

Mathematical Methods Unit 3 & 4

Mathematical Methods Unit 3 & 4 are completely prescribed and extend the introductory study of simple elementary functions of a single real variable, to include combinations of these functions, algebra, calculus, probability and statistics, and their applications in a variety of practical and theoretical contexts.

Students will be expected to be able to apply techniques, routines and processes within these modules. They should also have relevant mental and by-hand approaches to estimation and computation. The use of numerical, graphical, symbolic, and statistical functionality of CAS technology (Calculator) for teaching and learning mathematics, for working mathematically, and in related assessment, is incorporated.

UNIT 3 & 4

Functions and Graphs:

- Transformations of the plane and behavior of some elementary functions of a single real variable including key features
- The behavior of these functions and their graphs is linked to applications in practical situations

Algebra

- Algebra of functions
- Identification of appropriate solution processes for solving equations, systems of simultaneous equations that are presented in different forms
- Recognition of equations and systems of equations
- Graphical and numerical approaches for problems involving equations

Calculus

- Graphical treatment of limits, continuity and differentiability of functions. This is linked to practical situations.

Probability

- Discrete and continuous random variables, their representation, and interpretation.

Assessed tasks

SAC 1: Application Task: Functions and Calculus (4-6 hours)

SAC 2: Functions, Calculus and Integration (2-3 hours)

SAC 3: Probability and Statistics (2-3 hours)

VCAA ASSESSMENT - The overall Study Score will consist of:

Unit 3 School Assessed Coursework	17%
Unit 4 School Assessed Coursework	17%
Exam 1 Technology Free	22%
Exam 2 Extended Response	44%