



**DEPARTMENT OF BUSINESS AND OFFICE ADMINISTRATION**

**COURSE OUTLINE – WINTER 2020**

**BA 1050 BUSINESS MATHEMATICS AND STATISTICS – 3 (3-0-1) 60 HRS 15 WEEKS**

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**OFFICE HOURS:** M/Th 1:00 – 2:20 pm or by appointment

**CALENDAR DESCRIPTION:**

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

**PREREQUISITE(S)/COREQUISITE:** Math 20-1 or 20-2 with 60% or Math 30-1 or Math 30-2

**REQUIRED TEXT/RESOURCE MATERIALS:** Mathematics of Business and Finance: Third Edition. (2017). Larry Daisley, Thambyrajah Kugathasan, and Diane Huysmans. Vretta.

**All students must have online access to the online lessons and online labs.** You must have an access code in order to gain access to the online resources. It is the student's choice if they purchase a textbook with access code, or e-textbook with access code. If you have purchased a used book, you will have to purchase an access code separately at [www.intromath.ca](http://www.intromath.ca)

**Sharp EL - 738 Calculator**

**DELIVERY MODE(S):** BA 1050 consists of three hours of lecture and one hour of lab work per week.

**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:**

### **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:

Athabasca University

MacEwan University

SAIT

University of Alberta

University of Lethbridge

Other (transfers in combination with other courses or to other institutions)

**\*Warning:** Although we strive to make the transferability information in this document up-to-date and accurate, **the student has the final responsibility for ensuring the transferability of this course to Alberta Colleges and Universities.** Please consult the Alberta Transfer Guide for more information. You may check to ensure the transferability of this course at Alberta Transfer Guide main page <http://www.transferalberta.ca> or, if you do not want to navigate through few links, at <http://alis.alberta.ca/ps/tsp/ta/tbi/onlinesearch.html?SearchMode=S&step=2>

\*\* Note that, in many cases, a 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:

Online Lessons	5%
Online Labs (10 @ 2% each)	20%
Simple Interest Exam	10%
Compound Interest Exam	15%
Annuities Exam	15%
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 above.

### Online Lessons

- Each section covered in the text (for example, section 8.1), will have an associated online 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 recorded on the dashboard and visible at all times 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.

## Online Labs

- There will be 10 labs dispersed throughout the semester (see schedule for dates). The student will be allowed 3 attempts at each lab consisting of 5-6 questions, depending on the content being covered. Each lab will be worth 2% of the student's final grade, regardless of the length of the lab, for a total of 20% (10 x 2%) of the student's final grade.
- The labs will be marked immediately, and the student will receive their grade immediately. Corrections for the attempted lab will be made available to the student immediately after they have submitted their answers.
- The highest grade on any lab attempt is recorded on the dashboard.
- **All labs 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.**
- After the expiration of the pre-set due date, students will continue to have access to the lessons and labs for unlimited practice. However, they will not be graded for marks.

## Exams

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

Simple Interest Exam	10%
Compound Interest Exam	15%
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.

## Lesson, Lab and Exam Policies:

- Lessons, labs and exams will be written as scheduled. **No rewrites/rescheduled exams will 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.
- Any exam or assignment grade that a student may wish to contest must be done so within 5 business days after the exam/assignment has been graded. Any exams/assignments contested after this time frame will not be given consideration.
- In order to get the most out of class regular attendance and active participation is encouraged. Repeated lateness will be viewed similar to an absence in class. Disruptive behavior will also be

viewed as “not professional” and the student will be asked to leave the classroom, resulting in a marked absence.... i.e. excessive/disruptive talking, texting, taking phone calls, etc.

- Photographing and/or recording course content is strictly prohibited.

**Student Conduct**

- **Your responsibility** as a student is to arrive on time and remain for the duration of scheduled classes and related activities.
- **Your responsibility** as a student is to respect faculty member’s right to enforce the attendance requirements for the course.

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

**GRADING CRITERIA:**

Please note that Universities will not accept your course for transfer credit **IF** your grade is **less than C-**. This means **DO NOT GET LESS THAN “C-” IF YOU ARE PLANNING TO TRANSFER TO UNIVERSITY.**

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

Dates WINTER 2020	Content	*Lessons/Sections	Assigned Practice Questions	Labs	Exams
January 6	Introduction				
January 8	<b>Module 1</b> Chapter 8	8.1	1-30		
January 10	Chapter 8	8.1	1-30		
January 13	Chapter 8	8.2	1-44	Lab #1 (8.1, 8.2)	
January 15	Chapter 8	8.3	1-20		
January 17	Chapter 8	8.3	1-20		
January 20	Chapter 8	8.4	1-26		
January 22	Chapter 8	8.4/review	1-26		
January 24	Chapter 8	Exam			<b>Simple Interest Exam (10%)</b>
January 27	<b>Module 2</b> Chapter 9	9.1/9.2	1-14 1-32	Lab #2 (8.3, 8.4)	
January 29	Chapter 9	9.3	1-26		
January 31	Chapter 9	9.4	1-26		
February 3	Chapter 9	9.4	1-26	Lab #3 (9.1, 9.2, 9.3 )	
February 5	Chapter 9	9.5	1-14		
February 7	Chapter 9	9.6	1-16		
February 10	Chapter 9	9.7	1-22	Lab #4 (9.4, 9.5)	
February 12	Chapter 9	9.8	1-18		
February 14	Exam				<b>Compound Interest Exam (15%)</b>
February 17	<b>NO CLASSES</b>	<b>FAMILY DAY</b>		Lab #5 (9.6, 9.7, 9.8)	
February 19	<b>NO CLASSES</b>	<b>WINTER BREAK</b>			
February 21	<b>NO CLASSES</b>	<b>WINTER BREAK</b>			

Dates	Content	Lessons/Sections	Assigned Practice Questions	Labs	Exams
February 25	<b>Module 3</b> Chapter 10	10.1	1-10		
February 26	Chapter 10	10.2	1-28		
February 28	Chapter 10	10.3	1-30		
March 2	Chapter 10	10.4	1-28	Lab #6 (10.1,10.2, 10.3)	
March 4	Chapter 10	10.5	1-30		
March 6	Chapter 10	10.6	1-34		
March 9	Chapter 10	10.7	1-22	Lab #7 (10.4, 10.5)	
March 11	Chapter 10	10.8	1-24		
March 16	Chapter 11	11.1	1-24	Lab #8 (10.6,10.7,10.8)	
March 18	Chapter 11 Review	11.1	1-24		
March 20	Exam				<b>Annuities Exam (15%)</b>
March 23	<b>Module 4</b> Chapter 12	12.1	1-30		
March 25	Chapter 12	12.2	1-16		
March 27	Chapter 12	12.1/12.2	Review		
March 30	Chapter 13	13.1	1-20	Lab #9 (12.1, 12.2)	
April 1	Chapter 13	13.2	1-20		
April 3	Chapter 13	13.1/ 13.2	Review		
April 6	Simple Interest	Review		Lab #10 (13.1, 13.2)	
April 8	Compound/ Annuities	Review			
April 10	<b>NO CLASSES</b>	<b>GOOD FRIDAY</b>			
April 13	Mortgages/ Bonds	Review			
April 15-25	<b>All Sections Covered</b>	<b>Scheduled by the Registrar's Office</b>			<b>Final Exam (35%)</b>

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

## **STUDENT RESPONSIBILITIES:**

### **Student Conduct**

As a student, it is your responsibility to read, understand and comply with the college's academic policies, which are reviewed regularly, updated and posted on our college website. If you have any questions regarding these policies, please contact Student Services.

### **Attendance**

Students are expected to attend all scheduled classes, arrive on time, and remain for the duration of the activities. Arriving late or leaving early is disruptive to the entire class. Frequent tardiness may be treated as an absence. Students with absences in excess of 6 classes may be refused permission to write the final exam. For more information, please refer to the Academic Regulations on Debarred from Exams at <https://www.gprc.ab.ca/programs/grading-systems.html>.

### **Time Management:**

The expectation for this course is that students read the material and attempt the exercises prior to class. Adopting and adhering to effective learning habits in this course will likely take up a great deal of time so students are encouraged to plan their schedule accordingly. It is difficult for students to catch up once they fall behind schedule.

### **Cell Phones:**

The use of cell phones during class time is unprofessional and distracting to the instructor and fellow students. Texting during class is therefore strictly prohibited. Cell phones must be either turned off or set to silent mode and placed out of site.

### **Recording:**

Recording lectures or taking photos in class is prohibited unless advance permission is obtained from the instructor and any guest presenter(s). In the event permission is granted, such recordings may only be used for individual study, and may not be reproduced, transferred, distributed or displayed in any public manner.

## **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 College Admission Guide at <http://www.gprc.ab.ca/programs/calendar/> or the College Policy on Student Misconduct: Plagiarism and Cheating at [www.gprc.ab.ca/about/administration/policies/\\*\\*](http://www.gprc.ab.ca/about/administration/policies/**)

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

### **Cheating**

Cheating on tests or examinations includes, but is not limited to, the following:

- dishonest or attempted dishonest conduct such as **speaking to other students or communicating with them under any circumstances whatsoever**
- bringing into the examination room a textbook, notebook, memorandum, other written material or mechanical or electronic device not authorized by the examiner or instructor
- writing an examination, or part of it, outside the confines of the examination room without permission to do so

- consulting any person or materials outside the confines of the examination room without permission to do so
- leaving answer papers exposed to view, or any attempts to read other students' examination papers
- tampering or attempts to tamper with examination scripts, class work, grades and/or class records; the acquisition, attempted acquisition, possession, and/or distribution of examination materials or information not authorized by the instructor
- Impersonation of another student in an examination or other class assignment.
- **Absolutely no examination materials may be removed from the examination room.** All papers, answer forms and examination question sheets must be returned to the instructor. If students leave the examination room for any reason unacceptable to the instructor, they must hand in all examination materials and it will be assumed that the examination is completed.

If students voluntarily and consciously aid another student in the commission of one of these offenses they are also guilty of misconduct. Any attempt to commit academic misconduct will bear the same consequences as if the act occurred. A student who assists another student in an act or attempted act of misconduct will also be considered to have committed an offense.

### **Plagiarism**

Plagiarism means submitting work (words, ideas, images, or data) in a course as if it were their own work done expressly for that particular course when, in fact, it is not. Most commonly, plagiarism exists when:

- the work submitted or presented was done, in whole or in part, by an individual other than the student (this includes having another person impersonate the student or otherwise substitute the work of another for their own in an assignment, examination, or test)
- Parts of a student's work are taken from another source without reference to the original author. This includes ideas, words, and images appearing in print, digital, graphical, internet, audio and video formats
- students submit or present the work in one course which has also been submitted in another course (although it may be completely original with the student) without the prior agreement of the instructor
- Clinical or laboratory reports are falsified or fabricated.

While it is recognized that academic work often involves reference to ideas, data and conclusions of others, intellectual honesty requires that such references be explicitly and clearly noted.

Instructors may choose to use online plagiarism detection services. When students submit a paper, it is understood that they are consenting to such a procedure and that they cannot claim any copyright violation should such paper be uploaded to an online plagiarism detection database.