

## DEPARTMENT OF BUSINESS AND OFFICE ADMINISTRATION

### COURSE OUTLINE – Winter 2024

#### **BA1050 (C3): Business Mathematics – 3 (3-0-1) UT 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:** Lori Bombier

**OFFICE:** C410

**OFFICE HOURS:** Tuesday & Thursday 10:00 am – 11:15 am, Friday 12:00 pm – 12:45 pm, or by appointment

**PHONE:** 780-539-2711

**E-MAIL:** [LBombier@nwpolytech.ca](mailto:LBombier@nwpolytech.ca)

**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.

**PREREQUISITES:** 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):** BA1050 consists of three hours of lecture and one hour of lab work per week. Attend On-Campus, In-Person.

## LEARNING OUTCOMES:

### Simple Interest

- 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.

### Compound Interest

- 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.

### Annuities

- 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.alberta.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:

|                              |     |
|------------------------------|-----|
| Smart Book (SB) Lessons      | 5%  |
| CONNECT Quizzes (9@ 2% each) | 18% |
| Mid-Term Exam                | 25% |
| Annuities Exam               | 17% |
| Final Exam (cumulative)      | 35% |

In order to receive credit for BA 1050, **you must achieve 50 percent on the final examination, and 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. The weighting of each assessment activity is indicated in the chart above

## GRADING CRITERIA:

*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                | 95-100                | C+          | 2.3                | 67-69                 |
| A           | 4.0                | 85-94                 | 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:**

|              | Content      | *Lessons/Sections | Quizzes         | Exams                  |
|--------------|--------------|-------------------|-----------------|------------------------|
| Jan. 8       | Introduction |                   |                 |                        |
| Jan. 9       | Chapter 7    | 7.1               |                 |                        |
| Jan. 11      |              | 7.2               |                 |                        |
| Jan. 15      |              | 7.3               |                 |                        |
| Jan. 16      |              | 7.4               |                 |                        |
| Jan. 18      |              | 7.5               |                 |                        |
| Jan. 22      |              | 7.6               | Chapter 7 Quiz  |                        |
| Jan. 23      | Chapter 8    | 8.1               |                 |                        |
| Jan. 25      |              | 8.2               |                 |                        |
| Jan. 29      |              | 8.3               |                 |                        |
| Jan. 30      |              | 8.4               |                 |                        |
| Feb. 1       |              | 8.5               |                 |                        |
| Feb. 1       |              | 8.5               | Chapter 8 Quiz  |                        |
| Feb. 5       | Chapter 9    | 9.1 & 9.2         |                 |                        |
| Feb. 6       |              | 9.2               |                 |                        |
| Feb. 8       |              | 9.3 & 9.4         |                 |                        |
| Feb. 12      |              | 9.5               |                 |                        |
| Feb. 13      |              | 9.6               |                 |                        |
| Feb. 15      |              | 9.6               | Chapter 9 Quiz  |                        |
| Feb. 19 - 23 | WINTER       | BREAK             | NO              | CLASSES                |
| Feb. 26      | Chapter 10   | 10.2              |                 |                        |
| Feb. 27      |              | 10.1              |                 |                        |
| Feb. 29      |              | 10.3              |                 |                        |
| Mar. 4       |              | 10.4              |                 |                        |
| Mar. 5       | Questions    | About Mid-Term    | Chapter 10 Quiz |                        |
| Mar. 7       |              |                   |                 | Mid-Term Exam<br>(25%) |

| Date         | Content      | *Lessons/Sections | Quizzes                             | Exams                   |
|--------------|--------------|-------------------|-------------------------------------|-------------------------|
| Mar. 11      | Chapter 11   | 11.1 & 11.2       |                                     |                         |
| Mar. 12      |              | 11.3              |                                     |                         |
| Mar. 14      |              | 11.4              | Chapter 11 Quiz                     |                         |
| Mar. 18      | Chapter 12   | 12.1 & 12.2       |                                     |                         |
| Mar. 19      | NO           | CLASS             | BUSINESS                            | CONFERENCE              |
| Mar. 21      |              | 12.3              | Chapter 12 Quiz                     |                         |
| Mar. 25      | Chapter 13   | 13.1 & 13.2       |                                     |                         |
| Mar. 26      |              | 13.3              | Chapter 13 Quiz                     |                         |
| Mar. 28      |              |                   |                                     | Annuities Exam<br>(17%) |
| April 1      | Chapter 15   | 15.1              |                                     |                         |
| April 2      |              | 15.2              |                                     |                         |
| April 4      |              | 15.3              |                                     |                         |
| April 8      |              | 15.3              | Chapter 15 Quiz                     |                         |
| April 9      | Chapter 16   | 16.1 & 16.2       |                                     |                         |
| April 11     |              | 16.3              | Chapter 16 Quiz                     |                         |
| April 15     |              | Discuss           | Final Exam                          |                         |
| April 17 -24 | All Sections |                   | Scheduled by the Registrar's Office | 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.

### STUDENT RESPONSIBILITIES:

Please find the student rights and responsibilities policy here:

<https://www.nwpolytech.ca/about/administration/policies/fetch.php?ID=69>

## STATEMENT ON ACADEMIC MISCONDUCT:

Academic Misconduct will not be tolerated. For a more precise definition of academic misconduct and its consequences, refer to the Student Rights and Responsibilities policy available at <https://www.nwpolytech.ca/about/administration/policies/index.html>.

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

## Additional Information: IMPORTANT Assignment, Quiz and Exam Policies:

### SB Lessons

- Each section covered in the text (for example, section 8.1), will have an associated SB lesson that the students must complete. These lessons are interactive and completion of all lessons within the stipulated pre-set due dates will have a total weighting of 5% of the student's final grade.
- Completion marks on lessons are always recorded on the dashboard and visible for students. In order to obtain the completion marks for the online lessons, the student must complete the lesson before the expiration of the pre-set due date.
- Interactive scenes in the Lessons (within the pre-set due date) are locked for students to attempt correctly. Students will need to work through them and answer questions correctly to unlock them. Once a lesson is unlocked, they can freely go back and forth for practice.

### CONNECT Quizzes

- There will be 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 2% of the student's final grade, regardless of the length of the quiz, for a total of 18% (9 x 2%) 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  | 25% |
| Annuities Exam | 17% |

## 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 50 percent on the final examination, and 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. The weighting of each assessment activity is indicated in the chart above.

## 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.