Knowledge, skills and understanding

Content

To prepare students for the final assessment of this qualification, the following content must be covered.

1. **Management Information: The External and Internal Business Environment**

Subject content	What students need to learn
Students will need to apply their knowledge and understanding of the following content and interpret and analyse their findings and results in a business context	
1.1 Data collection	a) Planning for data collection
	b) The difference between primary and secondary sources of business data
	c) The difference between a census and a survey and their relative advantages and disadvantages
	d) The need for a pilot survey before conducting a large scale survey
	e) The sample frames
	f) The determinants of sample size
	g) The different methods of sampling: • random • systematic • multistage • quota
	h) Advantages and disadvantages of the various sampling methods
	i) The role of stratification in sample design
	j) Advantages and disadvantages of the different methods of data collection including: • observation • telephone • interview • postal questionnaire

Subject content	What students need to learn
	• email survey • internet survey
	k) Statistical bias
	l) Principles of questionnaire design
	m) Non-response and the methods of attempting to overcome this problem when dealing with business data
1.2 Descriptive statistics	a) Calculations: • the mean, mode and standard deviation for grouped data • coefficient of variation
	b) Diagrams, charts and graphs: • histogram, dealing with unequal class intervals
	c) Interpretation of the measures of location and dispersion including the coefficient of variation
	d) Skewness by calculation or graphically

2. Business Planning Models

Subject content	What students need to learn
Students will need to apply their knowledge and understanding of the following content and interpret and analyse their findings and results in a business context	
1.1 Correlation and regression	a) Response and explanatory variables
	b) Scatter diagram, interpreting the relationship shown including the possible presence of outliers
	c) Calculations • regression equation • the product moment correlation coefficient • the coefficient of determination • Spearman's rank correlation coefficient
	d) Plot a least squares regression line
	e) Forecasting and forecast accuracy
	f) Testing for significance of a correlation coefficient

Subject content	What students need to learn
	g) Meaning and interpretation of regression and correlation coefficients
2.2 Time-based data	a) Components of a time series
	b) Calculations: • suitable moving average to identify the trend • the seasonal factors using either the additive or multiplicative model • weighted index number for price, quantity, cost and value • Laspeyres and Paasche index numbers including their advantages and disadvantages
	c) Diagrams, charts and graphs: • time series graph • the trend on the time series graph
	d) Choice of additive or multiplicative model
	e) Seasonally adjusted values and their uses
	f) Forecasting future values and their accuracy
	g) A national index of retail prices
	h) Change of base year and its effects
	i) Index linking for comparative purposes

3. **Risk Management and Business Decision Making**

Subject content	What students need to learn
Students will need to apply their knowledge and understanding of the following content and interpret and analyse their findings and results in a business context	
3.1 Probability, including the normal distribution	a) Uses of probability and its application within a business environment
	b) Probability concepts including mutually exclusive and independent events
	c) The addition and multiplication rules of probability
	d) Presentation of business outcomes including the use of tabulation and Venn and tree diagrams
	e) Problems involving conditional probability
	f) Problems involving mathematical expectation
	g) Characteristics of normally distributed data
	h) Conversion of a general normal distribution to a standard normal distribution
	i) Use of normal distribution tables
	j) Combinations of two or more independent normal distributions and including applications in a business context
3.2 Estimation and confidence intervals	a) Concept of a sampling distribution and a confidence interval
	b) Confidence interval for a mean using the normal distribution for large samples
	c) Confidence interval for a mean using the t distribution for small samples
	d) Confidence interval for a proportion
	e) Sample number required to obtain a confidence interval of a given size for a stated probability
3.3 Statistical test	a) Stages for carrying out statistical tests
	b) Use of a confidence interval in a statistical test
	c) Type I and Type II errors and which of these might arise because of a statistical test

	d) One tailed and two tailed statistical tests
Subject content	What students need to learn

	e) Choice of an appropriate statistical test: • single mean test for large samples using the normal distribution • single mean test for small samples using the t distribution • single proportion test • two means test for large samples using the normal distribution • two means test for small samples using the t distribution • paired comparison test using the t distribution • two proportion tests
3.4 Chi-squared test	a) The appropriate use of a chi-squared test
	b) Chi-squared test for association using contingency tables
	c) Test for goodness of fit when percentages are given
	d) Differences between observed and expected values
	e) Interpretation of the outcome of a Chi-squared test

4. Quality Assurance and Control

Subject content	What students need to learn
Students will need to apply their knowledge and understanding of the following content and interpret and analyse their findings and results in a business context	
4.1 Quality control	a) Advantages to management of setting up quality control charts
	b) The use of control charts for mean
	c) Diagrams, charts and graphs: • a mean chart using the normal distribution 0.025 point for the warning line and 0.001 point for the action line and interpreting the results • interpretation of results

The following skills should be developed throughout the course of study.

Skills	Students should:
	a) Use and apply statistical techniques in a range of business contexts, including market research, financial data, manufacturing, business forecasting and economic indicators
	b) Select and justify appropriate statistical methods and tests as an aid in solving business problems and business decisions
	c) Collect, analyse and interpret results of diagrams, charts and graphs and information in the context of business situations