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: Logarithms and Exponentials

Graded Unit Reference Number: GA33MTH09

Ungraded Unit Reference Number: UA33MTH09

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 use of logarithms	1.1	For straightforward examples using base 10 and base 2, illustrate the relationship between the logarithm of a real number and the base used
	1.2	State the laws of logarithms (for addition and subtraction, and for multiplication of a logarithm by a constant)
	1.3	Solve problems using the laws of logarithms
	1.4	Use a calculator to solve equations of the form $a^x = b$
2. Understand the functions of ex and ln x and their properties	2.1	Define the value of e
	2.2	Sketch the graphs of the functions $y = e^x$ and $y = \ln x$
	2.3	Describe the properties of the functions $y = e^x$ and $y = \ln x$
	2.4	Identify situations that can be modelled by the exponential function
3. Change the base of a logarithm	3.1	Solve equations involving logarithms and exponentials e.g. $10^x = 0.4$, $e^2x + 2e^x + 1 = 0$, $\log_2 x + \log_4 x + 1 = 0$

4. Reduce equations to linear form	4.1	Reduce equations of the form $y = ax^b$ and $y = ab^x$ to linear form
	4.2	Plot graphs of transformed data and calculate constants to find a relationship for the given data
	4.3	Solve problems related to experimental data