Changing lives through learning

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: Logic and Number Systems

Graded Unit Reference Number: GA33MTH28

Ungraded Unit Reference Number: UA33MTH28

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 the relationships between standard number systems in bases 2, 10 & 16	1.1 Convert values between denary, binary and hexadecimal number systems
	1.2 Perform simple calculations using integers in binary and hexadecimal
2. Understand conventional representations of binary numbers related to programming	2.1 Solve calculation problems involving floating point binary notation
	2.2 Explain binary representations of signed integers, including one's complement and two's complement
3. Understand the use and representation of logic gates in circuits	3.1 Solve problems involving the representation of logic gates in circuit diagrams
	3.2 Solve problems involving truth tables for combinations of logic gates
4. Understand the use and representation of Boolean logic	4.1 Represent logic gates and circuits using Boolean algebra, including basic logical operators: conjunction, disjunction and negation
	4.2 Use truth tables to verify the laws of Boolean algebra, including De Morgan's laws

4.3	Apply the laws of Boolean algebra to simplify the arrangement of logic gates in circuits