

## 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:** Proof

**Graded Unit Reference Number:** GA33MTH35

**Ungraded Unit Reference Number:** UA33MTH35

**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 role and structure of mathematical proof.	1.1 Explain the purpose of proof and how it differs from experimental or numerical evidence.
	1.2 Identify key components of a logical mathematical argument.
2. Understand a range of core proof techniques.	2.1 Use direct proof to verify mathematical statements.
	2.2 Apply proof by exhaustion or counterexample as appropriate.
	2.3 Use proof by contradiction to solve suitable problems.
3. Understand the use of mathematical induction in proofs.	3.1 Use mathematical induction to prove results involving sums of series or recurrence relations.
	3.2 Use mathematical induction to prove divisibility by a given integer.
	3.3 Use mathematical induction to prove general statements involving matrix multiplication.
4. Develop and communicate mathematical reasoning.	4.1 Construct clearly written proofs using appropriate language and notation.

4.2 Identify and explain errors or gaps in incomplete or flawed proofs.