Access to Higher Education Unit

This unit forms part of an Access to HE Diploma. If delivering the graded version of this unit, please refer to the Provider Handbook for details on grading descriptors and the application of these across units within your programme.

Unit Title: Discrete Networks & Linear Programming

Graded Unit Reference Number: GA33MTH33

Ungraded Unit Reference Number: UA33MTH33

Module: Mathematics

Level: Three (3)

Credit Value: Three (3)

Minimum Guided Learning Hours: 30

Learning Outcome (The Learner will):	Assessment Criterion (The Learner can):
1. Understand algorithms used on networks.	1.1 Apply Kruskal's and Prim's algorithms to find a minimum spanning tree.
	1.2 Use Dijkstra's algorithm to determine the shortest path in a network.
2. Understand basic route inspection.	2.1 Use the route inspection algorithm to find the shortest route in a network.
3. Understand critical path analysis	3.1 Construct an activity network diagram from precedence information.
	3.2 Use forward and backward pass methods to calculate earliest and latest event times.
	3.3 Identify critical paths and calculate total project duration.
	3.4 Construct cascade (Gantt) charts and scheduling diagrams.
4. Understand basic linear programming.	4.1 Formulate a linear programming problem from a given context.
	4.2 Represent a two-variable linear programming problem graphically.

4.3	Find the optimal solution in a feasible region using objective line or vertex testing methods.