatory hours or incomplete course work. Sault College will not be responsible for incomplete hours or outcomes that are not achieved or any other academic requirement not met as of the result of tuition default. Students are encouraged to communicate with Financial Services with regard to the status of their tuition prior to this deadline to ensure that their financial status does not interfere with academic progress.

8. Student Portal:

The Sault College portal allows you to view all your student information in one place. **mysaultcollege** gives you personalized access to online resources seven days a week from your home or school computer. Single log-in access allows you to see your personal and financial information, timetable, grades, records of achievement, unofficial transcript, and outstanding obligations, in addition to announcements, news, academic calendar of events, class cancellations, your learning management system (LMS), and much more. Go to https://my.saultcollege.ca.

9. Audio and Video Recording Devices in the Classroom:

Students who wish to use recording devices in the classroom will seek permission of the faculty member before proceeding to record instruction. Students with disabilities who require audio or visual recording devices in the classroom as an accommodation will receive approval from their counsellor once the Audio and Video Recording Devices in the Classroom Policy has been reviewed by the student. Recorded classroom instruction will be used only for individual academic use and will not be used for any other purpose. Recordings may only be used for individual study of materials presented during class and may not be published or distributed. Intentional misuse of audio and video recordings or intentional misrepresentation when requesting the use of a device for recording shall constitute a violation of this policy and laws protecting intellectual property.