

FOUNDATION MATHS

UNITS 1 & 2



SUBJECT OVERVIEW

Foundation Mathematics Units 1 and 2 focus on providing students with the mathematical knowledge, skills, understanding and dispositions to solve problems in real contexts for a range of workplace, personal, further learning, and community settings relevant to contemporary society.

UNIT 1 DESCRIPTION

Students study algebra in an everyday context (estimations, approximations, ratios, percentages and rates), Data (collection, presentation and analysis), Financial Mathematics and Measurement (including time).

UNIT 2 DESCRIPTION

Students study algebra (construction, use and interpretation of formulas and estimation, approximation and reasonableness of calculations).

WHAT KNOWLEDGE & SKILLS WILL I BUILD?

- Estimation
- Problem solving
- Data analysis
- Mathematical modelling

HOW WILL I BE ASSESSED IN THIS SUBJECT?

School assessed coursework (SACs) will assess your knowledge of the course content, ability to use technology and select and apply mathematical techniques. Assessments include investigation tasks, modelling tasks, problem solving tasks and tests. Class work and hurdle tasks will also be part of the evidence of meeting the course requirements.

WHAT ELSE DO I NEED TO KNOW?

This course requires purchasing a scientific calculator and the Jacaranda Maths Quest 11 Foundation Mathematics VCE Units 1 and 2 2E textbook.

FOUNDATION MATHS

UNITS 3 & 4



SUBJECT OVERVIEW

Foundation Mathematics Units 3 and 4 builds on the content knowledge from Foundation Mathematics Units 1 and 2. Students work on their real-life applied mathematics from a range of contexts including; financial mathematics, measurement, analysis of data and estimation and approximation.

UNIT 3 & 4 DESCRIPTION

Students cover estimation, calculations, algorithmic and computational thinking. They also look at collection, presentation and analysis of gathered and provided data. Money management (including GST, BAS, credit cards, home loans etc), the taxation system and economic trends are also studied. Finally students look at the use and application of the metric system and related measurement.

WHAT KNOWLEDGE & SKILLS WILL I BUILD?

- Estimation skills
- Computational thinking
- Critical thinking
- Problem solving

HOW WILL I BE ASSESSED IN THIS SUBJECT?

There are nine School Assessed tasks (SACs) and one end of year written examinations, where technology (Calculator) and notes (bound books) is allowed.

WHAT TYPES OF FURTHER STUDY OR CAREERS COULD THIS SUBJECT LEAD TO?

Supports students undertaking VET studies, students looking to go into apprenticeships and some university course will accept a 1-4 sequence of foundation mathematics as their maths (please seek up to date advice).

WHAT ELSE DO I NEED TO KNOW?

This course requires purchasing a scientific calculator and the Jacaranda Maths Quest 11 Foundation Mathematics VCE Units 3 and 4 2E textbook.

GENERAL MATHS

UNITS 1 & 2



SUBJECT OVERVIEW

General Mathematics is a continuation of the topics studied in Year 10 Mathematics, including linear algebra, statistics, geometry and financial arithmetic as well as some new topics: matrices, networks, number patterns and recursion. This course leads to General Mathematics Units 3 & 4, a prerequisite for many tertiary courses.

UNIT 1 DESCRIPTION

Students study data analysis, linear relations and matrices.

UNIT 2 DESCRIPTION

Students study data analysis, number patterns and recursion, graphs and networks, variations, measurement and trigonometry.

WHAT KNOWLEDGE & SKILLS WILL I BUILD?

- Problem solving
- Data analysis
- Mathematical modelling

HOW WILL I BE ASSESSED IN THIS SUBJECT?

School assessed coursework (SACs) will assess your knowledge of the course content, ability to use technology and select and apply mathematical techniques.

Assessments include investigation tasks, modelling tasks, problem solving tasks and tests. Class work and hurdle tasks will also be part of the evidence of meeting the course requirements.

WHAT ELSE DO I NEED TO KNOW?

This course requires purchasing a TiNspire CAS calculator and the textbook or ebook Cambridge Senior General Mathematics VCE Units 1 and 2.

This subject follows on from General or Advanced maths at year 10.

GENERAL MATHS

UNITS 3 & 4

SUBJECT OVERVIEW

General Mathematics builds on the content from General Mathematics Units 1 & 2. Students develop problem solving and analysis skills that are highly desired by employers and useful in a range of real world contexts such as financial mathematics, workflow management and data analysis. This course is a prerequisite for many tertiary courses

UNIT 3 DESCRIPTION

In Unit 3, students study 'Data Analysis' which includes univariate and bivariate data, linear modelling and time series data, and 'Recursion and Financial Modelling' which includes methods of calculating interest and depreciation, loans, annuities and perpetuities.

UNIT 4 DESCRIPTION

In Unit 4, students study 'Matrices' which includes representing information in a matrix, matrix arithmetic, inverse matrices, transition matrices and Leslie matrices, and 'Networks and Decision Mathematics' which includes paths, circuits, spanning trees, shortest path problems, problems involving flow through network and scheduling problems.

WHAT KNOWLEDGE & SKILLS WILL I BUILD?

- Problem solving
- Data analysis
- Mathematical modelling

HOW WILL I BE ASSESSED IN THIS SUBJECT?

There are four School Assessed tasks (SACs) and two end of year written examinations, where technology (CAS Calculator) and notes (bound books) is allowed.

WHAT TYPES OF FURTHER STUDY OR CAREERS COULD THIS SUBJECT LEAD TO?

- Statistics
- Business
- Economics
- Teaching
- Accounting
- Science
- Nursing
- IT

WHAT ELSE DO I NEED TO KNOW?

This course requires purchasing a TiNspire CAS calculator and the textbook or ebook Cambridge Senior General Mathematics VCE Units 3 and 4.



MATHS METHODS

UNITS 1 & 2



SUBJECT OVERVIEW

Mathematical Methods Units 1 and 2 provide an introductory study of simple elementary functions of a single real variable, algebra, calculus, probability and statistics and their applications in a variety of practical and theoretical contexts. The units are designed as preparation for Mathematical Methods Units 3 and 4 and contain assumed knowledge and skills for these Unit 3 & 4 units.

UNIT 1 DESCRIPTION

The focus of Unit 1 is the study of simple power and polynomial functions, introduction to rates of change and counting principles and their application to probability. The behaviour of functions and their graphs is to be explored in a variety of modelling contexts and theoretical investigations.

UNIT 2 DESCRIPTION

The focus of Unit 2 is the study of simple circular, exponential and logarithmic functions, the calculus of polynomial functions and related modelling applications. Students cover differentiation and anti-differentiation of polynomial functions by rule and related applications including the analysis of graphs.

WHAT KNOWLEDGE & SKILLS WILL I BUILD?

- Ability to apply mathematical techniques, routines, and processes to solve real world and mathematical problems
- Development of mental and by-hand approaches to estimation and computation.
- Skills in the use of technology to solve both mathematical and real-world problems

HOW WILL I BE ASSESSED IN THIS SUBJECT?

School assessed coursework (SACs) will assess your knowledge of the course content, ability to select and apply mathematical techniques and your ability to use CAS technology (the CAS calculator) to solve mathematical problems. Assessment includes investigation tasks, modelling tasks, problem solving tasks and tests.

WHAT ELSE DO I NEED TO KNOW?

- This course requires purchasing a TiNspire CAS calculator and the textbook or ebook Cambridge Senior Mathematical Methods VCE Units 1 and 2.
- This subject follows on from Advanced Maths at Year 10 (non advanced math students may be considered at the recommendation of their teacher).
- This subject is algebra and graph (function) heavy.
- This subject is fast paced with a high workload.

MATHS METHODS

UNITS 3 & 4



SUBJECT OVERVIEW

Mathematical Methods Units 3 and 4 extend the Unit 1 & 2 study of simple functions to include combinations of these functions, algebra, calculus, probability and statistical distributions and their applications in a variety of practical and theoretical contexts. It provides a foundation for study in various scientific fields including medical technology, economics, data analytics and engineering.

UNIT 3 DESCRIPTION

The focus of Unit 3 is the study of functions, relations and graphs, applications of derivatives and differentiation, and identifying and analysing key features of the functions and their graphs.

UNIT 4 DESCRIPTION

Unit 4 includes the relation between integration and the area of regions specified by lines or curves described by the rules of functions, and simple applications of this content including to probability distributions of discrete and continuous random variables and statistical inference.

WHAT KNOWLEDGE & SKILLS WILL I BUILD?

- Ability to apply mathematical techniques, routines, and processes to solve real world and mathematical problems.
- Development of mental and by-hand approaches to estimation and computation.
- Skills in the use of technology to solve both mathematical and real-world problems.

HOW WILL I BE ASSESSED IN THIS SUBJECT?

SACs will assess your knowledge of the course content, ability to select and apply mathematical techniques and your ability to use CAS technology (the CAS calculator) to solve mathematical problems. There are two end of year exams, a one hour exam with no calculator or notes and a two hour exam with CAS calculator and one bound reference.

WHAT TYPES OF FURTHER STUDY OR CAREERS COULD THIS SUBJECT LEAD TO?

- Engineering
- Science
- Pharmacy
- Computing
- Biomedicine
- Mathematics
- Statistics

WHAT ELSE DO I NEED TO KNOW?

- A TiNspire CAS calculator is compulsory.
- Mathematical Methods Unit 1 & 2 content is assumed knowledge.
- Course is fast paced and high workload.
- Some SACs may take place after school.