

# Year 12 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                       |   |
|----------------------------------|---|
| <b>Supervised assessment</b>     | Summative exams are to be supervised by the student's official exam supervisor. |
| <b>Non-supervised assessment</b> | Students must sign declaration of academic integrity.                           |

| Week  | Dates           | Unit   | Topic   | Class work / Assessment to be submitted |
|---|-----------------|--|---|---|
| 1   | 27 Jan – 31 Jan | Unit 3: Vectors, complex numbers and mathematical induction                            | Monday 27 January — Australia Day Holiday   |   |
|   |                 |  | Tuesday 28 January – Welcome calls: Years Prep–12                                     |   |
|   |                 |  | Wednesday 29 January – Learning for success: Years Prep–12                            |   |
|   |                 |  | <b>Topic 3 Complex numbers 2</b>  |   |
| Lesson 1 Revision of complex numbers                                    |                 |  |   |   |
| 2   | 3 Feb – 7 Feb   |  | Monday 3 February — Brainstorm Productions: Years 7–12 (11am–2pm)                     |   |
|   |                 |  | Lesson 1 Prove and use identities involving modulus and argument                      |   |
|   |                 |  | Lesson 2 Using De Moivre's Theorem to prove trig identities                           |   |
| Lesson 3 Equations of subsets on the complex plane — lines and circles. |                 |  |   |   |
| 3   | 10 Feb – 14 Feb |  | Friday 14 February — Senior orientation day: Years 10–12                              |   |
|   |                 | Lessons 1 Roots of complex numbers   |   |   |
| Lessons 2 & 3 Factor and remainder theorems applied to complex numbers  |                 |  |   |   |
| 4   | 17 Feb – 21 Feb | Lesson 1 Conjugate root theorem  |   |   |
|   |                 | Lessons 2 & 3 Solving complex polynomial equations                                     |   |   |
| 5   | 24 Feb – 28 Feb | <b>Revision</b>  |   |   |
|   |                 | Lessons 1, 2 & 3 Catch up and/or revision  |   |   |
| 6   | 3 Mar – 7 Mar   | Lessons 1, 2 & 3 revision  |   |   |
| 7   | 10 Mar – 14 Mar | Lessons 1, 2 & 3 revision  |   |   |
| 8   | 17 Mar – 21 Mar | <b>Revision and exam</b>   |   |   |
|   |                 | Lessons 1, 2 & 3 revision and exam   | <b>IA2 Exam</b><br>To be received at BrisbaneSDE by 5.00 pm<br><b>Friday 21 March</b> |   |
| 9   | 24 Mar – 28 Mar | <b>Topic 1 Integration</b>   |   |   |
| Lessons 1 & 2 Integration by substitution                               |                 |  |   |   |
| Lesson 3 Integration using trig identities                              |                 |  |   |   |
| 10  | 31 Mar – 4 Apr  | Thursday 3 April — Cross country / Fun run: Prep – Year 12                             |   |   |
|   |                 | Lesson 1 Inverse trig functions arcsine, arccosine, arctangent                         |   |   |
|   |                 | Lesson 2 The derivative of the inverse trig functions                                  |   |   |
|   |                 | Lesson 3 The integral of $\frac{\pm 1}{\sqrt{a^2-x^2}}$ and $\frac{a}{\sqrt{a^2+x^2}}$ |   |   |

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## Work rate calendar (WRC) 2025

## Term 2

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| Assessment                       |   |
|----------------------------------|---|
| <b>Supervised assessment</b>     | Summative exams are to be supervised by the student's official exam supervisor. |
| <b>Non-supervised assessment</b> | Students must sign declaration of academic integrity.                           |

| Week                                      | Dates           | Unit  | Topic   | Class work / Assessment to be submitted |
|---|-----------------|---|---|---|
| 1   | 21 Apr – 25 Apr | Unit 4: Calculus and statistics   | Monday 21 April — Easter Monday                             |   |
|   |                 |   | Tuesday 22 April – Thursday 24 April — School camp: Year 11 |   |
|   |                 |   | Friday 25 April — Anzac Day                                 |   |
| Lesson 1 Integration by parts             |                 |   |   |   |
| Lesson 2 Integration by partial fractions |                 |   |   |   |
| 2   | 28 Apr – 2 May  |   | Lesson 1 Simpson's rule                                     |   |
|   |                 |   | Lesson 2 Area between curves                                |   |
|   |                 |   | Lesson 3 Catch up   |   |
| 3   | 5 May – 9 May   |   | Monday 5 May — Labour Day                                   |   |
|   |                 |   | Lesson 1 Volumes of solids of revolution                    |   |
|   |                 | Lesson 2 The probability density function   |   |   |
| 4   | 12 May – 16 May | <b>Topic 2 Rates of change</b>  |   |   |
|   |                 | Lesson 1 Implicit differentiation   |   |   |
|   |                 | Lesson 2 Related rates of change  |   |   |
| 5   | 19 May – 23 May | Lesson 3 First order differential equations   |   |   |
|   |                 | Lessons 1 & 2 First order differential equations  |   |   |
|   |                 | Lesson 3 Slope fields of first order differential equations.                            |   |   |
| 6   | 26 May – 30 May | Lessons 1, 2 & 3 Applications of differential equations                                 |   |   |
| 7   | 2 Jun – 6 Jun   | Lessons 1, 2 & 3 Momentum and resultant forces  |   |   |
| 8   | 9 Jun – 13 Jun  | Lesson 1 Simple harmonic motion   |   |   |
| 9   | 16 Jun – 20 Jun | Lessons 2 & 3 Non-uniform motion and differential equations                             |   |   |
|   |                 | <b>Topic 3 Statistical inference</b>  |   |   |
| 10  | 23 Jun – 27 Jun | Lessons 1, 2 & 3 Sample means, simulations and approximation of the normal distribution |   |   |
|   |                 | Thursday 26 June — Senior formal: Year 12   |   |   |
|   |                 | Friday 27 June — Athletics carnival / Sports day: Prep – Year 12                        |   |   |
|   |                 | Lesson 1 Sample statistics  |   |   |
|   |                 | Lesson 2 Confidence intervals using the sample mean                                     |   |   |

# Year 12 Specialist Mathematics

## Work rate calendar (WRC) 2025

### Term 3

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| Assessment                       |                   |   |   |   |
|----------------------------------|-------------------|---|---|---|
| <b>Supervised assessment</b>     |                   | Summative exams are to be supervised by the student's official exam supervisor. |   |   |
| <b>Non-supervised assessment</b> |                   | Students must sign declaration of academic integrity.                           |   |   |
| Week                             | Dates             | Unit  | Topic   | Class work / Assessment to be submitted   |
| 1                                | 14 Jul – 18 Jul   | Unit 4: Calculus and statistics   | Lessons 1 – 3 Catch up lessons  |   |
| 2                                | 21 Jul – 25 Jul   |   | <b>IA3 Revision</b><br>Lessons 1 – 3 Revision   |   |
| 3                                | 28 Jul – 1 Aug    |   | Lessons 1 – 3 Revision  |   |
| 4                                | 4 Aug – 8 Aug     |   | <b>Revision and Exam</b><br>Lessons 1 – 3 Revision and exam   | <b>IA3 Exam</b><br>To be received at BrisbaneSDE by 5.00 pm <b>Tuesday 5 August</b> |
| 5                                | 11 Aug – 15 Aug   | Units 3 & 4 revision  | <b>Wednesday 13 August — Royal Queensland (Ekka) Show Holiday</b><br><b>External exam preparations</b><br>Lessons 1 – 3 external exam preparations. |   |
| 6                                | 18 Aug – 22 Aug   |   | <b>External exam preparations</b><br>3&4Lessons 1 – 3 external exam preparations.   |   |
| 7                                | 25 Aug – 29 Aug   |   | <b>External exam preparations</b><br>Lessons 1 – 3 external exam preparations.  |   |
| 8                                | 1 Sept – 5 Sept   |   | <b>Mock exams: Year 12</b><br>Monday 1 September – Thursday 4 September<br>Friday 5 September — Student free day                                    |   |
| 9                                | 8 Sept – 12 Sept  |   | <b>Mock exams: Year 12</b><br>Monday 8 September – Friday 12 September  |   |
| 10                               | 15 Sept – 19 Sept |   | Friday 19 September — Connect day: Years 11–12<br>Lessons 1 – 3 Revision  |   |

# Year 12 Specialist Mathematics

## Work rate calendar (WRC) 2025

**Term 4**

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| Assessment                       |   |
|----------------------------------|---|
| <b>Supervised assessment</b>     | Summative exams are to be supervised by the student's official exam supervisor. |
| <b>Non-supervised assessment</b> | Students must sign declaration of academic integrity.                           |

| Week                   | Dates           | Unit  | Topic  | Class work / Assessment to be submitted  |  |
|------------------------|-----------------|---|--|--|--|
| 1                      | 6 Oct – 10 Oct  | Units 3 & 4 revision                                  | Monday 6 October — King's Birthday Holiday   |  |  |
|                        |                 |   | <b>Revision</b>                              |  |  |
| Lessons 1 – 3 Revision |                 |   |  |  |  |
| 2                      | 13 Oct – 17 Oct |   | Lessons 1 – 3 Revision                       |  |  |
| 3                      | 20 Oct – 24 Oct |   | Lessons 1 – 3 Revision                       |  |  |
| 4                      | 27 Oct – 31 Oct |   | <b>Exams: Year 12</b>                        | Monday 27 October – Friday 31 October    |  |
| 5                      | 3 Nov – 7 Nov   |   | <b>Exams: Year 12</b>                        | Monday 3 November – Friday 7 November    |  |
| 6                      | 10 Nov – 14 Nov |   | <b>Exams: Year 12</b>                        | Monday 10 November – Friday 14 November  |  |
| 7                      | 17 Nov – 21 Nov |   | <b>Exams: Year 12</b>                        | Monday 17 November – Tuesday 18 November |  |
|                        |                 |   | Wednesday 19 November — Celebration: Year 12 |  |  |
|                        |                 | Thursday 20 November — Graduation: Year 12            |  |  |  |
|                        |                 | Friday 21 November — Final day: Year 12               |  |  |  |
|                        |                 | Friday 21 November — Aquatic carnival: Prep – Year 11 |  |  |  |
| 8                      | 24 Nov – 28 Nov |   |  |  |  |
| 9                      | 1 Dec – 5 Dec   |   |  |  |  |
| 10                     | 8 Dec – 12 Dec  |   |  |  |  |