

**Unit Title:** Application of Higher Mathematical Skills – Graphical, Sets, Calculus

**Level:** 3

**Credit Value:** 9

**GLH:**

**NOCN Unit Code:** RB1/3/NO/002

**QCA Unit Reference**

**Grading Descriptors:** 1, 3, 7

This unit has 4 learning outcomes.

<b>LEARNING OUTCOMES</b>	<b>ASSESSMENT CRITERIA</b>
<b>The learner will:</b>	<b>The learner can:</b>
1. Apply graphical techniques to linear functions	1.1. Draw graphs of linear equations 1.2. Calculate gradient and intercept 1.3. Apply the general equation of a straight line 1.4. Produce and interpret at least 2 graphs using experimental data
2. Apply graphical techniques to quadratic functions	2.1. Construct quadratic graphs 2.2. Use graphical methods to solve quadratic equations 2.3. Use graphical methods to solve a pair of non-linear simultaneous equations
3. Use rules of logic and probability	3.1. Use standard set notation 3.2. Construct Venn diagrams and use to solve at least 2 problems 3.3. Estimate and calculate probabilities of combined events including the use of addition and multiplication rules of probability for mutually exclusive and independent events

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LEARNING OUTCOMES	ASSESSMENT CRITERIA
<b>The learner will:</b>	<b>The learner can:</b>
4. Apply the basic principles and techniques of calculus	4.1. Differentiate polynomial expressions 4.2. Find the gradient of a curve – the graph of a known function 4.3. Calculate at least 2 rates of change 4.4. Calculate the stationary points of at least two curves 4.5. Find the equations of tangents to at least two curves 4.6. Integrate polynomial expressions 4.7. Use integration to find the area under at least two curves

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### ASSESSMENT INFORMATION

**Guidance:**

This grid gives details of the assessment activities to be used with the unit attached. Please refer to the NOCN Handbook for definitions of each activity and the expectations for assessment practice and evidence for moderation.

**The assessment activities for this unit are indicated in the table below:**

**Key: P = Prescribed** – this assessment method *must* be used to assess the unit.  
**O = Optional** – this assessment method *could* be used to assess the unit.

<b>Case study</b>		<b>Project</b>	
<b>Written question &amp; answer/test/exam</b>	<b>P</b>	<b>Role play/simulation</b>	
<b>Essay</b>		<b>Practical demonstration</b>	
<b>Report</b>		<b>Group discussion</b>	
<b>Oral question and answer</b>		<b>Performance/exhibition</b>	
<b>Written description</b>		<b>Production of artefact</b>	
<b>Reflective log / diary</b>		<b>Practice file</b>	

### Signposting Key Skills

This unit offers clear opportunities for learners to provide evidence of achievement in Key Skills achievement in the following skill area/s:

<b>Key Skill</b>		<b>Wider Key Skill</b>	
Communication		Working with others	
Information Technology		Problem solving	
Application of Number		Improving Own Learning and	

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**Level:**  
**Credit Value:**  
**GLH:**  
**NOCN Unit Code:**  
**QCA Unit Reference Code:**  
**Accredited Start date:**  
**Accredited End date:**  
**Unit Sector/Subject area:**  
**Grading descriptors:**  
**Availability for Use:**

<b>Purpose and Aim of the Unit</b>	<b>Free Text</b>
<b>Restrictions on the Availability</b>	<b>Free Text or N/A</b>
<b>Additional Assessment Requirements</b>	<b>Free Text or N/A</b>
<b>Details of relationship between the Unit and the NOS</b>	<b>Free Text or N/A</b>
<b>Details of relationship between the Unit and Standards (not NOS)</b>	<b>Free Text or N/A</b>
<b>Endorsement of the Unit by</b>	<b>Free Text or N/A</b>