NORTHWESTERN POLYTECHNIC

DEPARTMENT OF BUSINESS AND OFFICE ADMINISTRATION

COURSE OUTLINE – Winter 2023

BA1050 (B3/VC): Business Mathematics – 3 (3-0-1) 60 Hours for 15 Weeks

Northwestern Polytechnic acknowledges that our campuses are located on Treaty 8 territory, the ancestral and present-day home to many diverse First Nations, Metis, and Inuit people. We are grateful to work, live and learn on the traditional territory of Duncan's First Nation, Horse Lake First Nation and Sturgeon Lake Cree Nation, who are the original caretakers of this land.

We acknowledge the history of this land and we are thankful for the opportunity to walk together in friendship, where we will encourage and promote positive change for present and future generations.

INSTRUCTOR: Amy Rawluk, CPA   **PHONE:** 780-539-2873
OFFICE: C413   **E-MAIL:** ARawluk@nwpolytech.ca
OFFICE HOURS: Tuesday & Thursday, 11:30 AM - 1:00 PM

CALENDAR DESCRIPTION: This course emphasizes a range of mathematical calculations used in business. Students will be introduced to simple interest, compound interest, annuities, amortization and sinking funds. Practical applications will be emphasized in the course.

PREREQUISITE(S): Math 20-1 or 20-2 with 60% or Math 30-1 or Math 30-2 with 50%.

REQUIRED TEXT/RESOURCE MATERIALS: Business Mathematics in Canada, Tenth Edition (2020). McGraw-Hill Ryerson. Jerome and Worswick.

All students must have access to Connect. You must have an access code in order to gain access to the online resources. McGraw-Hill Connect™ is a web-based assignment and assessment platform that gives students the means to better connect with their coursework, and with the important concepts that they will need to know for success now and in the future. If you have purchased a used book, you will have to purchase an access code separately. Instructions to do this are available in the Registration Module.

Sharp EL - 738 Calculator

DELIVERY MODE(S):
On-campus (face-to-face) – This type of course will be delivered on campus in a specific location which will be indicated on the student timetable. Students are expected to fully attend in person.
Synchronous (remote) - This type of course will be delivered remotely through video-conferencing technologies (i.e. Zoom). There are set class times and students are expected to attend remote class sessions.

COURSE OBJECTIVES: The primary objective of this course is to increase the student's knowledge and skill in the solution of practical financial and mathematical problems encountered in the business community.

LEARNING OUTCOMES:

<u>Simple Interest</u>
- The student will be able to explain the concept of simple interest.
- The student will be able to calculate the amount of interest, principal, time, interest rate, and maturity value of investments and loans.
- The student will be able to calculate equivalent payments that replace another payment or a series of payments.
- The student will be able to explain the use of simple interest in business applications such as demand loans, promissory notes, treasury bills, commercial papers, and discounting.

<u>Compound Interest</u>
- The student will be able to explain the concept of compound interest and how it differs from simple interest.
- The student will be able to calculate the future value and present value of investments and loans in compound interest applications using both algebraic and financial calculator methods.
- The student will be able to calculate equivalent payments that replace another payment or a set of payments.
- The student will be able to calculate the effective and equivalent interest rates for nominal interest rates.

<u>Annuities</u>
- The student will be able to identify annuities based on a payment date and compounding period.
- The student will be able to calculate the future value and present value of ordinary simple annuities.
- The student will be able to calculate the future value and present value of ordinary general annuities.
- The student will be able to calculate the future value and present value of simple annuities due and general annuities due.
- The student will be able to calculate the amount of the periodic payments (PMT), the number of payments (n), term (t), periodic interest rate (i), and nominal interest rate (j) of an annuity.
- The student will be able to calculate the present value, number of payments, term, and periodic payment of a deferred annuity.
- The student will be able to explain the concept of amortization of loans.
- The student will be able to calculate the interest portion, principal portion, and principal balance after any payment.

- The student will be able to explain and will understand bond terminology.
- The student will be able to calculate the purchase price of a bond on an interest payment date.
- The student will be able to calculate the purchase price of a bond between interest payment dates.

TRANSFERABILITY:

Please consult the Alberta Transfer Guide for more information. You may check to ensure the transferability of this course at the Alberta Transfer Guide main page http://www.transferalberta.ca.

** Grade of D or D+ may not be acceptable for transfer to other post-secondary institutions. **Students are cautioned that it is their responsibility to contact the receiving institutions to ensure transferability**

EVALUATIONS:

CONNECT Quizzes (9@ 3% each)	27%
Mid-Term Exam	23%
Annuities Exam	15%
Final Exam (cumulative)	35%

CONNECT Quizzes

- There will 9 quizzes dispersed throughout the semester (see schedule for dates). The student will be allowed 2 attempts at each quiz. Each quiz will be worth 3% of the student's final grade, regardless of the length of the quiz, for a total of 27% (9 x 3%) of the student's final grade.
- The quizzes will be marked immediately, and the student will receive their grade immediately.
- The highest grade on any lab attempt is recorded on the dashboard.
- All quizzes must be completed before the expiration of the pre-set due date or the student will receive a mark of zero (0) for any missed labs.
- Once the quiz has been started, you must complete the entire quiz within the 60-minute time limit. Logging off or losing the internet connection during the quiz will result in a grade based only on the proportion of the exam that has been completed. It is imperative that the student has a reliable internet connection when attempting an exam.
- The student will be given a maximum of two attempts at each chapter quiz.

Exams

- Two exams will be given throughout the semester (See schedule for dates). They include:

Mid-Term Exam	23%
Annuities Exam	15%

Final Exam

- 2 hours will be given for the final exam to be written.
- The final exam will be cumulative and will account for 35% of the final grade.
- The final exam will be scheduled by the Registrar's Office during exam week(s). Do not plan any activities during this time.
- Approved calculators and approved translation devices are the only electronic devices allowed during the final examination. No programmable calculators will be allowed. Textbooks or notes

will not be allowed in the examination area. Cell phone calculators may not be used in examinations.

- In order to receive credit for BA 1050, you must achieve a course composite grade of at least D (50%). You are strongly encouraged to complete all assignments and exams—you will receive a zero (0) for any missed assignment or exam.

Lesson, Lab, Exam and Classroom Policies

- Lessons, quizzes and exams will be written as scheduled.
- Rewrites/rescheduled exams will not be given. If there is an excusable absence, the weighting of the missed exam will be added to the final exam weighting. If the absence is not excusable, a grade of 0% will be given.
- In order to get the most out of class regular attendance and active participation is encouraged.
- The student is responsible for any missed content due to missing a class (excused or unexcused).
- Photographing and/or recording course content is strictly prohibited.

GRADING CRITERIA: (The following criteria may be changed to suite the particular course/instructor)

Please note that most universities will not accept your course for transfer credit **IF** your grade is **less than C-**.

Alpha Grade	4-point Equivalent	Percentage Guidelines		Alpha Grade	4-point Equivalent	Percentage Guidelines
A+	4.0	90-100		C+	2.3	67-69
A	4.0	85-89		C	2.0	63-66
A-	3.7	80-84		C-	1.7	60-62
B+	3.3	77-79		D+	1.3	55-59
B	3.0	73-76		D	1.0	50-54
B-	2.7	70-72		F	0.0	00-49

COURSE SCHEDULE/TENTATIVE TIMELINE:

Date	Content	*Lessons/Sections	Quizzes	Exams
Jan 4	Introduction			
Jan 6	Chapter 7	7.1		
Jan 9		7.2		
Jan 11		7.3		
Jan 13		7.4		
Jan 16		7.5		
Jan 18		7.6	**Chapter 7 Quiz Due Jan 22**	
Jan 20	Chapter 8	8.1/8.2		
Jan 23		8.3		
Jan 25		8.3		
Jan 27		8.4		
Jan 30		8.5		
Feb 1		8.5	**Chapter 8 Quiz Due Feb 5**	
Feb 3	Chapter 9	9.1		
Feb 6		9.2 & 9.3		
Feb 8		9.4		
Feb 10		9.5		
Feb 13		9.5 & 9.6		
Feb 15		9.6		
Feb 17		9.6	**Chapter 9 Quiz Due Feb 19**	
Feb 20-24	WINTER BREAK – NO CLASSES			
Feb 27	Chapter 10	10.1		
Mar 1		10.2		
March 3		10.3		
March 6		10.4		

Date	Content	*Lessons/Sections	Quizzes	Exams
March 8	Review		Chapter 10 Quiz Due March 12	
March 10				Mid-Term Exam (23%)
March 13	Chapter 11	11.1		
March 15		11.2 & 11.3		
March 17		11.4	Chapter 11 Quiz Due March 19	
March 20	Chapter 12	12.1/12.2		
March 24		12.3	Chapter 12 Quiz Due March 26	
March 27	Chapter 13	13.1 & 13.2		
March 29		13.3	Chapter 13 Quiz Due March 29	
March 31		Review		Annuities Exam (15%)
April 3	Chapter 15	15.1		
April 5		15.2 & 15.3	Chapter 15 Quiz Due April 9	
April 10	Chapter 16	16.1 & 16.2		
April 12		16.3	Chapter 16 Quiz Due April 12	
April 14 - 24	All Sections			Final Exam (35%)

Please note that answers to the odd numbered questions are in the back of the textbook. Full solutions to the odd numbered questions are available in your online resources. Answers to the even numbered questions will not be provided.

Final examinations will be scheduled by the registrar's office. Do not plan any activities during examination week.

The above schedule may be revised at the discretion of the instructor based on class requirements.

STATEMENT ON PLAGIARISM AND CHEATING:

Cheating and plagiarism will not be tolerated and there will be penalties. For a more precise definition of plagiarism and its consequences, refer to the Student Conduct section of the Northwestern Polytechnic Calendar at https://www.nwpolytech.ca/programs/calendar/ or the Student Rights and Responsibilities policy which can be found at https://www.nwpolytech.ca/about/administration/policies/index.html.

**Note: all Academic and Administrative policies are available on the same page.