# 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:	August 2013	PREVIOUS OUT	LINE DATED:	August 2012
APPROVED:	2013	"Colin Kirkwood"	,	June/13
TOTAL CREDITS:	4	DEAN		DATE
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
1. 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: Hummelbrunner, S.A., & Coombs, K. S. (2012). *Contemporary Business Mathematics with Canadian Applications*, 9<sup>th</sup> Edition. Toronto: Pearson Canada.
- 2. Calculator: <u>(Recommended)</u> SHARP Scientific Calculator EL-531(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	Definition	Grade Point Equivalent	
A+	90 – 100%	4.00	
А	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.
Х	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:

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

- <u>Retention of Course Outlines</u>: 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.

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 your professor and/or the Accessibility Services office. Visit Room E1101 or call Extension 2703 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. Plagiarism:

Students should refer to the definition of "academic dishonesty" in *Student Code of Conduct.* 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.

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 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 <u>https://my.saultcollege.ca</u>.

9. Electronic Devices in the Classroom:

Students who wish to use electronic devices in the classroom will seek permission of the faculty member before proceeding to record instruction. With the exception of issues related to accommodations of disability, the decision to approve or refuse the request is the responsibility of the faculty member. Recorded classroom instruction will be used only for personal use and will not be used for any other purpose. Recorded classroom instruction will be destroyed at the end of the course. To ensure this, the student is required to return all copies of recorded material to the faculty member by the last day of class in the semester. Where the use of an electronic device has been approved, the student agrees that materials recorded are for his/her use only, are not for distribution, and are the sole property of the College.