

Year 11 Specialist Mathematics

Work rate calendar (WRC) 2025

Term 1

All students are expected to participate in all online lessons and complete all assessment as outlined in this **Work rate calendar**.

Teachers may adjust topics, class work, assessment and submission dates. Adjustments will be communicated via QLearn or during lessons.

Assessment

Supervised assessment Summative exams are to be supervised by the student's official exam supervisor.

Non-supervised assessment Students must sign declaration of academic integrity.

Week	Dates	Unit	Topic	Class work / Assessment to be submitted
1	27 Jan – 31 Jan	Unit 1: Combinatorics, proof, vectors and matrices	Monday 27 January — Australia Day Holiday	
			Tuesday 28 January – Welcome calls: Years Prep–12	
			Wednesday 29 January – Learning for success: Years Prep–12	
			Topic 1 Combinatorics	
Lesson 1 Counting techniques				
2	3 Feb – 7 Feb		Monday 3 February — Brainstorm Productions: Years 7–12 (11am–2pm)	
			Lesson 1 Factorial and permutations	
			Lesson 2 Permutations involving restrictions and applications Lesson 3 Combinations	
3	10 Feb – 14 Feb		Friday 14 February — Senior orientation day: Years 10–12	
			Lesson 1 Applications of combinations and permutations	
		Topic 2 Introduction to proofs		
		Lesson 2 Number systems, terminology of proofs Lesson 3 Proof by counter example and direct proofs		
4	17 Feb – 21 Feb	Lesson 1 Proof by contradiction		
		Topic 3 Vectors in the plane		
		Lesson 2 Vectors and Scalars Lesson 3 Vectors in two dimensions – polar form		
5	24 Feb – 28 Feb	Lesson 1 Vectors in two dimensions – polar form		
		Lesson 2 Vectors in two dimensions – component form		
		Lesson 3 Vectors in two dimensions – unit vectors		
6	3 Mar – 7 Mar	Topic 5 Matrices		
		Lesson 1 Matrix definition and notation, addition, subtraction and scalar multiplication		
		Lesson 2 Matrix multiplication Lesson 3 Determinants and inverses		
7	10 Mar – 14 Mar	Lesson 1 Matrix algebra and solving matrix equations		
		Lesson 2 Solving 2 x 2 linear equations		
		Lesson 3 Catch up		
8	17 Mar – 21 Mar	Revision		
		Lessons 1 – 3 Revision		
9	24 Mar – 28 Mar	Exams: Year 11	FA1 (Exam)	
		Monday 24 March – Friday 28 March	Due to be received at BrisbaneSDE by 5pm Friday 28 March	
		Revision and exam	FA2 (PSMT)	
		FA1 - exam is based on Unit 1 Topics 1, 2, 3 and 5 material.	Released in QLearn Friday 28 March	
10	31 Mar – 4 Apr	Thursday 3 April — Cross country / Fun run: Prep – Year 12	FA2 (PSMT)	
		Topic 4 Algebra of Vectors in two dimensions	Checkpoint 1	
		Lesson 1 FA2 Introduction and Overview Lesson 2 Vector representations and Vector operations Lesson 3 Assignment Lesson	To be uploaded to QLearn Friday 4 April	

Disclaimer: Information contained in this document is correct at time of publishing.

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Term 2

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Assessment					
Supervised assessment		Summative exams are to be supervised by the student's official exam supervisor.			
Non-supervised assessment		Students must sign declaration of academic integrity.			
Week	Dates	Unit	Topic	Class work / Assessment to be submitted	
1	21 Apr – 25 Apr	Unit 1: Combinatorics, proof, vectors and matrices	Monday 21 April — Easter Monday		
			Tuesday 22 April – Thursday 24 April — School camp: Year 11		
			Friday 25 April — Anzac Day		
			Topic 4 Algebra of Vectors in two dimensions (continued)		
Lessons 1 – 3 Catch up (if available)					
2	28 Apr – 2 May		Lessons 1 – 2 Assignment lessons		FA2 (PSMT)
			Lesson 3 Scalar product		Checkpoint 2: Draft To be uploaded to QLearn by 5pm Friday 2 May
3	5 May – 9 May		Monday 5 May — Labour Day		
			Lesson 1 Parallel and perpendicular vectors		
			Lesson 2 Scalar and vector resolute		
Lesson 3 Catch up (if available)					
4	12 May – 16 May	Lesson 1 Draft feedback			
		Lessons 2 – 3 Application of Forces in two dimensions – Forces and equilibrium including inclined planes			
5	19 May – 23 May	Topic 1 Complex numbers		FA2 (PSMT)	
		Lesson 1 Introduction to complex numbers		Checkpoint 3: Final	
		Lesson 2 Basic operations on complex numbers		To be uploaded to QLearn by 5pm Monday 19 May	
Lesson 3 Complex conjugates and division of complex numbers					
6	26 May – 30 May	Lesson 1 The complex plane			
		Topic 2 Complex arithmetic and algebra			
		Lesson 2 Complex numbers – magnitude and argument			
Lesson 3 Cartesian and polar form					
7	2 Jun – 6 Jun	Lesson 1 Operations in complex form			
		Lesson 2 Geometric interpretations of multiplication and division of complex numbers			
		Lesson 3 Subsets of the complex plane			
8	9 Jun – 13 Jun	Lessons 1 – 3 Roots of equations			
9	16 Jun – 20 Jun	Topic 3 Circle and geometric proofs			
		Lesson 1 Circle properties – Theorems 1, 2 and 3			
		Lesson 2 Circle properties – Theorems 4 and 5			
Lesson 2 Circle properties – Theorem 6					
10	23 Jun – 27 Jun	Unit 2: complex numbers, further proof, trigonometry, functions and transformations.	Friday 27 June — Athletics carnival / Sports day: Prep – Year 12		
			Lesson 1 – 2 Geometric proofs using vectors		
Lesson 3 Catch up					

Year 11 Specialist Mathematics

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Term 3

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Assessment				
Supervised assessment		Summative exams are to be supervised by the student's official exam supervisor.		
Non-supervised assessment		Students must sign declaration of academic integrity.		
Week	Dates	Unit	Topic	Class work / Assessment to be submitted
1	14 Jul – 18 Jul	Unit 2: complex numbers, further proof, trigonometry, functions and transformations.	Topic 4 Trigonometry and functions Lesson 1 Sketching graphs Lesson 2 Reciprocal trigonometric functions Lesson 3 Graphs of reciprocal trigonometric functions	
2	21 Jul – 25 Jul		Lesson 1 Pythagorean identities Lesson 2 Angle sum and difference for sines and cosines Lesson 3 Double-angle identities	
3	28 Jul – 1 Aug		Lesson 1 Product-sum identities Lesson 2 Applications of trigonometric identities Lesson 3 Applications of trigonometric identities	
4	4 Aug – 8 Aug		Topic 5 Matrices and transformations Lesson 1 Matrices and transformations – translations and reflections Lesson 2 Matrices and transformations – rotations and dilations Lesson 3 Combination of transformations	
5	11 Aug – 15 Aug		Wednesday 13 August — Royal Queensland (Ekka) Show Holiday Lesson 1 The inverse of linear transformations and interpreting the determinant of the transformation matrix Revision Lesson 2 Revision – Resources in QLearn	
6	18 Aug – 22 Aug		Revision Lesson 1 – 3 Revision – Resources in QLearn	
7	25 Aug – 29 Aug		Revision and exam FA3 - exam is based on Unit 2 material.	FA3 (Exam) To be received at BrisbaneSDE by 5pm Friday 29 August
8	1 Sept – 5 Sept	Unit 3: Further complex numbers, proof, vectors and matrices	Friday 5 September — Student free day Topic 5 Further Matrices Lesson 1 Applications of matrices – Dominance/Leslie Lesson 2 Applications of matrices – Dominance/Leslie	IA1 (PSMT) Released in QLearn Friday 5 September
9	8 Sept – 12 Sept		Lesson 1 IA1 Overview Lessons 2 – 3 IA1 Lessons	
10	15 Sept – 19 Sept		Exams: Year 11 Monday 15 September – Friday 19 September	IA1 (PSMT) Checkpoint 1
			Friday 19 September — Connect day: Years 11–12	To be uploaded to QLearn Wednesday 17 September

Year 11 Specialist Mathematics

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Term 4

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Assessment				
Supervised assessment		Summative exams are to be supervised by the student's official exam supervisor.		
Non-supervised assessment		Students must sign declaration of academic integrity.		
Week	Dates	Unit	Topic	Class work / Assessment to be submitted
1	6 Oct – 10 Oct	Unit 3: Further complex numbers, proof, vectors and matrices	Monday 6 October — King's Birthday Holiday Lesson 1 IA1 Lesson	
2	13 Oct – 17 Oct		Lesson 1 Matrix algebra Lesson 2 Gaussian elimination Lesson 1 Geometric interpretation of solutions	
3	20 Oct – 24 Oct		Topic 2 Mathematical induction and further proofs Lesson 1 Introduction to Mathematical induction Lesson 2 Summation proofs Lesson 3 Divisibility proofs	IA1 (PSMT) Checkpoint 2: Draft To be uploaded to QLearn by 5pm Monday 20 October
4	27 Oct – 31 Oct		Lesson 1 Proof of DeMoivre's theorem and multi-angle trigonometric identities proofs. Topic 3 Vectors in two and three dimensions Lessons 2 – 3 Introduction to vectors in three-dimensions	
5	3 Nov – 7 Nov		Lesson 1 Scalar product Lesson 2 Vector projections. Lesson 3 Geometric proofs including 3D vectors	
6	10 Nov – 14 Nov		Lesson 1 Applications involving displacement, force and relative velocity Lesson 2 Equations of spheres and parametric equations Lesson 3 Vector equations, parametric equations and cartesian equations of straight lines	IA1 (PSMT) Checkpoint 3: Final To be uploaded to QLearn by 5pm Friday 14 November
7	17 Nov – 21 Nov		Friday 21 November — Aquatic carnival: Prep – Year 11 Lesson 1 Vector products and normal vectors Lesson 2 Vector equations and cartesian equations of plane. Lesson 3 Cartesian equation of the path given as a vector equation	
8	24 Nov – 28 Nov		Exams: Year 11 Monday 24 November – Friday 28 November Friday 28 November — Final day: Years 10–11	
9	1 Dec – 5 Dec			
10	8 Dec – 12 Dec			