Unit Title: Introduction to Quantitative Methods	Unit Code: IQM
Level: 3	Learning Hours: 100

Learning Outcomes and Indicative Content:

Candidates will be able to:

1. Demonstrate the rules of numeracy

1.1 Apply the four rules to whole numbers, fractions and decimals
1.2 Express numbers in standard form
1.3 Multiply and divide negative numbers

2. Apply calculations

2.1 Compare numbers using ratios, proportions and percentages;
2.2 Obtain values for simple financial transactions involving purchases, wages, taxation, discounts
2.3 Determine values for simple and compound interest, and for depreciation of an asset using the straight line method and the reducing balance method
2.4 Convert foreign currency
2.5 Make calculations using a scientific calculator including roots and powers; logarithms and exponential values
2.6 Evaluate terms involving a sequence of operations and use of brackets
2.7 Interpret, transpose and evaluate formulae
2.8 Approximate data using rounding, significant figures

3. Use algebraic methods

3.1 Solve linear and simultaneous equations
3.2 Solve quadratic equations using factorisation and formulae
3.3 Solve equations using roots or logarithms
3.4 Determine the equation of a straight line through two points and also when given one point and its gradient
3.5 Determine the gradient and intercepts on the x or y axes for a straight line

4. Construct and use: graphs, charts and diagrams

4.1 Draw charts and diagrams derived from tabular data: eg bar charts, pie charts, scatter diagrams
4.2 Plot graphs, applying general rules and principles of graphical construction including axes, choice of scale and zero
4.3 Plot and interpret mathematical graphs for simple linear, quadratic, exponential and logarithmic equations
4.4 Identify points of importance on graphs eg maximum, minimum and where they cut co-ordinate axes

5. Apply statistical methods

5.1 Distinguish between quantitative and qualitative data
5.2 Distinguish between continuous and discrete random variables
5.3 Represent and interpret variables using histograms, stem and leaf diagrams and cumulative frequency curves
5.4 Recognise and use sigma notation for summation
5.5 Determine and interpret summary statistics: these would include measures of location (mean, mode, median), measures of dispersion (range, interquartile range, standard deviation) and measures of skewness

6. Apply the laws of probability

6.1 Recognise outcomes which are equally likely, not equally likely or subjective
6.2 Use appropriate formulae to determine probabilities for complementary, mutually exclusive, independent and conditional events
6.3 Determine probabilities using a sample space, two way table or tree diagram
6.4 Determine the expected value of a variable
6.5 Determine probabilities using the normal distribution making use of tables
6.6 Represent normal probabilities as areas under the standard normal curve

Assessment Criteria:

- Assessment method: written examination
- Length of examination: three hours
- Candidates should answer four questions from a choice of eight, each question carrying equal marks

Recommended Reading

ABE, *ABE Study Manual – Introduction to Quantitative Methods*, ABE

Swift L, Piff S, *Quantitative Methods for Business, Management and Finance* (2005), Pelgrave Macmillan
ISBN: 1403935289

Curwin J, Slater R, *Improve Your Maths* (1999), Thomson Learning
ISBN: 1861525516