

Varsity College
Year 11 Mathematical Methods 2025

Term 1

Week	Date	Topics	Assessment
1	27-31 January O-Week Australia Day: Monday	<ul style="list-style-type: none"> Orientation Week 	
2	3-7 February	Unit 1 Topic 1: Surds, algebra, functions and probability Surds <ul style="list-style-type: none"> Simplifying surds Quadratics <ul style="list-style-type: none"> Review quadratic relationships Solving quadratic equations 	
3	10-14 February Swimming Carnival: Tuesday	Graphs of relations <ul style="list-style-type: none"> Circle relations Square root functions Sketching the graphs of relations 	
4	17-21 February	Unit 1 Topic 2: Binomial expansion and cubic functions Cubic functions <ul style="list-style-type: none"> Solving cubic equations Graphing cubic functions Modelling cubic functions 	
5	24-28 February	Binomial expansion <ul style="list-style-type: none"> Pascal's triangle Binomial theorem 	
6	3-7 March GC25: Wednesday	Unit 1 Topic 4: Trigonometric functions Circular measure and radian measure <ul style="list-style-type: none"> Radians and the unit circle Exact values The Pythagorean identity 	
7	10-14 March	<ul style="list-style-type: none"> Solving trigonometric equations 	
8	17-21 March	<ul style="list-style-type: none"> REVISION 	
9	24-28 March	EXAM BLOCK	Exam
10	31 March - 4 April	Trigonometric functions <ul style="list-style-type: none"> Sketching trigonometric functions Transformations of trigonometric functions Modelling trigonometric functions 	

School holidays: Friday April 4 - Sunday April 19

Term 2

Week	Date	Topics	Assessment
1	21-25 April Easter Monday ANZAC Day: Friday	Unit 1 Topic 3: Functions and relations Introduction to functions and relations <ul style="list-style-type: none"> • Function notation, domain and range • Piece-wise functions • Modelling piece-wise functions 	
2	28 April-2 May GC25: Tuesday	Unit 2 Topic 1: Exponential functions Introduction to exponential functions <ul style="list-style-type: none"> • The index laws • Solving exponential functions 	PSMT Out Lesson 3
3	5-9 May Labour Day: Monday	<ul style="list-style-type: none"> • The graph of exponentials • Modelling exponential functions 	
4	12-16 May	Unit 2 Topic 2: Logarithms and logarithmic functions Logarithms and logarithmic laws <ul style="list-style-type: none"> • Logarithmic laws • Solving indices using logarithms 	Draft Due
5	19-23 May	<ul style="list-style-type: none"> • The graph of logarithms • Solving logarithms 	
6	26-30 May	EXAM BLOCK	PSMT Due Lesson 3
7	2-6 June GC25: Wednesday	Unit 3 Topic 5: Discrete random variables <ul style="list-style-type: none"> • Discrete random variables • Determining discrete probability distributions 	
8	9-13 June GC25: Wednesday	<ul style="list-style-type: none"> • Mean, variance and standard deviation 	
9	16-20 June	<ul style="list-style-type: none"> • Bernoulli and binomial random variables 	
10	23-27 June	<ul style="list-style-type: none"> • Finding the sample size • Model and solve problems 	
School holidays: Saturday June 28 - Sunday July 13			

Term 3

Week	Date	Topics	Assessment
1	14-18 July	Unit 2 Topic 3: Introduction to differential calculus Rates of change and the concept of derivatives <ul style="list-style-type: none"> • Average rates of change • Instantaneous rates of change • First principles 	
2	21-25 July	<ul style="list-style-type: none"> • The power rule • Negative/rational powers 	
3	28 July-1 August	Unit 2 Topic 4: Applications of differential calculus Graphical applications of derivatives <ul style="list-style-type: none"> • Equation of the tangent • Equation of the normal • Kinematics 	
4	4-8 August	<ul style="list-style-type: none"> • Stationary points • The second derivative 	
5	11-15 August GC25: Tuesday	<ul style="list-style-type: none"> • Maximum and minimum problems • Graphs of the derivative 	
6	18-22 August GC25: Tuesday	Unit 2 Topic 5: Further differentiation Differentiation rules <ul style="list-style-type: none"> • The chain rule • The product rule 	
7	25-29 August GC Show Day: Friday	<ul style="list-style-type: none"> • The quotient rule • Solve problems that involve combinations of the rules 	
8	1-5 September	<ul style="list-style-type: none"> • REVISION 	
9	8-12 September	EXAM BLOCK	Exam
10	15-19 September	EXAM BLOCK	
School holidays: Saturday September 20 – Sunday October 4			

Term 4

Week	Date	Topics	Assessment
1	6-10 October King's Birthday: Monday	Unit 3 Topic 1: Differentiation of exponential and logarithmic functions Calculus of exponential functions <ul style="list-style-type: none"> Estimate the limit of $\frac{a^h-1}{h}$ as $h \rightarrow 0$ The graph of $y = e^x$ The graph of $y = \ln(x)$ 	
2	13-17 October	<ul style="list-style-type: none"> The derivative of $y = e^x$ Solving exponential and logarithmic functions 	
3	20-24 October	Calculus of logarithmic functions <ul style="list-style-type: none"> The derivative of $y = \ln(x)$ Modelling problems 	PSMT Out Lesson 1
4	27-31 October	Unit 3 Topic 2: Differentiation of trigonometric functions and differentiation rules Calculus of trigonometric functions <ul style="list-style-type: none"> The derivative of $y = \sin(x)$ The derivative of $y = \cos(x)$ 	
5	3-7 November	<ul style="list-style-type: none"> Modelling and solving problems Differentiation rules <ul style="list-style-type: none"> The chain rule 	Draft Due
6	10-14 November	<ul style="list-style-type: none"> The product rule The quotient rule 	
7	17-21 November	<ul style="list-style-type: none"> Solve problems that involve combinations of the rules 	PSMT Due Lesson 1
8	24-28 November	EXAM BLOCK	
School holidays: Saturday November 29 – Monday January 26			