

## 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:** Matrix Algebra and Geometry

**Graded Unit Reference Number:** GA33MTH30

**Ungraded Unit Reference Number:** UA33MTH30

**Module:** Mathematics

**Level:** 3

**Credit Value:** 3

**Minimum Guided Learning Hours:** 30

Learning Outcome (The Learner will):	Assessment Criterion (The Learner can):
1. Understand the rules of matrix algebra	1.1 Solve problems involving basic matrix arithmetic, including addition and subtraction
	1.2 Solve problems involving matrix multiplication
	1.3 Show that matrix multiplication is associative but, generally, not commutative
	1.4 Calculate the determinant and inverse of a 2 x 2 matrix, and explain the condition where an inverse cannot be found
2. Understand the use of matrices to represent transformations in 2D	2.1 Solve problems involving linear transformations, including rotations, reflections, and enlargements
	2.2 Explain the effect of the transformation represented by the identity matrix
	2.3 Use the inverse of a 2 x 2 matrix to reverse a linear transformation
	2.4 Solve problems involving area scale factors and the determinant of a 2 x 2 matrix
3. Understand the use of matrices to solve simultaneous equations	3.1 Solve problems involving linear simultaneous equations using matrices

4. Understand eigenvalues and eigenvectors

4.1 Calculate eigenvalues and eigenvectors for 2 x 2 matrices