Unit: Quantitative Methods for Business **Exam Paper No.:** 3	**Guided Learning Hours:** 220 **Number of Credits:** 22
Prerequisites: Knowledge of accounting and finance	**Corequisites:** A pass or better in Diploma in Finance or equivalence.
Aim: The unit applies quantitative methods to business problems with emphasis on learning to select the appropriate problem solving method, applying the chosen method, and interpreting the solution. The use of quantitative methods in managerial decision making is a continuous focus of this unit. Learners are introduced to some of the methods used to collect, present and analyse data and to provide illustrative applications to decision problems faced by business managers. Topics include sources of data; sampling and collection of primary data; presentation and summary measures of data; random variation of data and some implications for hypothesis testing and forecasting; an introduction to decision models with uncertainty; the use and interpretation of estimated regression equations; some forecasting methods used by business. The unit also reviews on quantitative tools used in business and economics; financial mathematics; linear algebra, linear optimisation with applications and matrix algebra with business applications.	
Required Materials: Recommended Learning Resources.	**Supplementary Materials:** Lecture notes and tutor extra reading recommendations.
Special Requirements: The unit requires a combination of lectures, demonstrations and discussions.	
Intended Learning Outcomes:	**Assessment Criteria:**
1. Understand the basic structure of index numbers when making comparisons over time and ability to perform calculations involving the use of indices.	1.1 Describe fixed base index 1.2 Describe chain base index 1.3 Describe weighted index 1.4 Describe laspeyres index 1.5 Describe paasche index
2. Understand frequency distribution; classification and presentation of graphical data.	2.1 Define descriptive statistics 2.2 Explain the purpose of classifying data 2.3 Define frequency distribution 2.4 Demonstrate histogram data representation 2.5 Develop cumulative frequency polygon (ogive) 2.6 Describe box whisker
3. Understand measurement of location and dispersion; including how to make judgement of the probability using descriptive statistics.	3.1 Define mean 3.2 Define mode 3.3 Define variance 3.4 Define standard deviation 3.5 Describe inter-quartile, lower and upper quartile 3.6 Calculate mean, median and standard deviation
4. Understand correlation and regression analysis model for indentifying relationships between variables.	4.1 Describe correlation 4.2 Contrast univariate data vs bivariate data 4.3 Develop scatter graph 4.4 Calculate product moment correlation coefficient 4.5 Produce regression line equation
5. Understand probability theory and implementation of random values using normal	5.1 Describe inferential statistics 5.2 Describe bell shape curve

distribution	5.3 Define normal distribution 5.4 Describe probability distribution 5.5 Be able to use standard normal table 5.6 Calculate probabilities
6. Understand statistical testing involving large sample tests (hypothesis testing) notations	6.1 Create the mean and standard deviation Greek letters 6.2 Define standard error 6.3 Analyse the steps in hypothesis testing 6.4 Describe confidence limits 6.5 Calculate standard error 6.6 Calculate confidence limits
7. Understand break even analysis formula, advantages and disadvantages; including the classification of costs	7.1 Define variable and fixed costs 7.2 Define margin of safety 7.3 Calculate breakeven quantity 7.4 Calculate margin of safety 7.5 Calculate budgeted profit 7.6 Describe quadratric equation
8. Understand time value of money and its implementation in evaluating investments	8.1 Define simple and compound interests 8.2 Define net present value 8.3 Calculate interest paid 8.4 Calculate maturity value 8.5 Calculate annual percentage rate of an investment 8.6 Calculate net present value 8.7 Calculate internal rate of return 8.8 Produce an investment appraisal
9. Lifetime annuity value calculations including relationships with number and geometric series.	9.1 Develop number series 9.2 Define geometric series 9.3 Define annuity 9.4 Calculate terminal value of annuity 9.5 Calculate present value of annuity
Methods of Evaluation: A 3-hour written examination paper with five essay questions, each carrying 20 marks. Candidates are required to answer all questions. Candidates also undertake project/coursework in Quantitative Methods for Business with a weighting of 100%.	

Recommended Learning Resources: Quantitative Methods for Business

Text Books	• Quantitative Methods for Business, Management and Finance by Louise Swift and Sally Piff. ISBN-10: 1403935289 • Quantitative Methods for Business by Donald Waters. ISBN-10: 027364694X • Quantitative Methods for Business Decisions by Jon Curwin and Roger Slater. ISBN-10: 1861525311
Study Manuals 	BCE produced study packs
CD ROM 	Power-point slides
Software 	None