VCE HIGH PERFORMANCE TUTORING

Exam Preparation Program (EPP)

VCE Specialist Mathematics Units 3 & 4: Timetable

Dear Parents & Guardians,

The VCE Specialist Mathematics Unit 3 & 4 EPP is structured to support conceptual understanding, modelling/problem-solving expectations, and balance between by-hand reasoning and technology.

The program prioritises the highest-yield concepts, builds skills progressively, and includes revision and exam-style application throughout the program. Weekly tutorials are very important supplements to each workshop to enable necessary systemic revision.

The timetable herein contains a macro summary of each workshop and tutorial focus. The structure is intentionally flexible; to enable adjustment once the lead educator understands student strengths, weaknesses and school progress in more detail.

Across the program, the lead educator and tutor incorporate proven study techniques and strategies of high performing ATAR students, including proof scaffolding, active recall, worked examples, mathematical communication drills

The overarching objective of the VCE EPP is to build the students' confidence, accuracy and exam readiness over time, so that by the final weeks they are not just revising content but performing strongly under VCE exam conditions.

Please direct enquiries to vceepp@shortcoursesau.edu.au or phone 1300 747 430 or enrol online following the QR code.

Yours sincerely,

Jonathon Ainscough
Chief Executive Officer

STUDY

FACE TO FACE OR ONLINE

Evening and weekend classes available Sunday to Friday.

COST

$35.00 PER HOUR

Flexible payment options, $105.00 per week for 16 weeks.

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Course Timetable: VCE Specialist Mathematics 3/4

Week 1

Time	Date	Delivery Details	Session Summary
04.20 PM to 06.10 PM	Monday 29 June 2026	Room L1R1 Level 1, 350 Collins St, Melbourne or Google Meet	**Workshop** (1 Tutor:10 Student Ratio) • Introduce the structure of VCE Specialist Mathematics 3/4, including SACs, modelling/problem-solving expectations, and the balance between by-hand reasoning and technology. • Begin content with logic, mathematical argument and proof language. • Teach conjectures, implications, equivalences, and necessary and sufficient conditions. • Introduce quantifiers and the use of examples and counter-examples. • Build confidence with short proof-style questions that set the tone for the course. • Conjectures, implications, equivalences, if and only if statements, necessary and sufficient conditions, quantifiers: “for all” and “there exists”, examples and counter-examples, introduction to proof structure. • Learning strategies: proof scaffolding, active recall, worked examples, mathematical communication drills.
07.05 PM to 07.55 PM	Thursday 2 July 2026	Google Meet	**Tutorial** (1 Tutor:5 Student Ratio) • Review responses, ask questions and practice exam techniques

Week 2

Time	Date	Delivery Details	Session Summary
04.20 PM to 06.10 PM	Monday 6 July 2026	Room L1R1 Level 1, 350 Collins St, Melbourne or Google Meet	**Workshop** (1 Tutor:10 Student Ratio) • Extend discrete mathematics with formal proof techniques. • Teach direct proof, proof by contradiction, proof by contrapositive and proof by cases. • Introduce proof by mathematical induction and how to structure a valid induction argument. • Apply proof ideas to divisibility, inequalities, sequences and algebraic statements. • Practice writing clear, logically sequenced arguments. • Direct proof, proof by contradiction, proof by contrapositive, proof by cases, mathematical induction, divisibility arguments, inequalities, proof using sequences and series contexts. • Learning strategies: scaffold fading, proof templates, error analysis, retrieval practice.
07.05 PM to 07.55 PM	Thursday 9 July 2026	Google Meet	**Tutorial** (1 Tutor:5 Student Ratio) • Review responses, ask questions and practice exam techniques

Week 3

Time	Date	Delivery Details	Session Summary
04.20 PM to 06.10 PM	Monday 13 July 2026	Room L1R1 Level 1, 350 Collins St, Melbourne or Google Meet	**Workshop** (1 Tutor:10 Student Ratio) • Begin Unit 3 function work with rational functions and simple quotient functions. • Teach asymptotic behaviour, intercepts, stationary points, points of inflection and symmetry. • Connect algebraic form to graph features and behaviour near vertical and horizontal asymptotes. • Introduce partial fractions as a way of rewriting rational functions. • Practice graph sketching and interpretation using both by-hand methods and technology. • Rational functions of low degree, simple quotient functions, asymptotic behaviour, vertical and horizontal asymptotes, stationary points, points of inflection, symmetry, introduction to partial fractions. • Learning strategies: graph-feature tables, dual coding, worked-example comparison, active recall.

07.05 PM to 07.55 PM	Thursday 16 July 2026	Google Meet	**Tutorial** (1 Tutor:5 Student Ratio) • Review responses, ask questions and practice exam techniques

Week 4

Time	Date	Delivery Details	Session Summary
04.20 PM to 06.10 PM	Monday 20 July 2026	Room L1R1 Level 1, 350 Collins St, Melbourne or Google Meet	**Workshop** (1 Tutor:10 Student Ratio) • Extend rational functions and connect them more explicitly to calculus and algebra. • Use first and second derivatives to analyse graph shape and turning behaviour. • Strengthen decomposition of rational expressions into partial fractions. • Solve graph and equation questions involving quotient functions. • Build fluency in interpreting numerical, graphical and symbolic information together. • Partial fractions of low-degree rational functions, first derivative and stationary points, second derivative and concavity, inflection points for rational graphs, equation solving with rational functions, sketching quotient-function graphs. • Learning strategies: graph-calculus linking, interleaving, deliberate correction, CAS checking.
07.05 PM to 07.55 PM	Thursday 23 July 2026	Google Meet	**Tutorial** (1 Tutor:5 Student Ratio) • Review responses, ask questions and practice exam techniques

Week 5

Time	Date	Delivery Details	Session Summary
04.20 PM to 06.10 PM	Monday 27 July 2026	Room L1R1 Level 1, 350 Collins St, Melbourne or Google Meet	**Workshop** (1 Tutor:10 Student Ratio) • Begin complex numbers in Cartesian form and connect them to the Argand diagram. • Teach addition, subtraction, multiplication and division of complex numbers. • Solve polynomial equations over the complex field, including by completing the square and quadratic factorisation. • Introduce the conjugate root theorem. • Represent regions in the Argand plane using complex relations. • Complex numbers in Cartesian form, Argand diagram, operations on complex numbers, solving polynomial equations, completing the square over complex numbers, quadratic factorisation, conjugate root theorem, regions on the Argand diagram. • Learning strategies: visual reasoning, worked examples, algebraic fluency drills, pattern recognition.
07.05 PM to 07.55 PM	Thursday 30 July 2026	Google Meet	**Tutorial** (1 Tutor:5 Student Ratio) • Review responses, ask questions and practice exam techniques

Week 6

Time	Date	Delivery Details	Session Summary
04.20 PM to 06.10 PM	Monday 3 August 2026	Room L1R1 Level 1, 350 Collins St, Melbourne or Google Meet	**Workshop** (1 Tutor:10 Student Ratio) • Extend complex numbers into polar form and geometric interpretation. • Teach modulus, argument and conversion between Cartesian and polar forms. • Introduce De Moivre's theorem for integral powers. • Find powers and roots of complex numbers in polar form. • Explore roots of unity and their geometric patterns in the complex plane. • Polar form of complex numbers, modulus and argument, De Moivre's theorem, powers of complex numbers, roots of complex numbers, nth roots of unity, geometric interpretation in the complex plane. • Learning strategies: diagram-based reasoning, worked-example comparison, active recall, geometric pattern recognition.

07.05 PM to 07.55 PM	Thursday 6 August 2026	Google Meet	**Tutorial** (1 Tutor:5 Student Ratio) • Review responses, ask questions and practice exam techniques

Week 7

Time	Date	Delivery Details	Session Summary
04.20 PM to 06.10 PM	Monday 10 August 2026	Room L1R1 Level 1, 350 Collins St, Melbourne or Google Meet	**Workshop** (1 Tutor:10 Student Ratio) • Begin advanced calculus with second derivatives and deeper graph analysis. • Use second derivatives to determine concavity and points of inflection. • Introduce implicit differentiation and related rates of change. • Apply chain rule ideas in more sophisticated contexts. • Connect Specialist calculus to graph sketching and modelling. • Second derivatives, concavity, points of inflection, implicit differentiation, related rates, chain rule applications, graph analysis using first and second derivatives. • Learning strategies: graph-calculus links, scaffolded derivations, worked examples, error analysis.
07.05 PM to 07.55 PM	Thursday 13 August 2026	Google Meet	**Tutorial** (1 Tutor:5 Student Ratio) • Review responses, ask questions and practice exam techniques

Week 8

Time	Date	Delivery Details	Session Summary
04.20 PM to 06.10 PM	Monday 17 August 2026	Room L1R1 Level 1, 350 Collins St, Melbourne or Google Meet	**Workshop** (1 Tutor:10 Student Ratio) • Run a structured midpoint revision session consolidating Unit 3 content so far. • Use mixed questions from proof, rational functions, complex numbers and advanced differentiation. • Focus on common errors in logical structure, asymptote analysis, polar form and implicit differentiation. • Help students identify when a question is primarily algebraic, graphical, proof-based or calculus-based. • Create individual improvement goals for the second half of the program. • Learning strategies: interleaving, timed retrieval, error logs, metacognitive reflection, targeted feedback.
07.05 PM to 07.55 PM	Thursday 20 August 2026	Google Meet	**Tutorial** (1 Tutor:5 Student Ratio) • Review responses, ask questions and practice exam techniques

Week 9

Time	Date	Delivery Details	Session Summary
04.20 PM to 06.10 PM	Monday 24 August 2026	Room L1R1 Level 1, 350 Collins St, Melbourne or Google Meet	**Workshop** (1 Tutor:10 Student Ratio) • Begin the Unit 3 & 4 vectors and space sequence. • Teach vector arithmetic, magnitude, unit vectors and resolution into components. • Explore linear dependence and independence with geometric interpretation. • Introduce dot product and use it for angles, projections and perpendicularity. • Apply vectors to geometric proofs and simple motion questions. • Vector addition and subtraction, scalar multiplication, position vectors, magnitude and unit vectors, rectangular components, linear dependence and independence, dot product, scalar resolute and vector resolute, parallel and perpendicular vectors. • Learning strategies: diagram interpretation, worked examples, visual-to-symbolic translation, retrieval practice.
07.05 PM to 07.55 PM	Thursday 27 August 2026	Google Meet	**Tutorial** (1 Tutor:5 Student Ratio) • Review responses, ask questions and practice exam techniques

Week 10

Time	Date	Delivery Details	Session Summary
04.20 PM to 06.10 PM	Monday 31 August 2026	Room L1R1 Level 1, 350 Collins St, Melbourne or Google Meet	**Workshop** (1 Tutor:10 Student Ratio) • Extend vector work into three dimensions and geometric applications. • Introduce the cross product and its determinant form. • Teach vector proofs of standard geometric results. • Develop vector equations of lines in two and three dimensions. • Connect vector techniques to systems of equations and geometric reasoning. • Cross product in three dimensions, determinant form of cross product, normal vectors, vector proofs, vector equation of a line, parametric equations of a line, geometric interpretation of systems, lines in two and three dimensions. • Learning strategies: proof scaffolding, geometric reasoning, worked-example comparison, active recall.
07.05 PM to 07.55 PM	Thursday 3 September 2026	Google Meet	**Tutorial** (1 Tutor:5 Student Ratio) • Review responses, ask questions and practice exam techniques

Week 11

Time	Date	Delivery Details	Session Summary
04.20 PM to 06.10 PM	Monday 7 September 2026	Room L1R1 Level 1, 350 Collins St, Melbourne or Google Meet	**Workshop** (1 Tutor:10 Student Ratio) • Continue space and measurement with planes, curves and vector calculus. • Teach vector, parametric and Cartesian equations of planes. • Introduce vector equations of curves and conversion to Cartesian form in 2D. • Begin vector calculus for motion: position, velocity and acceleration vectors. • Analyse whether particles' paths cross and whether particles actually meet. • Vector equation of a plane, Cartesian equation of a plane, parametric equations of curves, vector equations of curves, path sketching from vector functions, position vector as a function of time, velocity and acceleration vectors, crossing paths vs meeting. • Learning strategies: graphing and sketching, computational thinking, worked examples, modelling practice.
07.05 PM to 07.55 PM	Thursday 10 September 2026	Google Meet	**Tutorial** (1 Tutor:5 Student Ratio) • Review responses, ask questions and practice exam techniques

Week 12

Time	Date	Delivery Details	Session Summary
04.20 PM to 06.10 PM	Monday 14 September 2026	Room L1R1 Level 1, 350 Collins St, Melbourne or Google Meet	**Workshop** (1 Tutor:10 Student Ratio) • Begin advanced anti-differentiation and integration techniques. • Teach anti-derivatives involving 1/x, inverse circular function forms, and substitution. • Introduce integration by parts and anti-differentiation using partial fractions. • Use trigonometric identities in integration. • Apply symbolic and numerical integration with technology where appropriate. • Anti-differentiation of 1/x, inverse circular anti-derivative forms, substitution u=g(x), trigonometric identities in integration, partial fractions in integration, integration by parts, numerical and symbolic integration using technology. • Learning strategies: stepwise modelling, worked-example comparison, CAS verification, error analysis.
07.05 PM to 07.55 PM	Thursday 17 September 2026	Google Meet	**Tutorial** (1 Tutor:5 Student Ratio) • Review responses, ask questions and practice exam techniques

Week 13

Time	Date	Delivery Details	Session Summary

04.20 PM to 06.10 PM	Monday 21 September 2026	Room L1R1 Level 1, 350 Collins St, Melbourne or Google Meet	**Workshop** (1 Tutor:10 Student Ratio) • Extend integration into applications and differential equations. • Use definite integrals to calculate areas, arc length, surface area and volumes of revolution. • Introduce differential equations from modelling contexts. • Solve simple differential equations by separation of variables and verify solutions. • Introduce direction fields and Euler's method. • Definite integrals in applications, areas bounded by curves, arc length for parametrically defined curves, surface area of solids of revolution, volumes of revolution, differential equations from context, separation of variables, direction fields, Euler's method, logistic differential equation introduction. • Learning strategies: modelling practice, graphical reasoning, interleaving, problem decomposition.
07.05 PM to 07.55 PM	Thursday 24 September 2026	Google Meet	**Tutorial** (1 Tutor:5 Student Ratio) • Review responses, ask questions and practice exam techniques

Week 14

Time	Date	Delivery Details	Session Summary
04.20 PM to 06.10 PM	Monday 5 October 2026	Room L1R1 Level 1, 350 Collins St, Melbourne or Google Meet	**Workshop** (1 Tutor:10 Student Ratio) • Continue calculus through rectilinear motion and kinematics. • Use velocity-time graphs to analyse motion. • Apply differentiation, anti-differentiation and differential equations to particle motion. • Work with multiple forms of acceleration. • Connect motion questions to both Specialist and Methods-style reasoning. • Rectilinear motion, velocity-time graph, displacement, velocity and acceleration relationships, one-dimensional motion modelling, mixed calculus and motion questions. • Learning strategies: formula mapping, worked examples, graph interpretation, active recall.
07.05 PM to 07.55 PM	Thursday 8 October 2026	Google Meet	**Tutorial** (1 Tutor:5 Student Ratio) • Review responses, ask questions and practice exam techniques

Week 15

Time	Date	Delivery Details	Session Summary
04.20 PM to 06.10 PM	Monday 12 October 2026	Room L1R1 Level 1, 350 Collins St, Melbourne or Google Meet	**Workshop** (1 Tutor:10 Student Ratio) • Begin Unit 4 statistics with linear combinations of random variables and the sample mean. • Teach expectation and variance rules for sums and linear combinations of independent random variables. • Extend these ideas to normally distributed variables. • Introduce the distribution of the sample mean and simulation-based understanding. • Connect theory to repeated sampling and interpretation. • Expectation of sums and linear combinations, variance of sums and linear combinations, independent random variables, normal linear combinations, sample mean as a random variable, mean and standard deviation, approximate normality of the sample mean, simulation of repeated random sampling. • Learning strategies: formula-structure mapping, simulation, worked examples, interpretation scaffolds.
07.05 PM to 07.55 PM	Thursday 15 October 2026	Google Meet	**Tutorial** (1 Tutor:5 Student Ratio) • Review responses, ask questions and practice exam techniques

Week 16

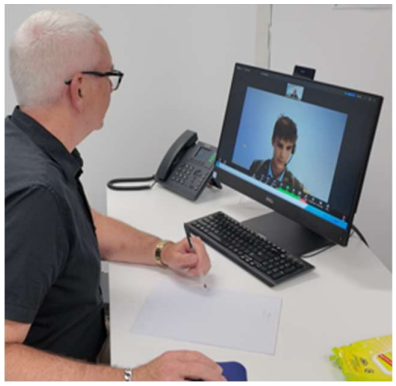
Time	Date	Delivery Details	Session Summary

04.20 PM to 06.10 PM	Monday 19 October 2026	Room L1R1 Level 1, 350 Collins St, Melbourne or Google Meet	**Workshop** (1 Tutor:10 Student Ratio) • Conclude with confidence intervals, hypothesis testing and final mixed revision. • Teach confidence intervals for the population mean and how interval width changes with confidence and sample size. • Introduce hypothesis testing for a population mean, including null and alternative hypotheses, test statistics, p-values and one-tailed/two-tailed tests. • Interpret hypothesis test outcomes in context and discuss errors in decision-making. • Finish with a final mixed Units 3 & 4 revision session covering proof, complex numbers, vectors, advanced calculus and statistics. • Confidence intervals for a population mean, approximate confidence intervals using z, role of sample size and confidence level, null hypothesis and alternative hypothesis, test statistic, significance level, p-value, one-tail and two-tail tests, interpretation in context, conditional probability interpretation of testing errors, final mixed Units 3 & 4 revision. • Learning strategies: metacognitive reflection, exam wrappers, simulation, targeted feedback, final exam checklist.
07.05 PM to 07.55 PM	Thursday 22 October 2026	Google Meet	**Tutorial** (1 Tutor:5 Student Ratio) • Review responses, ask questions and practice exam techniques

VCE Examination

Time	Date	Delivery Details	Session Summary
04.30 PM to 06.30 PM	Monday 26 October 2026	Date & Time not Confirmed	The 2026 VCE examination timetable will be published by VCAA in May. Written examinations will be completed between Monday 26 October 2026 and Wednesday 18 November 2026

LEARN MORE



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