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: Trigonometric Methods

Graded Unit Reference Number: GA33MTH02

Ungraded Unit Reference Number: UA33MTH02

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.	Solve problems involving right angle triangles	1.1	Use Pythagoras' Theorem and the sine, cosine and tangent ratios to solve right angle triangles
2.	Solve problems for triangles with no right angle	2.1	Use the sine and cosine rules to solve triangles
		2.2	Solve 2-D and 3-D problems
3.	Understand the relationship between degrees and radians	3.1	Give the definition of a radian
		3.2	Convert degrees to radians and vice-versa
		3.3	Use the radian formulae for arc length and area of sector to solve problems
4.	Solve simple trigonometric equations	4.1	Find the solutions, in a given range, for simple trigonometric equations, e.g. $\sin 2\theta = 0.3$ for $0 < \theta < 360°$ or $\tan(\theta + 1) = 2$ for $0 < \theta \leq 2\pi$
5.	Solve problems using trigonometric identities	5.1	Solve equations using the Pythagorean identity, and the compound angle, double angle and factor formulae
		5.2	Prove identities using the above formulae
		5.3	Rearrange the expression $a\cos\theta + b\sin\theta$ into the form $r\cos(\theta \pm \alpha)$ or $r\sin(\theta + \alpha)$

	5.4	Solve equations of the form a.cos θ + b.sin θ = c
	5.5	Find the maximum and minimum points for the graph of y = a.cos θ + b.sin θ
6. Understand the properties of simple trigonometric functions	6.1	Sketch graphs of sin θ, cos θ and tan θ for any value of θ
	6.2	Identify symmetry and periodicity properties of graphs of trigonometric functions
	6.3	Use a trigonometric graphs and quadrant diagrams to find possible values of an angle within a given range e.g. $0 < \theta < 360°$, given its sine, cosine or tangent