

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: Differentiation

Graded Unit Reference Number: GA33MTH14

Ungraded Unit Reference Number: UA33MTH14

Module: Mathematics; Maths for Computing

Level: Three (3)

Credit Value: Three (3)

Minimum Guided Learning Hours: 30

Units barred for selection against this unit:

- Additional Calculus (GA36MTH22 / UA36MTH22)

Learning Outcome (The Learner will):	Assessment Criterion (The Learner can):
1. Understand the principles of differentiation and use differentiation to solve problems	1.1 Correctly use the notation $f'(x)$ or $\frac{dy}{dx}$ to represent derivatives of functions
	1.2 Differentiate polynomial expressions
	1.3 Use first order differentials to find the gradient to a curve for different values of x
	1.4 Determine equations for the tangent and the normal at specific points on a curve, e.g. $y = ax^n$, $y = ax^2 + bx + c$
	1.5 Use first order differentials to determine the maxima and minima for polynomial expressions
	1.6 Use first order differentials to determine rates of change and solve problems
2. Use differentiation to sketch quadratic and cubic equations	2.1 Find the co-ordinates of turning points and sketch the graphs of straightforward polynomial functions of third order or less

3. Understand the use some standard derivatives	3.1	Solve problems involving the derivatives of the functions e^{kx} , $\ln x$, $\sin kx$ and $\cos kx$
	3.2	Solve problems involving derivatives of functions in the form $f(x)g(x)$ and $f(g(x))$