

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: Additional Calculus

Graded Unit Reference Number: GA33MTH22

Ungraded Unit Reference Number: UA33MTH22

Module: Mathematics

Level: Three (3)

Credit Value: Six (6)

Minimum Guided Learning Hours: 60

Units barred for selection against this unit:

- Differentiation (GA33MT14)
- Integration (GA33MTH06)

Learning Outcome (The Learner will):	Assessment Criterion (The Learner can):
1. Understand differentiation	1.1 Solve differentiation problems involving stationary points
	1.2 Use the second order derivative to determine the nature of stationary points
2. Understand how to use rules for differentiation	2.1 Apply the chain/ product/ quotient rules to solve problems
	2.2 Solve differentiation problems involving functions given parametrically
	2.3 Solve differentiation problems involving relations which are implicit
	2.4 Solve differentiation problems involving rates of change
3. Understand how to use standard results for differentiation	3.1 Solve differentiation problems involving trigonometric ratios

	3.2	Solve differentiation problems involving exponential/ logarithmic functions (e^x , a^x , $\ln x$)
4. Understand integration	4.1	Find the value of an integral within defined limits
	4.2	Solve integration problems involving areas under curves
5. Understand how to use rules for integration	5.1	Solve integration problems involving the reverse of the chain rule
	5.2	Use standard patterns to solve integration problems
	5.3	Use partial fractions to solve integration problems
	5.4	Use integration by substitution to solve problems
	5.5	Use integration by parts to solve problems
6. Understand how to solve first order differential equations	6.1	Apply separation of variables to solve problems involving first order differential equations