# Access to H.E.
# National Programme Unit

openawards

| Unit Title: | Series and Partial Fractions |
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| Graded Unit Code: | GA33MTH20 | Ungraded Unit Code: | UA33MTH20 |
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| Pathway(s): | Computing<br>Science and Engineering<br>Construction and the Built Environment |
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| Module(s): | Maths for Computing<br>Mathematics |
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| Level: | 3 | Credit Value: | 3 |
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| Valid from: | 1st August 2014 | Valid to: | 31st 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 |
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| 3 | Application of skills |
| 7 | Quality |

| LEARNING OUTCOMES | ASSESSMENT CRITERIA |
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| **The learner will:** | **The learner can:** |

| 1. Recognise and use arithmetic and geometric series | 1.1 | Define the terms arithmetic series and geometric series |
| | 1.2 | Given the formula for an arithmetic series find the $nth$ term |
| | 1.3 | State the formula for the sum of the first n natural numbers and find the sum for different values of $n.$ |
| | 1.4 | Find the $nth$ term, the sum to $n$ terms of a finite geometric series |
| | 1.5 | Find sum to infinity of a convergent geometric series |
| | 1.6 | Solve problems involving both arithmetic and geometric series |
| 2. Solve problems involving binomial series | 2.1 | Identify and expand a binomial expression of the form $(a+b)^n$ for positive values of $n$ |
| | 2.2 | Calculate the values of x for which the expansion of $(1+x)^n$ is valid where n is any number |
| | 2.3 | Use the binomial to calculate approximations and errors |
| 3. Formulate and use partial fractions | 3.1 | Expand rational expressions into their partial fractions |
| | 3.2 | Expand partial fractions into polynomial approximations, using the binomial expansion |