

Module description

Proposed title (unique)																			
M	a	t	h	e	m	a	t	i	c	s									
Brief description of module (for inclusion in catalogue to aid learners to choose)																			
<p>This module introduces students to matrices, linear programming methods and to logic concepts. This module will focus on the application of each topic in a mathematical and or a computing context. An introduction to spreadsheets will also be included through practicals in Microsoft Excel.</p>																			
Learning outcomes																			
<p>On successful completion of this module, a student will be able to:</p> <ul style="list-style-type: none"> • Solve linear equations using matrix methods. • Derive and solve linear programming models using graphical methods. • Solve linear programming problems using the simplex method. • Construct truth tables to illustrate the truth-values of different propositions. • Determine the truth-value of propositions involving quantifiers. • Enter data and construct formulae including financial functions in Microsoft Excel. 										<p>Learning and teaching methods and strategies:</p> <p>This module will be presented by three lectures and one practical per week.</p> <p>The lectures will be used to present the mathematical material. Opportunities in lectures will be given to students to work through exercise sheets based on material covered. Help will be provided to any student who has learning difficulties with particular material.</p> <p>The practicals will introduce students to spreadsheets. Practical will be used for two purposes:</p> <ul style="list-style-type: none"> - To demonstrate to students spreadsheet tasks. - For students to gain experience and competency in performing spreadsheets tasks. 									
<i>Assessment criteria</i>										<i>Assessment methods</i>									
<p>Fail (<40%) Inability to identify and describe key concepts of the knowledge domain.</p> <p>Pass (40–54%) Ability to identify and describe key concepts of the knowledge domain.</p> <p>Merit 2 (55-62%) Ability to discuss key concepts clearly and interpret their relative importance in the knowledge domain.</p> <p>Merit 1 (63-69%) Ability to apply solutions to problems in a range of relevant contexts. An ability to employ a comprehensive range of specialised skills.</p> <p>Distinction (70 – 100%) All of the above to an excellent level, with the ability to analyse and design solutions to a high standard for a range of complex or unseen problems.</p>										<p>70% Final Module Exam 30% Practical Assessment</p>									

Indicative content
Matrices: Plotting Straight Lines, Matrix Computations, and Solving Linear Equations. Linear Programming: Graphical and Simplex Methods. Introduction to Logic: Logical operators, Truth Tables, Universal and Existential Quantifiers. Introduction to Spreadsheets: Spreadsheet Basics, Data Entry and Formatting, Constructing Basic Formulae and Use of Financial Functions.

Essential material for independent learning
Lipschutz, S, (1982), Essential Computer Mathematics, Mc Graw – Hill. Morgan & O’ Neill, (2000), Essential Computer Applications, 3e, Gill & Macmillan
Supplementary material for independent learning
Giannasi, F and Robert Low, (1995), Maths for computing and information technology, Longman Scientific & Technical.