

Ringwood Secondary College
2017 Course Planning Document

VCE Unit 4 Further Maths Extension

Time Allocation

This unit of work will consist of approximately 100 hours of which at least 50 hours will be class time. **To complete this unit of work satisfactorily, students must complete each of the following learning outcomes.**

Learning Outcomes

Outcome 1

The student should be able to define and explain key terms and concepts from the Matrices and Graphs and Relations areas of study. They should be able to use this knowledge to apply related mathematical procedures to solve routine application tasks.

Outcome 2

The student should be able to apply mathematical processes in contexts related to the Matrices and Graphs and Relations areas of study. They should be able to analyse and discuss these applications.

Outcome 3

The student should be able to select and appropriately use technology to develop mathematical ideas, produce results and carry out analysis in situations requiring problem solving, modeling or investigative techniques in the Matrices and Graphs and Relations areas of study.

Assessment Tasks

1. Matrices Modelling and Problem Solving Task

The student is required to apply knowledge and understanding of Matrices to complete a modelling and problem solving task that involves contexts of increasing complexity.

Weighting: This task is worth 20% of the overall SAC grade and 7% of the overall grade.

Time allocated to task: 1 period

Due: Term 3, Week 3

2. Graphs and Relations Modelling and Problem Solving Task

The student is required to complete a modelling and problem solving task that involves applications contexts of increasing complexity.

Weighting: This task is worth 20 % of the overall SAC grade and 7% of the overall grade.

Time allocated to task: 1 period

Due: Term 3, Week 9

Examinations

1. External Exam 1 – Further Maths Exam 1

This examination comprises multiple choice questions covering all the content from Units 3 and 4. Mark allocation is as follows.

Data Analysis: 16 marks, Recursion and Financial Maths: 8 marks, Matrices: 8 marks, Graphs and Relations: 8 marks The exam is designed to assess students' knowledge of mathematical concepts, models and techniques and their ability to reason, interpret and apply this knowledge in a range of contexts.

Access to a CAS calculator is assumed and one bound summary book of notes may be used in the exam. A scientific calculator can also be used in the exam in addition to the CAS.

A formula sheet will be provided.

Weighting: This task is worth 33% of the overall grade

Time allocated to task: 15 minutes reading, 90 minutes writing.

2. External Exam 2 – Further Maths Exam 2

This exam comprises written response questions covering all the content from Units 3 and 4.

Mark allocation is as follows.

Data Analysis: 24 marks, Recursion and Financial Maths: 12 marks, Matrices: 12 marks, Graphs and Relations: 12 marks

The task is designed to assess students' ability select and apply mathematical facts, concepts, models and techniques to solve extended application problems in a range of contexts.

Student access to an approved CAS calculator will be assumed and one bound summary book of notes may be used in the exam. A scientific calculator can also be used in the exam in addition to the CAS.

A formula sheet will be provided.

Weighting: This task is worth 33% of the overall grade

Time allocated to task: 15 minutes reading, 90 minutes writing.