# 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:** Series and Partial Fractions

**Graded Unit Reference Number:** GA33MTH20

**Ungraded Unit Reference Number:** UA33MTH20

**Module:** Mathematics; Maths for Computing

**Level:** Three (3)

**Credit Value:** Three (3)

**Minimum Guided Learning Hours:** 30

| Learning Outcome (The Learner will): | | Assessment Criterion (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 |