

MAKERERE UNIVERSITY BUSINESS SCHOOL
COURSE WORK ONE TAKE HOME FOR THE DEGREE OF
BACHELOR OF SCIENCE IN FINANCE
OF MAKERERE UNIVERSITY AY 2025/2026

COURSE UNIT : ACTUARIAL SCIENCE AND ANALYTICS
COURSE CODE : FIN3256
YEAR OF STUDY : THREE
SEMESTER : TWO
DATE : MARCH 14, 2026

INSTRUCTIONS

1. *This is a take home assignment to be done individually.*
2. *Students are required to attempt all questions.*
3. *Students are required to save both the MS Excel and MS Word files in their **name** and **student number**. For example, **KAHUNDESHAKIRAH2300708650***
4. *Submission date is March 24, 2026 at 14:00 hours.*
5. *Submission to be made electronically via email to: robele@mubs.ac.ug*
6. *Students are expected to register on the attendance list that will provided upon submission of their work.*

Question One

Using the claims data set that was shared, you are required;

- a) To build a claims/loss dashboard using Microsoft Excel. **(04 Marks)**
- b) To compute the following using the Microsoft excel dashboard created;
 - i. Claim count and total claim amount. **(01 Mark)**
 - ii. Total premium. **(01 Mark)**
 - iii. Average claim size. **(01 Mark)**
 - iv. Loss ratio. **(01 Mark)**

c) Segment the results in (b) above by product line, region and sales channel. **(03 Marks)**

d) Make a commentary of your results in a Microsoft word document answering the following questions

i. Which segment has the highest loss ratio? Why might that be? **(02 Mark)**

ii. Is high loss ratio driven by frequency or severity? **(01 Mark)**

iii. What additional data would you want before changing price? **(01 Mark)**

Question Two

a) Using the data set provided, build a cash flow table by year and include the following;

i. Discount factors.

ii. Present value of each cash flow.

iii. Expected cash flow and expected present value.

iv. A small sensitivity table for discount rates.

(08 Marks)

b) Determine the following;

i. Overall PV. **(01 Mark)**

ii. Overall EPV. **(01 Mark)**

iii. PV at 8%, 10%, and 12%. **(03 Mark)**

c) Provide an interpretation of the results in (b) above. **(02 Mark)**