Module	Quantitative Analysis for Business
Course code	BABSH-QAB
Credits	10
Allocation of marks	30% Continuous Assessment 70% Final Examination

Intended Module Learning Outcomes

On successful completion of this module, the learner will be able to:

1. Discuss alternative strategies used to gather sample data
2. Analyse data using measures of location and dispersion.
3. Draw inferences from sample data regarding the relevant population.
4. Apply mathematical techniques to problem solving
5. Calculate and interpret the nature of correlation between variables
6. Apply appropriate mathematical tools to financial data including discounting and investment appraisal
7. Explain probability and be able to use a range of techniques to calculate probabilities

Module Objectives

The main objective is to ensure that learners appreciate the importance of mathematics and statistics for successful decision making in a range of business disciplines (e.g. finance, economics, marketing etc.). They learn how to apply these mathematical skills to manipulate and interpret numerical data. They are required to use a statistical package to support them in their application of mathematics and statistics in their analysis of business data.

Module Curriculum

Collection and presentation of data

- Data types and sampling methods
- Tables, diagrams and graphs
- Frequency distributions

Analysis of Data

- Measures of central tendency
- Measures of dispersion
- The Normal distribution
- Confidence intervals for population mean and proportion
- Sample error and sample size
- Hypothesis testing: Z-tests, and X^2- tests

Modelling Business/Economic Problems

- Linear equations
- Solving simultaneous equations
- Quadratic and cubic equations
- Differential calculus
- Supply and demand curves
- Cost, revenue and profit functions
- Elasticity of demand

Correlation and Regression

- Scatter graphs
- The correlation coefficient
- The coefficient of determination
- The least squares regression equation
- Interpolation and extrapolation
- Spearman's rank correlation coefficient

Financial Mathematics

- Simple and compound interest
- Nominal and effective interest rates
- Depreciation
- Sinking funds
- Discounting cash flows including annuities and perpetuities
- Investment appraisal using net present value and internal rate of return

Probability

- The laws of probability
- Calculating probabilities using Binomial, Poisson and Normal distributions
- Bayes Theorem