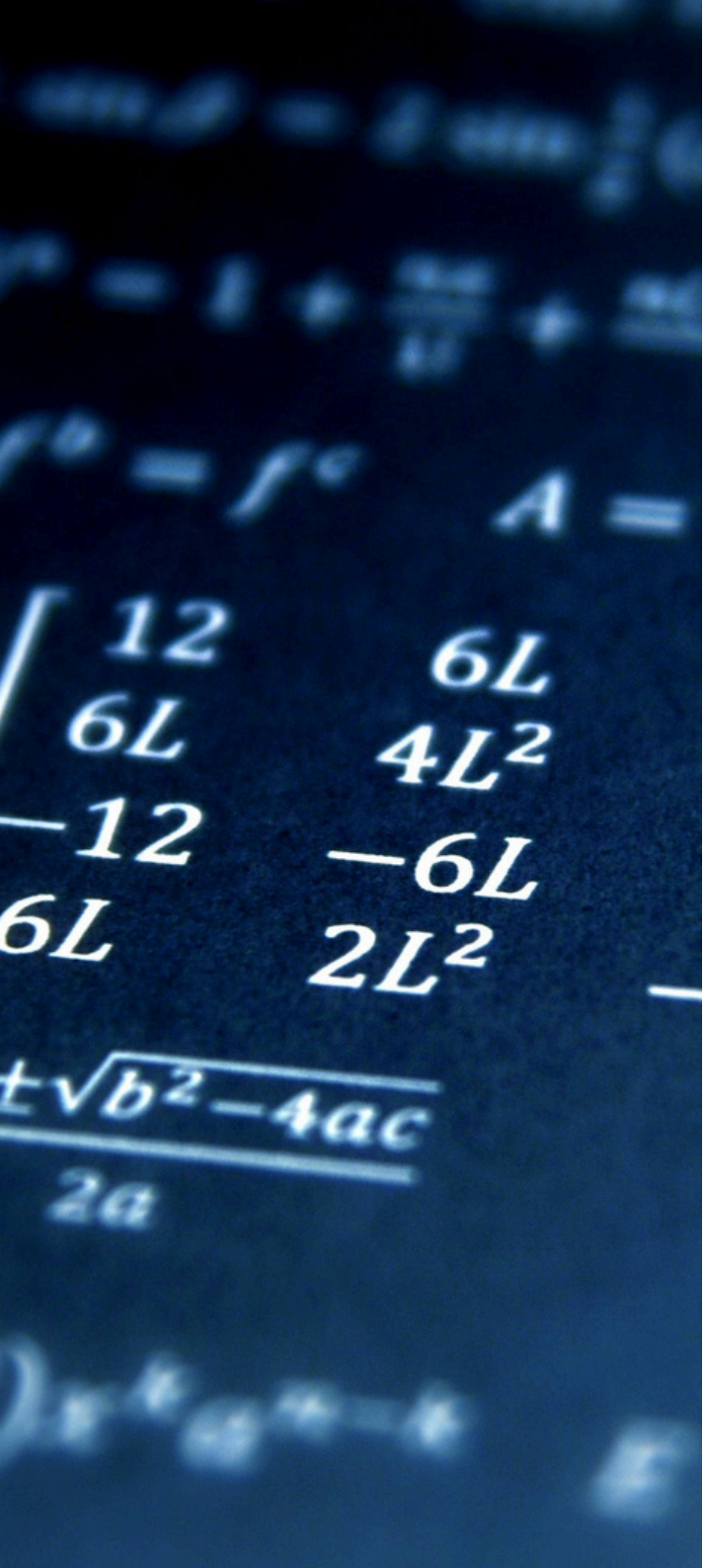

Mathematical Methods

Subject Guide

Mathematics is the study of patterns in numbers and space. It provides both a framework for thinking and a means of symbolic communication that is powerful and concise. Mathematics is a means by which people can understand and manage their environment. It has applications in all human activities and provides a universal way of solving problems in science, business and the Arts.

All students include at least one Mathematics subject in their VCE course of study. Students taking this subject should have a very strong algebraic background.

In this study, students have access to worthwhile and challenging mathematical learning activities. Students learn and practise mathematical skills and techniques to find solutions to standard problems. They further extend their mathematical knowledge and skills through the use of computer algebra system technology. Students undertake investigative projects and solve problems in unfamiliar and real-life situations.

Mathematics Department
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Unit focus areas

Unit 1

Functions, relations and graphs
Algebra of polynomial functions
Number and structure

Unit 2

Circular functions
Exponential and logarithmic functions
Differential and integral calculus
Probability

Unit 3

Polynomials and graphs
Functions and inverses
Exponential and logarithmic functions
Circular functions
Differential and integral calculus

Unit 4

Discrete and continuous probability distributions
Binomial and Normal distributions
Probability density functions
Statistical inference
Differential and integral calculus

Pre-requisites

Pre-requisites for Mathematical Methods Units 1 and 2 are Year 10 Mathematics or Year 10 Advanced Mathematics (or equivalent).

Mathematical Methods Units 1 and 2 is by invitation only to Year 9 students who have excelled in Year 9 Advanced Mathematics (or equivalent).

Pre-requisites for Mathematical Methods Units 3 and 4 is Mathematical Methods Units 1 and 2.

Year 11 students who study Mathematical Methods Units 3 and 4 must also be studying Specialist Mathematics Units 1 and 2. Approval from the Head of Department is required.

Assessment

For Units 1 and 2, students complete a range of outcomes and classwork throughout each semester. Mathematical Methods Units 1 and 2 students complete an examination at the end of each semester.

For Units 3 and 4, students complete School-Assessed Coursework (40%) subject to external moderation, and two end-of-year examinations (60%).