



Mathematics Department – Lower Sixth Further Maths C4 Scheme of Work

Textbook: Edexcel Modular Mathematics Core Mathematics 4

Unit 1: Partial Fractions

- 1.1 Adding and subtracting algebraic fractions
- 1.2 Partial fractions with two linear factors in the denominator
- 1.3 Partial fractions with three or more linear factors in the denominator
- 1.4 Partial fractions with repeated linear factors in the denominator
- 1.5 Improper fractions into partial fractions

Unit 2: The Binomial Expansion

- 3.1 The binomial expansion for a positive integral index
- 3.2 Using the binomial expansion to expand $(a+bx)^n$
- 3.3 Using partial fractions with the binomial expansion

Test on units 1&2

Unit 3: Coordinate Geometry

- 2.1 Parametric equations used to define the coordinates of a point
- 2.2 Using parametric equations in coordinate geometry
- 2.3 Converting parametric equations into Cartesian equations
- 2.4 Finding the area under a curve given by parametric equations

Unit 4: Differentiation

- 4.1 Parametric differentiation
- 4.2 Implicit differentiation
- 4.3 Differentiating the function a^x
- 4.4 Differentiation and rates of change
- 4.5 Simple differential equations

Test on units 3&4

Unit 5: Integration

- 6.1 Integrating standard functions
- 6.2 Integrating using the reverse of the chain rule
- 6.3 Using trigonometric identities in integration
- 6.4 Using partial fractions to integrate expressions
- 6.5 Using standard patterns to integrate expressions
- 6.6 Integration by substitution
- 6.7 Integration by parts
- 6.8 Numerical Integration
- 6.9 Integration to find areas and volumes
- 6.10 Using integration to solve differential equations
- 6.11 Differential equations in context

Test on unit 5

Unit 6: Vectors

- 5.1 Vector definitions and vector diagrams
- 5.2 Vector arithmetic and the unit vector
- 5.3 Using vector to describe points in 2 or 3 dimensions
- 5.4 Cartesian components of a vector in 2 dimensions
- 5.5 Cartesian components of a vector in 3 dimensions
- 5.6 Extending 2 dimensional vector results to 3 dimensions
- 5.7 The scalar product of two vectors
- 5.8 The vector equation of a straight line
- 5.9 Intersecting straight line vector equations
- 5.10 The angle between two straight lines

Test on unit 6