

Unit title:	QUANTITATIVE DECISION TECHNIQUES (wef 2006)
Level:	C
Credit value:	20
ECTS equivalent credit value	10

PRE-REQUISITES AND CO-REQUISITES

There are no pre or co-requisites for this unit.

AIMS

The unit aims to:

- Develop knowledge of the fundamental mathematical processes, techniques and ideas used in the collection, presentation, analysis and interpretation of data.
- Develop an ability to communicate quantitative results and show how quantitative methods may be used to provide reliable management information.
- Develop an understanding of the scope and limitations of quantitative analysis.
- Improve students' employability by adding to their ability to use the key transferable skills of mathematics and statistics.

INTENDED LEARNING OUTCOMES

Having completed this unit, the student is expected to:

1. Understand the mathematical underpinnings of statistics and be able to apply appropriate statistical techniques to summarise and describe sets of data.
2. Be able to calculate a range of descriptive statistics and interpret the results.
3. Be able to analyse data using significance tests, time-series methods, correlation and regression.
4. Appreciate the uses of a range of decision-making techniques in business.
5. Be familiar with the use of Excel and SPSS in the analysis of quantitative data.

LEARNING AND TEACHING METHODS

The unit employs a learning strategy of lectures, seminars, workshops, intranet and internet supported activities and group and individual learning activities. The actual composition of the learning strategy will be designed to best support the nature of the unit.

ASSESSMENT

The Intended Learning Outcomes (ILOs) are assessed through coursework (50%) and examination (50%).

INDICATIVE CONTENT

Review of basic mathematics: Powers, roots, logarithms and exponentials. Graphs, equations and differentiation of simple functions. Percentages and ratios.

Data: Types of quantitative data and measurement scales. Methods of collecting data. The presentation of numerical data in tables, graphs and diagrams.

Descriptive statistics: Measures of location, dispersion and skewness. Index numbers, including the Laspeyres and Paasche price indices.

Time-series analysis The components of a time-series. Estimating the trend by moving averages. Estimating the seasonal variation in additive and multiplicative models. Forecasting.

Introduction to business decision-making: Methods of stock control – the economic order quantity approach. Break-even analysis. Financial rates of return and basic investment appraisal.

Probability and hypothesis testing: The measurement of probability. Probability distributions (including the binomial, Poisson and normal distributions). Confidence intervals and significance testing, using z-tests and t-tests. Chi-squared tests.

Correlation and regression: The Pearson and Spearman correlation coefficients. Simple linear regression – calculating the coefficient estimates, goodness of fit statistics and significance testing.

INDICATIVE KEY LEARNING RESOURCES

CURWIN, J. and SLATER, R., 2002. *Quantitative Methods for Business Decisions*. 5th Edition. Thomson Learning.

CURWIN, J. and SLATER, R., 2004. *Quantitative Methods: A Short Course*. Thomson Learning.

Handling Numerical Data Effectively, A computer-based data analysis learning package available on the Bournemouth University IBAL intranet.

Excel spreadsheet
SPSS for Windows.