|  |
| --- |
| Stage 2 Specialist MathematicsAlignment with Australian Curriculum Content Descriptions |

|  |
| --- |
| **Topic 1: Mathematical Induction** |
| Subtopic 1.1: Proof by Mathematical Induction | ACMSM064 |
|  | ACMSM065 |
|  | ACMSM066 |

|  |
| --- |
| **Topic 2: Complex Numbers** |
| Subtopic 2.1: Cartesian and Polar Forms | ACMSM077 |
|  | ACMSM078 |
|  | ACMSM079 |
|  | ACMSM080 |
|  | ACMSM081 |
|  | ACMSM082 |
|  | ACMSM083 |
| Subtopic 2.2: The Complex (Argand) Plane | ACMSM084 |
|  | ACMSM085 |
|  | ACMSM086 |
| Subtopic 2.3: Roots of Complex Numbers | ACMSM087 |
|  | ACMSM088 |
| Subtopic 2.4: Factorisation of Polynomials | ACMMG266 (10A) |
|  | ACMSM089 |
|  | ACMSM090 |
|  | ACMSM091 |

|  |
| --- |
| **Topic 3: Functions and Sketching Graphs** |
| Subtopic 3.1: Composition of Functions | ACMSM092 |
|  | ACMSM093 |
| Subtopic 3.2: One-to-one Functions | ACMSM094 |
|  | ACMSM095 |
|  | ACMSM096 |
| Subtopic 3.3: Sketching Graphs | ACMSM098 |
|  | ACMSM099 |
|  | ACMSM100 |

|  |
| --- |
| **Topic 4: Vectors in Three Dimensions** |
| Subtopic 4.1: The Algebra of Vectors in Three Dimensions  | ACMSM101 |
| Subtopic 4.2: Vector and Cartesian Equations | ACMSM102 |
|  | ACMSM103 |
|  | ACMSM104 |
|  | ACMSM105 |
|  | ACMSM106 |
|  | ACMSM107 |
|  | ACMSM108 |
| Subtopic 4.3: Systems of Linear Equations | ACMSM109 |
|  | ACMSM110 |

|  |
| --- |
| **Topic 5: Integration Techniques and Applications** |
| Subtopic 5.1: Integration Techniques | ACMSM095 |
|  | ACMSM116 |
|  | ACMSM117 |
|  | ACMSM118 |
|  | ACMSM119 |
|  | ACMSM120 |
|  | ACMSM121 |
|  | ACMSM122 |
|  | ACMSM123 |
| Subtopic 5.2: Applications of Integral Calculus | ACMSM124 |
|  | ACMSM125 |

|  |
| --- |
| **Topic 6: Rates of Change and Differential Equations**  |
| Subtopic 6.1: Implicit Differentiation | ACMSM128 |
| Subtopic 6.2: Differential Equations | ACMSM129 |
|  | ACMSM130 |
|  | ACMSM131 |
|  | ACMSM132 |
| Subtopic 6.3: Pairs of Varying Quantities – Polynomials of Degree 1 to 3 | ACMSM111 |
|  | ACMSM113 |
| Subtopic 6.4: Related Rates, Velocity, and Tangents | ACMSM111 |
|  | ACMSM112 |
|  | ACMSM113 |
|  | ACMSM114 |
| Subtopic 6.5: Trigonometric Parameterisations | ACMSM113 |
|  | ACMSM115 |