

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: Introductory Algorithms & Graphs

Graded Unit Reference Number: GA33MTH34

Ungraded Unit Reference Number: UA33MTH34

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 basic algorithms.	1.1 Define the concept of an algorithm and explain its key characteristics.
	1.2 Implement a simple algorithm.
	1.3 Carry out a sorting algorithm.
	1.4 Carry out a searching algorithm.
	1.5 Carry out bin packing algorithms and state their limitations
2. Understand basic graph structures and their uses.	2.1 Explain how graphs and networks can be used to create mathematical models.
	2.2 Define key terms in graph theory, including: vertices, edges, valency, path, connected and tree.
	2.3 Represent graphs using network diagrams and matrices.
	2.4 Evaluate whether a graph is traversable.
	2.5 Interpret a range of different types of graphs, including: simple graphs, digraphs and weighted graphs.

3. Understand inequalities and regions.

3.1 Solve linear/quadratic inequalities in one and two variables.

3.2 Represent linear constraints as inequalities and sketch feasible regions.

3.3 Identify possible solutions that satisfy multiple inequalities.