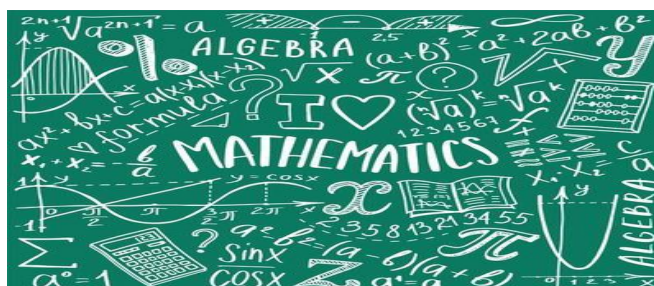


MTM415117 Maths Methods 4

15 TCE Points



You will work through the following units as part of Maths Methods 4

Unit 1: Function Study

You will work with the equations and graphs of polynomial, hyperbolic, exponential and logarithmic functions.

Unit 2: Circular Functions

You will work with the equations and graphs of trigonometric functions.

Unit 3: Differential Calculus

You will differentiate many functions. The derivatives will be used to sketch graphs and solve various problems including those involving optimisation and rate.

Unit 4: Integral Calculus

You will integrate many functions and use integration techniques to solve problems.

Unit 5: Probability

You will solve problems involving probability distributions as well as statistical inference.

How you'll be assessed:

Common types of internal assessments are:

- Assignments
- Tests
- Mid-year exam

To be successful in this subject, students need

- Confidence in their algebra skills to manipulate, factorise and solve equations
- Clear, logical thinking
- A strong work ethic and persistence to complete all set work both during and out of class

The external assessment for this subject is a 3 hour exam. The dates for external exams in November are non-negotiable.

COMPLETION OF WORK POLICY

Assessment due dates are provided in the Program of Learning and on Canvas. Work must be submitted by the due date unless an approved extension has been granted. Unapproved late submissions will incur penalties as outlined in the *Completion of Work Policy*. Students needing extensions should contact their subject teacher before the due date with valid reasons, such as illness or unforeseen circumstances.

For more details refer to the Launceston College: [Completion of Work Policy](#).

ACADEMIC INTEGRITY

All senior secondary students in Tasmania are expected to uphold academic integrity, meaning they complete their work honestly and fairly. This includes properly referencing any ideas, images, or information borrowed from others, allowing teachers to distinguish between original and sourced content.

Assignments will be submitted through Canvas, email, hard copy as directed in the task sheet.

For more details, refer to the Launceston College: [Academic Integrity Policy](#).

REFERENCING

Referencing is not required in Maths Methods 4. Students are reminded to show all their working to obtain full marks.

COURSE DOCUMENT

Please refer to the TASC website for further information: [Mathematics Methods - TASC](#)

OTHER COURSE REQUIREMENTS

Students require their own Casio Classpad calculator which may be hired from the library. Several A4 exercise books as well as stationary will be needed during the year. Printed booklets of the textbook will be provided and an electronic version will be available.

Week	Date	Program of Learning 2025	Notes / Assessments
1	6 Feb	Function Study - Pascal's Triangle, Binomial Theorem	<i>Yr 11s and 12's return February 8 (Thursday)</i>
2	10 Feb	Function Study - Polynomial Division, Remainder Theorem Graph Sketching, Linear Functions	<i>Assignment 1</i>
3	17 Feb	Function Study - Quadratic, Cubic Functions	<i>Assignment 2</i>
4	24 Feb	Function Study - $y = (ax + b)^n + c$, $n = -1, -2, \frac{1}{2}$	<i>Wed 26 Feb – Launceston Cup</i>
5	3 Mar	Function Study - Index Laws, Exponential Equations, Log definition and log properties, Log Equations	<i>Assignment 3</i>
6	10 Mar	Function Study - Exponential and Log Graphs	<i>Mon 10 Mar – Public Holiday</i>
7	17 Mar	Function Study - Relations, Inverse Functions, sketching inverses	<i>Assignment 4</i>
8	24 Mar	Function Study - Inverse Functions algebraically, Composite Functions	Function Study Test
9	31 Mar	Circular Functions - Radian Measure, Trig Definitions	
10	7 Apr	Circular Functions - CAST Diagram, Symmetry, Exact values	<i>Assignment 5</i>
Term 1 break – Saturday 12 April – Sunday 27 April			
1	28 Apr	Circular Functions - Trig Equations	
2	5 May	Circular Functions - Trig Graphs	<i>Assignment 6</i>
3	12 May	Circular Functions - Trig Modelling	Circular Functions Test
4	19 May	Differentiation - Rules of Differentiation, The derivative as a gradient function	
5	26 May	Differentiation - Limits, Differentiation from 1st principles	<i>Assignment 7</i>
6	2 June	Differentiation - Equations of Tangents and Normals Gradient graphs	<i>Fri 6 June - Moderation Day (LC students work from home)</i>
7	9 June	Differentiation - Stationary Points	<i>Mon 9 June – Public Holiday</i>
8	16 June	Mid-year Exam Revision	
9	23 June	Mid-year Exams	Mid-Year Assessments Level 3 & 4
10	30 June	Mid-year Exams	Mid-Year Assessments Level 3 & 4
Term 2 break – Saturday 5 July – Sunday 20 July			
1	21 July	Differentiation - The derivative as a rate of change	<i>Assignment 8</i>
2	28 July	Differentiation - Optimization Problems	Differentiation Test.
3	4 Aug	Integration - Integration Techniques	
4	11 Aug	Integration - Given $\frac{dy}{dx}$ find original function	<i>Assignment 9</i>
5	18 Aug	Integration - Definite Integrals, Areas under curves	Retest Function Study
6	25 Aug	Integration - Areas between curves	<i>Assignment 10</i>
7	1 Sep	Integration - Further Problems, Revision	Integration Test
8	8 Sep	Probability - MMF3 Probability Review	
9	15 Sep	Probability - Discrete Probability Distributions	Retest Trig or Differentiation
10	22 Sep	Probability - Binomial Probability Distribution	<i>Assignment 11 Retest Trig or Differentiation</i>
Term 3 break – Saturday 27 September – Sunday 12 October			
1	13 Oct	Probability - Normal Probability Distribution	<i>Assignment 12 Retest Integration</i>
2	20 Oct	Probability - Statistical Inference	Probability Test
3	27 Oct	Review for TASC Exams	Retest Probability <i>Fri 31 Oct - Moderation Day (LC students work from home)</i>
4	3 Nov	Review for TASC Exams	<i>Mon 3 Nov – Public Holiday</i>
Exams begin (Monday 10th November) - Exams end (Thursday 20th November)			

ASSESSMENT

Criterion-based assessment helps students see how well they're meeting course outcomes at the end of their study. While there is continuous feedback to guide learning, final assessments focus on showing what students have achieved by the end. Ratings are given as 'A', 'B', or 'C', based on course standards. A 't' indicates partial achievement below a 'C', and a 'z' means no evidence provided.

Schools follow TASC's quality assurance to keep standards consistent. More details are on the [TASC website](#). Final awards are based on both internal and TASC-supervised external assessments.

Criteria

The assessment for *Mathematics Methods* Level 4 will be based on the degree to which the learner can:

- 1. communicate mathematical ideas and information
- 2. apply mathematical reasoning and strategy in problem solving situations
- 3. use resources and organisational strategies
- 4. understand polynomial, hyperbolic, exponential and logarithmic functions*
- 5. understand circular functions*
- 6. use differential calculus in the study of functions*
- 7. use integral calculus in the study of functions*
- 8. understand binomial and normal probability distributions and statistical inference*

* = denotes criteria that are both internally and externally assessed

Award Requirements

The final award will be determined by the Office of Tasmanian Assessment, Standards and Certification from 13 ratings (8 from the internal assessment, 5 from the external assessment).

The minimum requirements for an award in *Mathematics Methods* Level 4 are as follows:

EXCEPTIONAL ACHIEVEMENT (EA)

11 'A' ratings, 2 'B' ratings (4 'A' ratings and 1 'B' rating from external assessment)

HIGH ACHIEVEMENT (HA)

5 'A' ratings, 5 'B' ratings, 3 'C' ratings (2 'A' ratings, 2 'B' ratings and 1 'C' rating from external assessment)

COMMENDABLE ACHIEVEMENT (CA)

7 'B' ratings, 5 'C' ratings (2 'B' ratings and 2 'C' ratings from external assessment)

SATISFACTORY ACHIEVEMENT (SA)

11 'C' ratings (3 'C' ratings from external assessment)

PRELIMINARY ACHIEVEMENT (PA)

6 'C' ratings

A learner who otherwise achieves the ratings for a CA (Commendable Achievement) or SA (Satisfactory Achievement) award but who fails to show any evidence of achievement in one or more criteria ('z' notation) will be issued with a PA (Preliminary Achievement) award.