## Access to H.E. National Programme Unit

| Unit Title: | Vectors |  |  |
| :---: | :---: | :---: | :---: |
| Graded Unit Code: | GA33MTH12 | Ungraded Unit Code: | UA33MTH12 |
| Pathway(s): | Science and Engineering Construction and the Built Environment |  |  |
| Module(s): | Mathematics |  |  |
| Level: | 3 | Credit Value: | 3 |
| Valid from: | $1^{\text {st }}$ August 2014 | Valid to: | 31 ${ }^{\text {st }}$ July 2024 |

The following QAA grade descriptors must be applied if you are delivering the graded version of this unit:

| 1 | Understanding of the subject |
| :--- | :--- |
| 3 | Application of skills |
| 7 | Quality |


| LEARNING OUTCOMES | ASSESSMENT CRITERIA |  |
| :---: | :---: | :---: |
| The learner will: | The learner can: |  |
| 1. Understand the nature of vectors | 1.1 | Define the terms scalar and vector and give examples of each type |
|  | 1.2 | Represent line segments as vectors and use appropriate notation |
|  | 1.3 | Define position and free vectors |
| 2. Know how to manipulate vectors |  | Use Cartesian notation |
|  | 2.2 | Add and subtract, multiply by scalars and interpret the results |
|  | 2.3 | Calculate unit vectors |
| 3. Apply vectors to the geometry of a straight line | 3.1 | Formulate the equation of a line in vector notation |
|  |  | Determine whether three points are collinear |


| 4. Use scalar products to solve problems | 4.1Use scalar products to: <br> calculate the equation of perpendicular <br> lines from appropriate information |  |
| :--- | :--- | :--- |
|  | 4.2 | find the angle between two lines at the <br> point of intersection and |
|  | 4.3 | resolve vectors in a given direction |
| 5. Apply vectors to problems involving <br> displacement, velocities and forces | 5.1 | Use vectors to solve problems involving <br> displacement, velocities and forces |

