

VCE

# Rosehill Secondary College

# VCE 2020

## COURSE SELECTION HANDBOOK



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# INTRODUCTION

At Rosehill Secondary College we aim to foster the talents and nurture the aspirations of all senior students.

Choosing your program of study is a major and important decision in your life, and you need to research your options carefully. Start by asking yourself questions such as:

- What am I good at?
- What subjects do I enjoy most?
- What career goals do I have?
- What subjects and skills will I need to achieve these career goals?
- What level of school education will I need?
- What further education or training will I need?

Over the next few weeks you will be supported by your Home Group Teachers, the Senior School Staff and the Careers Advisor and your parents, as you address these questions whilst investigating career options and pre-requisite subjects to enable you to construct a course of study which will equip you for your future pathway.

Students who are vocationally oriented may consider enrolling in the VCAL program. More information on VCAL is to be found in the VCAL Handbook. You should also talk to the VCAL Coordinator. Some particularly well-organised students may opt to include a VET program in their subject choices. An application process is required for both of these options.

The course selection process for Year 11 students is often quite simple, as students will usually choose to simply omit their least important or least favoured Year 11 subject from their Year 12 program. However, it cannot be stressed highly enough the need for all students to check pre-requisite subjects for further study in the VICTER Guide (2019 for current Year 10 students, 2018 for current Year 11 students).

Students should take the time and make the effort to follow the subject selection process carefully. Remember, there are many people in the College who can help you at this important time.

# VCE STUDIES ON OFFER

## English

- English
- English as an Additional Language (EAL)
- Literature

## Mathematics

- Foundation Mathematics 1 & 2
- Further Mathematics 3 & 4
- General Mathematics 1 & 2
- Mathematical Methods 1,2,3 & 4
- Specialist Mathematics 1,2,3 & 4
- University Mathematics Year 12

## Languages

- Italian
- Japanese Second Language

## The Humanities

- Accounting
- Business Management
- Economics
- Extended Investigation
- Geography
- History
- Industry and Enterprise
- Legal Studies
- Philosophy

## Science

- Biology
- Chemistry
- Physics
- Psychology
- Environmental Science

## Technologies

- Food Studies
- Information Technology - Applied Computing 1 & 2
- Information Technology - Data Analytics 3 & 4
- Information Technology - Software Development 3 & 4
- Product Design and Technology - Materials
- Product Design and Technology - Textiles
- Systems Engineering

## The Arts

- Art
- Dance
- Drama
- Media
- Music Performance
- Music Investigation
- Studio Arts
- Theatre Studies
- Visual Communication Design

## Health and Physical Education

- Health and Human Development
- Outdoor and Environmental Studies
- Physical Education

# ROSEHILL SENIOR PATHWAYS

Rosehill Secondary College aims to deliver a comprehensive VCE program, with appropriate specialisations, that provides all students with a pathway into further study or the workforce.

## THE VCE

The Victorian Certificate of Education (VCE) is generally completed over a two year period. However, flexibility within the VCE allows students to complete it over an extended period if required by personal circumstances such as illness.

There are 44 studies to select from to make up your VCE program at Rosehill Secondary College. Each study is made up of at least two semester (or half-year) length units of study.

Usually, Units 1 and 2 are undertaken in Year 11 while Units 3 and 4 are undertaken in Year 12. Units 1 and 2 may be taken separately. Units 3 and 4 must be taken together as a **sequence** within one year, unless special permission is granted by the Victorian Curriculum and Assessment Authority (VCAA).

It is theoretically possible, although not always advisable, to enter many studies at Units 2 or 3 without having studied the previous unit(s).

Over the two years of the VCE full-time students at Rosehill Secondary College will undertake twenty-two semester-length units. Students attempt twelve units in Year 11 and ten units in Year 12.

### VCE Requirements

During your VCE studies you must undertake:

- Four English Units (two in Year 11 and two in Year 12)
  - Five other studies in Year 11
  - Four other studies in Year 12 (generally you will continue with four of the five studies undertaken in Year 11)
- The idea is to select a program that meets the above requirements, while suiting your interests and aspirations for tertiary study, training and employment. It is also important to select studies that you enjoy or are good at.

### Satisfactory Completion of the VCE

To be awarded the VCE, students must achieve satisfactory completion of all Outcomes in **at least sixteen units**. As a minimum this must include:

#### 1. Three units of English or English as an Additional Language (EAL) or Literature, including a Unit 3-4 sequence.

Notes:

- The three units may be selected from VCE English Units 1 - 4, VCE English as an Additional Language (EAL) Units 3-4 and VCE Literature Units 1 - 4.
- No more than two units at Units 1 and 2 level may count towards the English requirement.
- Students may not obtain credit for both English Units 3 and 4 and English as an Additional Language (EAL) Units 3 and 4.

### PLUS

#### 2. Three sequences of Units 3 - 4 studies other than *English*.

Note:

- Up to eight of the units may be VCE VET Units that are obtained across up to two approved VET programs.

# STRUCTURE OF THE VCE

## Assessment and the VCE

### Outcomes

Each unit will have set work and assignments called 'Outcomes'. An Outcome is the knowledge or skills that you must know or be able to demonstrate when you finish a unit.

Each VCE unit involves between two and four Outcomes. The award of satisfactory completion of a unit is based on a decision that the student has demonstrated achievement of **all** Outcomes.

For Units 1 – 4, satisfactory achievement of all Outcomes is the decision of the school. Outcomes are internally assessed. 'S' or 'N' results are recorded on the Victorian Assessment Software System (VASS) for all units.

### School Assessment – Units 1 & 2

In Units 1 & 2 levels of achievement will be measured according to performance in one or more methods of assessment; i.e. 'Assessment Tasks'. These tasks are modelled on Year 12 assessment tasks and are partially designed to prepare students for the requirements of Year 12. Grades ranging from A-UG will be awarded for Assessment Tasks at Year 11; these do not, however, contribute to the ATAR score.

### School Assessment – Units 3 & 4

There will be two forms of school assessment for level 3 & 4 sequences: School-Assessed Coursework and School-Assessed Tasks (in Arts and Technology studies). Each study will have three assessment components: two school assessments and one examination.

### School-Assessed Coursework (SACs)

This is based on assessment of each student's overall level of achievement on the assessment tasks designated in the Study Design. School-assessed coursework must be part of the regular teaching and learning program and must be completed mainly in class time.

### School-Assessed Tasks (SATs)

These are tasks completed at school in some studies to assess performance in Units 3 & 4. They are set and marked by teachers according to Victorian Curriculum and Assessment Authority (VCAA) specifications. They will occur in Media, Art, Studio Arts, Systems Engineering, Product Design and Technology, Food and Technology and Visual Communication Design.

### VCE Reporting

For each sequence of Units 3 & 4, students' level of achievement will be assessed using both school based assessment and external examinations. The assessments will be reported as grades A to E / UG.

VCAA will issue students with a 'Statement of Results' at the end of each year.

The College will provide descriptive reports for Units 1, 2 and 3. In addition parents and carers will receive results in Interim Reports issued each term.

VCAA will provide a detailed description of your achievements at the completion of Units 2 and 4. Eligible students will also receive a printed statement containing their ATAR score at the conclusion of Year 12.

### **The ATAR score**

When you complete an approved sequence of Year 12 studies you will receive an Australian Tertiary Admission Rank (ATAR) score. This is a competitive 'ranking' which shows how you performed in relation to every other Year 12 student in the state. In its simplest form it is a percentage; for example an ATAR score of 70 shows that you performed as well as, or better than, 70% of Victorian Year 12 students.

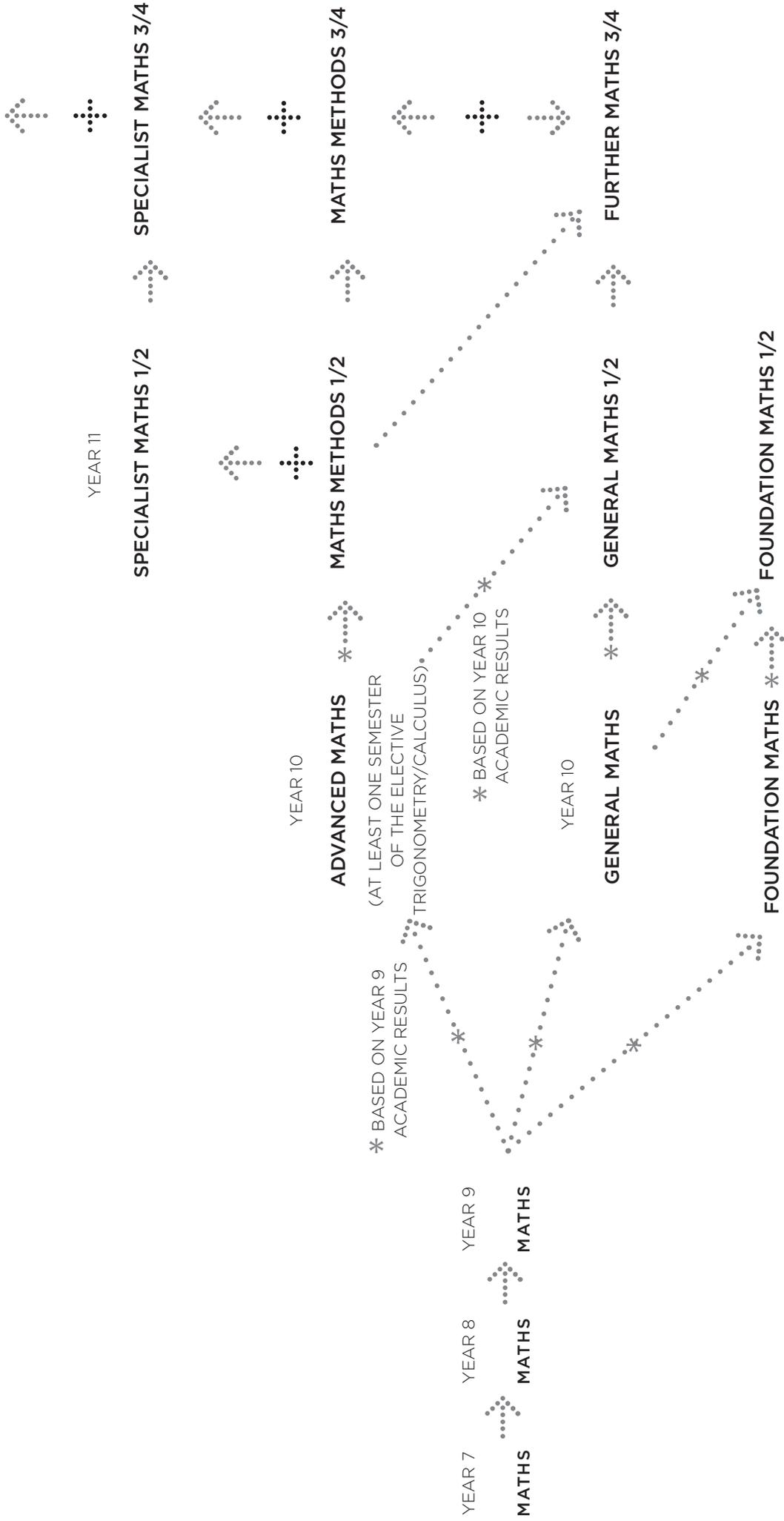
The ATAR is the main (but not the only) entrance requirement for most higher education courses. It is important to be aware of the fact that many TAFE courses, generally Certificate IV and above, are relying increasingly on the ATAR score to select students.

### **Calculation of the ATAR score**

A student will receive a scaled Study Score out of 50 for each Year 12 study which is successfully completed. The aggregate score is calculated by adding the Study Scores for **English** (or approved Year 12 English sequence) to the **next best three** study scores. These become the 'primary four' studies. 10% of the scores for any 5th or 6th studies are then added to the primary four to give an aggregate score, which is then ranked by the Victorian Tertiary Admissions Centre (VTAC) to become an ATAR score.

### **Repeat Penalty**

There is no penalty for repeating a subject, but it will be counted only once in calculation of the ATAR score.



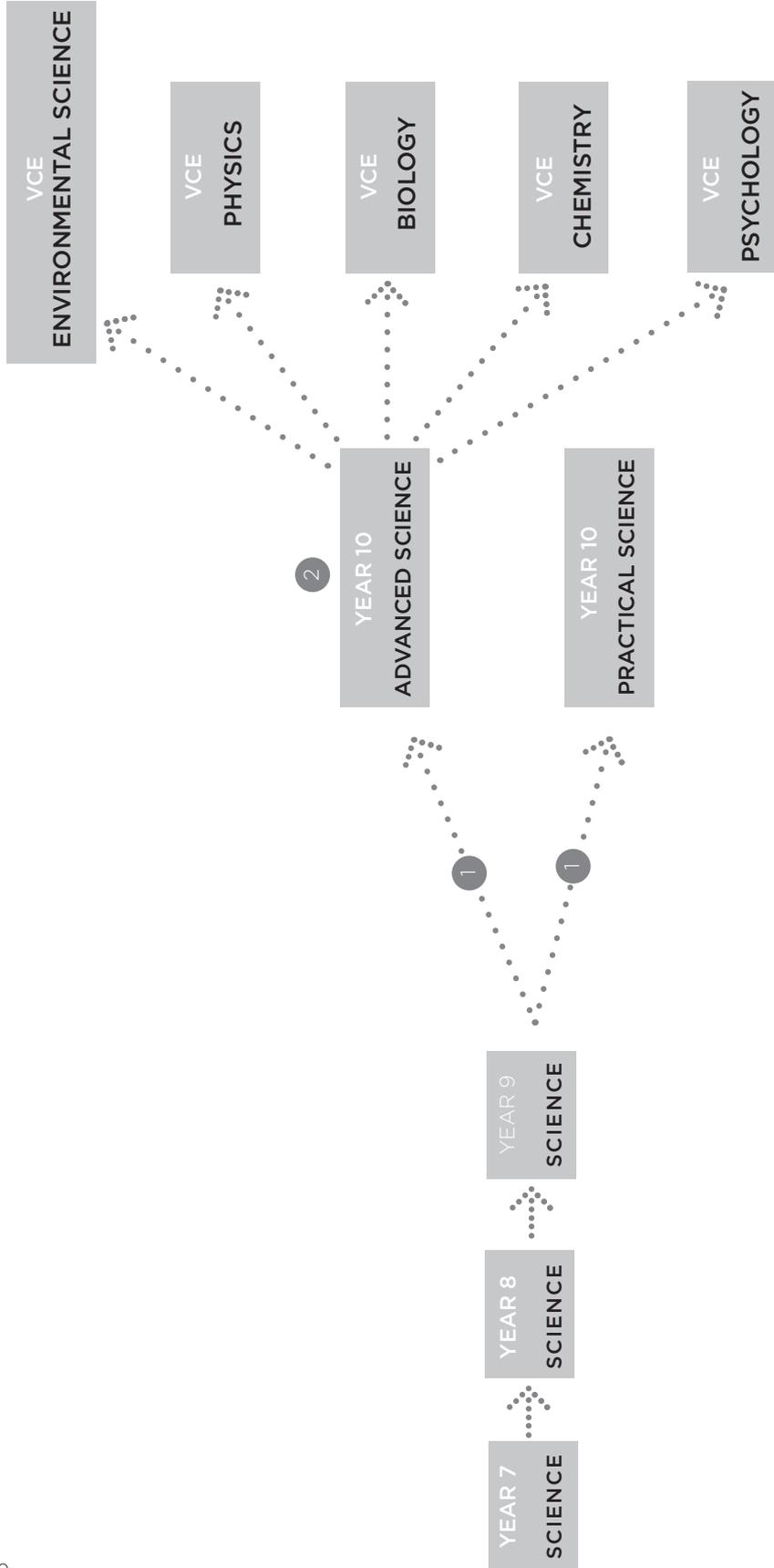
\* YEAR 9 ACADEMIC RESULTS IN TESTS, EXAMS AND NAPLAN WILL BE USED TO DETERMINE ENTRY INTO YEAR 10 MATHEMATICS CLASSES.

\* YEAR 10 ACADEMIC RESULTS IN TESTS, EXAMS AND THE YEAR 10 APTITUDE TEST WILL BE USED TO DETERMINE ENTRY INTO YEAR 11 MATHEMATICS CLASSES.

STUDENTS MAY ELECT TO STUDY NO MATHS AT YEAR 11

STUDENTS MAY ELECT TO STUDY NO MATHS AT YEAR 12

# SCIENCE PATHWAYS



**1** Year 9 academic results in projects, tests and exams will be used to determine which stream of science you can complete at year 10.

**2** Year 10 Advanced Science academic results in projects, tests and exams will be used to determine which stream of VCE science you can complete. Please note students must complete both semesters of Advanced Science to be eligible for VCE.

Note: Students may elect to complete no science at Year 11 or Year 12

The accounting procedures developed in each area of study should incorporate the application of the Conceptual Framework, financial indicators to measure business performance, as well as the ethical considerations of business owners when making decisions, including financial, social and environmental.

ICT is an essential aspect of business operations increasingly used to capture, analyse and convey information. Students are required to be aware of the use of spreadsheets, the internet and multimedia software in relation to accounting.

## Unit 1 - Role of Accounting in Business

This unit explores the establishment of a business and the role of accounting in the determination of business success or failure. In this, it considers the importance of accounting information to stakeholders. Students analyse, interpret and evaluate the performance of the business using financial and non-financial information. They use these evaluations to make recommendations regarding the suitability of a business as an investment.

Students record financial data and prepare reports for service businesses owned by sole proprietors.

### **Outcome 1**

Describe the resources required to establish and operate a business, and select and use accounting reports and other information to discuss the success or otherwise of the business.

### **Outcome 2**

Identify and record financial data, report and explain accounting information for a service business, and suggest and apply appropriate financial and non-financial indicators to measure business performance.

## Unit 2 - Accounting and Decision-Making for a Trading Business

In this unit students develop their knowledge of the accounting process for sole proprietors operating a trading business, with a focus on inventory, accounts receivable, accounts payable and non-current assets. Students use manual processes and ICT, including spreadsheets, to prepare historical and budgeted accounting reports.

Students analyse and evaluate the performance of the business relating to inventory, accounts receivable, accounts payable and non-current assets. They use relevant financial and other information to predict, budget and compare the potential effects of alternative strategies on the performance of the business. Using these evaluations, students develop and suggest to the owner strategies to improve business performance.

### **Outcome 1**

Record and report for inventory and discuss the effect of relevant financial and non-financial factors, and ethical considerations, on the outcome of business decisions.

### **Outcome 2**

Record and report for accounts receivable and accounts, and analyse and discuss the effect of relevant decisions on the performance of the business including the influence of ethical considerations.

### **Outcome 3**

Record and report for non-current assets and depreciation.

## Unit 3 - Financial Accounting for a Trading Business

This unit focuses on financial accounting for a trading business owned by a sole proprietor, and highlights the role of accounting as an information system. Students use the double entry system of recording financial data and prepare reports using the accrual basis of accounting and the perpetual method of inventory recording.

Students develop their understanding of the accounting processes for recording and reporting and consider the effect of decisions made on the performance of the business. They interpret reports and information presented in a variety of formats and suggest strategies to the owner to improve the performance of the business.

### **Outcome 1**

Record financial data using a double entry system; explain the role of the General Journal, General Ledger and inventory cards in the recording process; and describe, discuss and analyse various aspects of the accounting system, including ethical considerations.

### **Outcome 2**

Record transactions and prepare, interpret and analyse accounting reports for a trading business.

## Unit 4 - Recording, Reporting, Budgeting and Decision-Making

In this unit students further develop their understanding of accounting for a trading business owned by a sole proprietor and the role of accounting as an information system. Students use the double entry system of recording financial data, and prepare reports using the accrual basis of accounting and the perpetual method of inventory recording. Both manual methods and ICT are used to record and report.

Students extend their understanding of the recording and reporting process with the inclusion of balance day adjustments and alternative depreciation methods. They investigate both the role and importance of budgeting in decision-making for a business. They analyse and interpret accounting reports and graphical representations to evaluate the performance of a business. From this evaluation, students suggest strategies to business owners to improve business performance.

### **Outcome 1**

Record financial data and balance day adjustments using a double entry system, report accounting information using an accrual-based system and evaluate the effect of balance day adjustments and alternative methods of depreciation on accounting reports.

### **Outcome 2**

Prepare budgeted accounting reports and variance reports for a trading business using financial and other relevant information, and model, analyse and discuss the effect of alternative strategies on the performance of a business.

### **Assessment**

At least 30 marks must be allocated to ICT-based assessment.

School-assessed Coursework for Unit 3 will contribute 25 per cent to the study score.

School-assessed Coursework for Unit 4 will contribute 25 per cent to the study score.

End-of-year examination, will contribute 50 per cent to the study score.

Art explores the links between art practice and art analysis. Art allows students to develop their art skills through the production of a comprehensive folio and a variety of finished art works, using both 2D and 3D art forms.

Students learn how to develop a folio, through the exploration and experimentation of materials, techniques and concepts. They will also learn how to incorporate the influences of other artists into their own work whilst simultaneously developing and implementing their own ideas. Students select from one or more of the following mediums: painting, drawing, mixed media, sculpture, digital photography, installation or printmaking.

In Units 3 and 4 students explore a theme of their choice and explore a range of concepts and ideas, resulting in the production of two major final pieces.

Art is designed to support a fine art or design based pathway by allowing students to create a folio that is useful for tertiary folio entrance, including architecture, fine art, fashion, interior design, teaching, curatorial studies, industrial design and graphic design.

The Visual Arts Department also offers Folio Preparation tuition for Tertiary Studies.

## Unit 1 Artworks, experience and meaning

In this unit students focus on artworks as objects and examine how art elements, art principles, materials and techniques and artistic processes communicate meaning. They examine artists in different societies and cultures, and historical periods, and develop their own viewpoints about the meanings and messages of artworks. This subject involves students creating a comprehensive art folio where they learn to use and experiment with a number of materials, techniques and processes. Students also learn how to professionally present a folio and incorporate the influence of major artists into their work.

### Outcomes

1. On completion of this unit, the student should be able to analyse and interpret a variety of artworks using the Structural Framework and the Personal Framework.
2. On completion of this unit, the student should be able to use the art process to create visual responses that demonstrate their personal interests and ideas.

## Unit 2 Artworks and contemporary culture

This area focuses on the ways in which art reflects and communicates the values, beliefs and traditions for which it was created. Students will be exposed to a variety of different cultures and respond to them using a variety of methods. This area focuses on the exploration of areas of personal interest related to cultural expression. In students' own artistic practice, they continue to use the art process and visual language to explore and experiment with materials and techniques and to develop personal and creative responses. They explore the way cultural contexts and contemporary ideas and approaches to art have influenced their artwork.

### Outcomes

1. On completion of this unit, the student should be able to discuss and compare artworks from different cultures and times using the Cultural Framework and the Contemporary Framework.
2. On completion of this unit, the student should be able to use the art process to produce at least one finished artwork that explores social and/or personal ideas or issues.

### Assessment

- In both Units 1 & 2 the first outcome will be assessed through written, oral and short answer responses discussing the requirements of the Outcomes.
- The second outcome will be assessed through a set of visual solutions in a range of media and methods.
- In Unit 2 assessment includes at least one finished artwork.

As part of the VCE Visual Arts program, all Art students will need to purchase a **VCE ARTS KIT**. The kit is a compulsory and essential tool needed for the successful completion of the program and can be purchased via Compass or the general office. This is in addition to the levies.

## Unit 3 Artworks, ideas and values

In this unit, students apply imagination and creativity to develop their ideas through the art process and visual language. Their art making is supported through investigation, exploration and application of a variety of materials, techniques and processes. Students develop confidence in using the language and content of the Analytical Frameworks in their reflection of the structural, personal, cultural and contemporary aspects of their own developing artworks.

### **Outcomes**

1. On completion of this unit, the student should be able to use the Analytical Frameworks to analyse and interpret artworks produced before 1990 and since 1990, and compare the meanings and messages of these artworks.
2. On completion of this unit, the student should be able to use the art process to produce at least one artwork, and use the Analytical Frameworks to document and evaluate the progressive development and refinement of their artistic practice.

## Unit 4 Artworks, ideas and viewpoints

In this unit, students study artworks and develop and expand upon personal points of view. They build their learning and conceptual understanding around the discussion of broad themes, ideas and issues related to the role of art in society and consider how ideas and issues are communicated through artworks. In relation to their developing artwork, students continue to build upon the ideas and concepts begun in Unit 3 and further develop their artistic practice. They focus on the development of a body of work using the art process that demonstrates creativity and imagination, the evolution and resolution of ideas and the realisation of appropriate concepts, knowledge and skills.

### **Outcomes**

1. On completion of this unit, the student should be able to examine and analyse an art idea and its related issues to inform their viewpoint.
2. On completion of this unit, the student should be able to apply the art process to progressively communicate ideas, directions and personal concepts in a body of work that includes at least one finished artwork and use selected aspects of the Analytical Frameworks to underpin reflections on their art making.

### **Assessment**

- Units 3 and 4 School-assessed Coursework: 20%
- Units 3 and 4 School-assessed Task: 50 %
- End-of-year examination: 30 %

As part of the VCE Visual Arts program, all Art students will need to purchase a **VCE ARTS KIT**. The kit is a compulsory and essential tool needed for the successful completion of the program and can be purchased via Compass or the general office. This is in addition to the levies.

Biology is the study of living organisms, of life processes and of the different levels of organisation. Units 1 & 2 Biology examine how living things (plants and animals) function, from the individual cell level to their interactions within the ecosystem. Students will study in detail specific cellular processes and the individual systems inside the whole organism that maintain life. Students will also explore the various features and behaviours that organisms possess that confer a survival advantage.

## Unit 1: How do living things stay alive?

### **Areas of study**

1. How do organisms function?
2. How do living systems sustain life?
3. Practical investigation.

### **Outcomes**

On completion of this unit students should be able to:

1. Investigate and explain how organisms on both a cellular and system level maintain their requirements for life.
2. Explain how various adaptations enhance the survival of an individual organism, investigate the relationships between organisms that form a living community and their habitat, and analyse the impacts of factors that affect population growth.
3. Design and undertake an investigation related to the survival of an organism or species, and draw conclusions based on evidence from collected data.

## Unit 2: How is continuity of life maintained?

### **Areas of study**

1. How does reproduction maintain the continuity of life?
2. How is inheritance explained?
3. Investigation of an issue.

### **Outcomes**

On completion of this unit students should be able to:

1. Compare the advantages and disadvantages of asexual and sexual reproduction, explain how changes within the cell cycle may have an impact on cellular or tissue system function and identify the role of stem cells in cell growth and differentiation and in medical therapies.
2. Apply an understanding of genetics to describe patterns of inheritance, analyse pedigree charts, predict outcomes of genetic crosses and identify the implications of the uses of genetic screening and decision making related to inheritance.
3. Investigate and communicate a substantiated response to a question related to an issue in genetics and/or reproductive science.

### **Assessment**

In Units 1 and 2, achievement of outcomes 1 and 2 will be measured by performance in a selection of the following tasks:

- Practical activities
- Scientific reports on fieldwork
- Bioinformatics exercise
- Media response
- Data analysis
- Problem solving challenges
- Tests
- Oral presentations

Achievement of outcome 3 will be measured by performance in the following task:

Report on an investigation, presented in one of the following formats:

- Scientific poster
- Practical report
- Oral presentation
- Digital presentation

Units 3 and 4 Biology look at the cell as a dynamic system of interacting molecules that define life. An understanding of the workings of the cell enables an appreciation of both the capabilities and the limitations of living organisms whether animal, plant, fungus or microorganism. The convergence of cytology, genetics and biochemistry makes cell biology one of the most rapidly evolving disciplines in contemporary biology. Students examine the structural and cognitive trends in the human fossil record and the interrelationships between human biological and cultural evolution. The biological consequences, and social and ethical implications, of manipulating the DNA molecule and applying biotechnologies is explored for both the individual and the species. Students need to develop and apply these skills in a biological context. These key skills include: investigate and inquire scientifically, apply biological understanding and communicate biological information.

## Unit 3 - How do cells maintain life?

### **Areas of study**

1. How do cellular processes work?
2. How do cells communicate?

### **Outcomes**

On completion of this unit students should be able to:

1. Explain the dynamic nature of the cell in terms of key cellular processes including regulation, photosynthesis and cellular respiration, and analyse factors that affect the rate of biochemical reactions.
2. Apply a stimulus-response model to explain how cells communicate with each other, outline human responses to invading pathogens, distinguish between the different ways that immunity may be acquired, and explain how malfunctions of the immune system cause disease.

## Unit 4 - How does life change and respond to challenges over time?

### **Areas of study**

1. How are species related?
2. How do humans impact on biological processes?
3. Practical Investigation

### **Outcomes**

On completion of this unit students should be able to:

1. Analyse evidence for evolutionary change, explain how relatedness between species is determined, and elaborate on the consequences of biological change in human evolution.
2. Describe how tools and techniques can be used to manipulate DNA, explain how biological knowledge is applied to biotechnical applications, and analyse the interrelationship between scientific knowledge and its applications in society.
3. Design and undertake an investigation related to cellular processes and/or biological change and continuity over time, and present methodologies, findings and conclusions in a scientific poster

### **Assessment**

School-Assessed Coursework will contribute 40% of the final assessment and will consist of:

Unit 3 Outcome 1: Two practical reports

Outcome 2: One practical report or a presentation, data analysis, a written response to questions.

Unit 4 Outcome 1: One practical report

Outcome 2: One practical report or response to an issue

Outcome 3: Scientific poster

An end-of-year examination on all outcomes in Units 3 and 4 will contribute 60% of the final assessment.

# BUSINESS MANAGEMENT

VCE Business Management examines the ways businesses manage resources to achieve objectives. The VCE Business Management study design follows the process from the first idea for a business concept, to planning and establishing a business, through to the day-to-day management of a business. It also considers changes that need to be made to ensure continued success of a business. Students develop an understanding of the complexity of the challenges facing decision makers in managing these resources. Business Management is relevant to tertiary studies in Business, Finance, Commerce, Accounting, Arts, Humanities and Social Work.

## Unit 1 - Planning a business

This unit is the study of how businesses are formed and how the fostering of conditions under which new business ideas can emerge are vital for a nation's wellbeing. Taking a business idea and planning how to make it a reality are the cornerstones of economic and social development. In this unit students explore the factors affecting business ideas and the internal and external environments within which businesses operate, and the effect of these on planning a business.

### **Outcomes**

1. Describe how and why business ideas are created and developed, and explain the methods by which a culture of business innovation and entrepreneurship may be fostered in a nation..
2. Describe the external environment of a business and explain how the macro and operating factors within it may affect business planning.
3. Describe the internal business environment and analyse how factors from within it may affect business planning.

## Unit 2 - Establishing a business

This unit focuses on the establishment phase of a business's life. Establishing a business involves complying with legal requirements as well as making decisions about how best to establish a system of financial record keeping, staff the business and establish a customer base. In this unit students examine the legal requirements that must be satisfied to establish a business. They investigate the essential features of effective marketing and consider the best way to meet the needs of the business in terms of staffing and financial record keeping. Students analyse various management practices in this area by applying this knowledge to contemporary business case studies from the past four years.

### **Outcomes**

1. Explain the importance when establishing a business of complying with legal requirements and financial record keeping, and establishing effective policies and procedures.
2. Explain the importance of establishing a customer base and a marketing presence to achieve the objectives of the business, analyse effective marketing and public relations
3. Discuss the staffing needs for a business and evaluate the benefits and limitations of management strategies in this area from both an employer and an employee perspective.

### **Assessment**

The award of satisfactory completion for a unit is based on a decision that the student has demonstrated achievement of the set of outcomes specified for the unit. This decision will be based on the teacher's assessment of the student's overall performance on assessment tasks designated for the unit.

Assessment tasks for these units are selected from the following:

- A case study analysis
- A business research report
- Development of a business plan and/or feasibility study
- An interview and a report on contact with business
- A school-based, short-term business activity
- A business simulation exercise
- An essay
- A business survey and analysis
- A media analysis.
- Structured questions

## Unit 3 - Managing a business

In this unit students explore the key processes and issues concerned with managing a business efficiently and effectively to achieve the business objectives. Students examine the different types of businesses and their respective objectives. They consider corporate culture, management styles, management skills and the relationship between each of these. Students investigate strategies to manage both staff and business operations to meet objectives.

### **Outcomes**

1. Discuss the key characteristics of businesses and stakeholders, and analyse the relationship between corporate culture, management styles and management skills.
2. Explain theories of motivation and apply them to a range of contexts, and analyse and evaluate strategies related to the management of employees.
3. Analyse the relationship between business objectives and operations management, and propose and evaluate strategies to improve the efficiency and effectiveness of business operations.

## Unit 4 - Transforming a business

In this unit students study a theoretical model to undertake change, and consider a variety of strategies to manage change in the most efficient and effective way to improve business performance. They investigate the importance of leadership in change management. Using a contemporary business case study from the past four years, students evaluate business practice against theory.

### Outcomes

1. Explain the way business change may come about, use key performance indicators to analyse the performance of a business, discuss the driving and restraining forces for change and evaluate management strategies to position a business for the future.
2. Evaluate the effectiveness of a variety of strategies used by managers to implement change and discuss the effect of change on the stakeholders of a business.

### Assessment

School-assessed Coursework for Unit 3 (a case study or structured questions) will contribute 25 per cent to the study score.

School-assessed Coursework for Unit 4 (a case study or structured questions) will contribute 25 per cent to the study score.

An end-of-year examination held in November will examine the key knowledge and key skills that underpin the outcomes in Units 3 and 4. The examination will contribute 50% to the study score.

# CHEMISTRY

Chemistry explores and explains the composition and behaviour of matter and the chemical processes that occur on Earth and beyond. Chemical models and theories are used to describe and explain known chemical reactions and processes. Chemistry underpins the production and development of energy, the maintenance of clean air and water, the production of food, medicines and new materials, and the treatment of wastes.

## Unit 1 - How can the diversity of materials be explained?

### Areas of study

1. How can knowledge of elements explain the properties of matter? – In this area of study students focus on the nature of chemical elements, their atomic structure and their place in the periodic

table. Students investigate the nature of metals and their properties, including metallic nanomaterials. Fundamental quantitative aspects of chemistry are introduced.

2. How can the versatility of non-metals be explained? – Students explore a wide range of substances and materials made from non-metals including molecular substances, covalent lattices, carbon nanomaterials, organic compounds and polymers.
3. Research Investigation – In this area of study students apply and extend their knowledge and skills developed in Area of Study 1 and/or 2 to investigate a selected question related to materials.

### Outcomes

On completion of this unit students:

1. Will be able to relate the position of elements in the periodic table to their properties, investigate the structures and properties of metals and ionic compounds, and calculate mole quantities.
2. Will be able to investigate and explain the properties of carbon lattices and molecular substances with reference to their structures and bonding, use systematic nomenclature to name organic compounds, and explain how polymers can be designed for a purpose.
3. Will have applied and extended their knowledge and skills to investigate a selected question related to materials. They will have applied critical and creative thinking, science inquiry and communication skills to conduct and present the findings of an independent investigation.

## Unit 2: What makes water such a unique chemical?

### Areas of study

1. How do substances interact with water? – This area of study focuses on the use of analytical techniques, both in the laboratory and in the field, to measure the solubility and concentrations of solutes in water, and to analyse water samples for various solutes including chemical contaminants.
2. How are substances in water measured and analysed? – This area focuses on the interaction between living things and gases of the atmosphere. Students use kinetic theory to explain and predict the behaviour of gases and explore state, national and global issues associated with the impact of human activities on the atmosphere.
3. Practical Investigation – This task requires the student to develop a question, plan a course of action that attempts to answer the question, undertake an investigation to collect the appropriate primary qualitative and/or quantitative data (which may include collecting water samples), organise and interpret the data and reach a conclusion in response to the question.

### **Outcomes**

On completion of this unit the student should be able to:

1. Relate the properties of water to its structure and bonding, and explain the importance of the properties and reactions of water in selected contexts.
2. Measure amounts of dissolved substances in water and analyse water samples for salts, organic compounds and acids and bases.

### **Assessment**

In Units 1 and 2, achievement of all outcomes will be measured by performance in a selection of the following:

- School Assessment Tasks
- Tests
- Exam

## **Unit 3: How can chemical processes be designed to optimise their efficiency?**

### **Areas of study**

1. What are the options for energy production? – Students focus on analysing and comparing a range of energy resources and technologies, including fossil fuels, biofuels, galvanic cells and fuel cells, with reference to the energy transformations and chemical reactions involved, energy efficiencies, environmental impacts and potential applications.
2. How can the yield of a chemical product be optimised? – Students explore the factors that increase the efficiency and percentage yield of a chemical manufacturing process while reducing the energy demand and associated costs. Homogeneous equilibrium systems and electrolytic cells are examined.
3. Practical Investigation – Related to energy and/or food is undertaken either in Unit 3 or Unit 4 with the findings of the investigation presented in a scientific poster format.

### **Outcomes**

On completion of this unit the student should be able to:

1. Compare fuels quantitatively with reference to combustion products and energy outputs, apply knowledge of the electrochemical series to design, construct and test galvanic cells, and evaluate energy resources based on energy efficiency, renewability and environmental impact.
2. Apply rate and equilibrium principles to predict how the rate and extent of reactions can be optimised, and explain how electrolysis is involved in the production of chemicals and in the recharging of batteries.

## **Unit 4: How are organic compounds categorised, analysed and used?**

### **Areas of study**

1. How can the diversity of carbon compounds be explained and categorised? – Students investigate trends in the physical and chemical properties of various organic families of compounds. They study typical reactions of organic families and some of their reaction pathways, and write balanced chemical equations for organic syntheses.
2. What is the chemistry of food? – Students focus on the major components of food with reference to their structures, properties and functions. They examine the hydrolysis reactions in which foods are broken down, the condensation reactions in which new biomolecules are formed and the role of enzymes, assisted by coenzymes, in the metabolism of food.

### **Outcomes**

On completion of this unit the student should be able to:

1. Compare the general structures and reactions of the major organic families of compounds, deduce structures of organic compounds using instrumental analysis data, and design reaction pathways for the synthesis of organic molecules.
2. Distinguish between the chemical structures of key food molecules, analyse the chemical reactions involved in the metabolism of the major components of food including the role of enzymes, and calculate the energy content of food using calorimetry.

### **Assessment**

School-Assessed Coursework for Units 3 and 4 will contribute 40% of the final assessment and will consist of five assessment tasks selected from the following: a report on a laboratory investigation, a response to a set of structured questions, and a structured scientific poster according to the VCAA standard template.

An end-of-year examination will contribute 60% of the final assessment.

## Unit 1

In this unit students explore the potential of the body as an instrument of expression and communication in conjunction with the regular and systematic development of physical dance skills. Students discover the diversity of expressive movement and purposes for dancing in dances from different times, places, cultures, traditions and/or styles. They commence the process of developing a personal movement vocabulary and begin the practices of documenting and analysing movement. Through this work, they develop understanding of how other choreographers use these practices.

**Outcome 1 – Dance perspectives** - On completion of this unit the student should be able to describe and document features of other choreographers' dance works.

**Outcome 2 – Choreography and performance.** On completion of this unit the student should be able to choreograph and perform a solo, duo and/or group dance work and complete structured improvisations.

**Outcome 3 – Dance technique and performance.** On completion of this unit the student should be able to safely and expressively perform a learnt solo, duo or group dance work.

**Outcome 4 – The body: physiology and maintenance.** On completion of this unit the student should be able to describe key approaches to wellbeing and health practices for dancers and essential aspects of physiology, and demonstrate the safe use and maintenance of the dancer's body.

## Unit 2

In this unit students extend their personal movement vocabulary and skill in using a choreographic process by exploring elements of movement (time, space and energy), the manipulation of movement through choreographic devices and the types of form used by choreographers. Students use the choreographic process to develop and link movement phrases to create a dance work. They apply their understanding of the processes used to realise a solo or group dance work – choreographing and/or learning, rehearsing, preparing for performance and performing.

**Outcome 1 – Dance perspectives** - On completion of this unit the student should be able to analyse use of the movement categories and elements of movement in selected dance traditions, styles and/or works.

**Outcome 2 – Choreography and performance.** On completion of this unit the student should be able to complete structured improvisations and choreograph and perform a solo, duo or group dance work.

**Outcome 3 – Dance technique and performance.** On completion of this unit the student should be able to safely and securely perform a learnt solo, duo or group dance work with artistry, and report on the realisation of the dance work.

### Assessment

All outcomes in Units 1 and 2 will be measured from a range of tasks selected from the following list:

1. Written report.
2. Solo or group dance work composed and performed by the student.
3. Oral presentation.
4. Performance of a group dance work learnt from another.

## Unit 3

In this unit students choreograph, rehearse and perform a solo dance work that allows them to execute a diverse range of physical skills and actions drawn from all movement categories. Students continue regular and systematic dance training, and learn and perform a duo or group dance work created by another choreographer. They continue to develop their ability to safely execute movement vocabulary and perform with artistry. Students analyse the realisation of their solo and the learnt duo or group dance work, focusing on the processes of choreographing or learning, rehearsing, preparing for performance and performing. This analysis connects each student's work as a choreographer to the work of professional choreographers.

**Outcome 1 – Dance perspectives.** On completion of this unit the student should be able to analyse two selected dance works.

**Outcome 2 – Choreography, performance and analysis of a skills-based solo dance work** On completion of this unit the student should be able to choreograph, rehearse and perform a skills-based solo dance work and analyse the processes

**Outcome 3 – Dance technique, performance and analysis of a Learnt Work** - On completion of this unit the student should be able to learn, rehearse and prepare for performance, and perform a duo or group dance work by another choreographer and analyse the processes used.

## Unit 4

In this unit students choreograph, rehearse and perform a solo dance work with a cohesive structure. When rehearsing and performing this dance work students focus on communicating the intention with accurate execution of choreographic variations of spatial organisation. They explore how they can demonstrate artistry in performance. Students document and analyse the realisation of the solo dance work across the processes of choreographing, rehearsing, preparing to perform and performing the dance work. Students continue to develop their understanding of the choreographic process through analysis of a group dance work by a twentieth or twenty-first century choreographer. This analysis focuses on ways in which the intention is expressed through the manipulation of spatial relationships. Students analyse the use of group structures (canon, contrast, unison, and asymmetrical and symmetrical groupings and relationships) and spatial organisation (direction, level, focus and dimension) and investigate the influences on choices made by choreographers in these works.

**Outcome 1 – Dance perspectives.** On completion of this unit the student should be able to analyse a selected group dance work.

**Outcome 2 – Choreography, performance and dance-making analysis.** On completion of this unit the student should be able to choreograph, rehearse, perform and analyse their realisation of a solo dance work.

### Assessment

- Unit 3 school-assessed coursework: 15%
- Unit 4 school-assessed coursework: 10%
- End-of-year performance examination: 50%
- End-of-year written examination: 25%

## Unit 1 - Introducing Performance Styles

In this unit students study three or more performance styles from a range of social, historical and cultural contexts. They examine drama traditions of ritual and storytelling to devise performances that go beyond re-creation and/or representation of real life as it is lived. This unit focuses on creating, presenting and analysing a devised solo and/or ensemble performance that includes real or imagined characters and is based on stimulus material that reflects personal, cultural and/or community experiences and stories. This unit also involves analysis of a student's own performance work and a work by professional drama performers.

### Outcomes

1. Devise and document solo and/or ensemble drama works based on experiences and/or stories in a folio or journal format.
2. Perform devised drama works to an audience.
3. Analyse the development, and the performance to an audience, of their devised work in short answer questions.
4. Analyse the presentation of ideas, stories and characters in a drama performance by professional or other drama practitioners in a performance analyse essay format.

## Unit 2 - Australian Identity

In this unit students study aspects of Australian identity evident in contemporary drama practice. This may also involve exploring the work of selected drama practitioners and associated performance styles. This unit focuses on the use and documentation of the processes involved in constructing a devised solo or ensemble performance. Students create, present and analyse a performance based on a person, an event, an issue, a place, an artwork, a text and/or an icon from a contemporary or historical Australian context. In creating the performance, students use stimulus material that allows them to explore an aspect or aspects of Australian identity. They examine selected performance styles and explore the associated conventions. Students further develop their knowledge of the conventions of transformation of character, time and place, the application of symbol, and how these conventions may be manipulated to create meaning in performance and the use of dramatic elements and production areas.

### **Outcomes**

1. Devise and document the processes used to create a solo or ensemble performance that reflects an aspect or aspects of Australian identity and contemporary drama practice either in folio or journal format.
2. Present a devised performance that reflects aspects of Australian identity and contemporary drama practice. Performance to an audience.
3. Analyse the development, and performance to an audience, of their devised work in short answer questions.
4. Analyse and evaluate a performance of a drama work by Australian practitioners in a performance analysis essay.

### **Assessment**

All outcomes in Unit 1 and 2 will be assessed by a range of tasks taken from this list

- Folio/Journal
- Performance
- Short Answer Questions
- Essays
- Written Exam

## Unit 3 - Devised Ensemble Performance

In this unit students explore the work of drama practitioners and draw on contemporary practice as they devise ensemble performance work. Students explore performance styles and associated conventions from a diverse range of contemporary and/or traditional contexts. They work collaboratively to devise, develop and present an ensemble performance. Students create work that reflects a specific performance style or one that draws on multiple performance styles and is therefore eclectic in nature. They use play-making techniques to extract dramatic potential from stimulus material, then apply and manipulate conventions, dramatic elements, expressive skills, performance skills and production areas. Throughout development of the work they experiment with transformation of character, time and place, and application of symbol. Students devise and shape their work to communicate meaning or to have a specific impact on their audience. In addition, students document and evaluate stages involved in the creation, development and presentation of the ensemble performance.

### **Outcomes**

1. Develop and present characters within a devised ensemble performance that goes beyond a representation of real life as it is lived. Perform work to an audience.
2. Analyse the use of processes, techniques and skills to create and present a devised ensemble performance in a short answer task.
3. Analyse and evaluate a professional drama performance in a performance analysis essay.

## Unit 4 - Devised solo performance

This unit focuses on the development and the presentation of devised solo performances. Students explore contemporary practice and works that are eclectic in nature; that is, they draw on a range of performance styles and associated conventions from a diverse range of contemporary and traditional contexts. Students develop skills in extracting dramatic potential from stimulus material and use play-making techniques to develop and present a short solo performance. They experiment with application of symbol and transformation of character, time and place. They apply conventions, dramatic elements, expressive skills, performance skills and performance styles to shape and give meaning to their work. Students further develop

and refine these skills as they create a performance in response to a prescribed structure. They consider the use of production areas to enhance their performance and the application of symbol and transformations. Students document and evaluate the stages involved in the creation, development and presentation of their solo performance.

### **Outcomes**

1. Demonstrate, in response to given stimulus material, application of symbol and transformation of character, time and place, and describe the techniques used in a short answer task.
2. Create, develop and perform a solo performance in response to a prescribed structure.
3. Analyse and evaluate the creation, development and presentation of a solo performance devised in response to a prescribed structure in an essay format.

### **Assessment**

School-assessed coursework for Unit 3 – 30%  
 School –assessed coursework for Unit 4 – 10%  
 Final Performance – Solo Examination – 35%  
 Final Written Exam – 25%

Economics is the study of how resources are allocated to meet the needs and wants of society. It attempts to explain how and why individuals behave the way they do and the consequences of their decision making. Studying Economics as a social science enables students to gain valuable insight into the economic problems that they may face on an individual basis and collectively as a society to meet the needs and wants of citizens, and may therefore assist them in making more informed and responsible decisions. Economics is relevant to tertiary studies in Business, Finance, Commerce, Accounting, Arts, Humanities and Social Work.

## **Unit 1 - The Behaviour of Consumers and Businesses**

This unit is the study of the way humans behave and the decisions made to meet the needs and wants of society. In this unit students explore their role in the economy, how they interact with businesses and the way economic models and theories have been developed to explain the causes and effects of human action. Students explore some fundamental economic concepts.

### **Outcomes**

1. Describe the basic economic problem, discuss the role of consumers and businesses in the economy and analyse the factors that influence decision making.
2. Explain the role of relative prices and other non-price factors in the allocation of resources in a market-based economy.

## **Unit 2 - Contemporary Economic Issues**

This unit is a study of economics as a social science and looks at contemporary issues where there are wide differences of opinion and constant debate. In most instances the decisions made by consumers, businesses and governments may benefit some stakeholders but not others. Trade-offs, where the achievement of one economic or public policy goal may come at the expense of another, are the subject of much debate in economic circles. Students focus on the possible trade-off between the pursuit of growth in incomes and production and the goal of environmental sustainability and long-term economic prosperity.

### **Outcomes**

1. Explain the factors and policies that may influence economic growth and environmental sustainability, and analyse the potential trade-off.
2. Explain the factors and policies that may influence equity in the distribution of income and efficiency of resource allocation, and analyse the potential trade-off.
3. Explain the factors that may influence a global economic issue/s and evaluate potential consequences associated with actions to address the issue/s.

### **Assessment**

The award of satisfactory completion for a unit is based on a decision that the student has demonstrated achievement of the set of outcomes specified for the unit. This decision will be based on the teacher's assessment of the student's overall performance on assessment tasks designated for the unit.

Assessment tasks for these units are selected from the following:

- An analysis of written, visual and statistical evidence
- A folio of applied economic exercises
- Problem-solving tasks
- A blog of media commentaries using print or electronic materials
- A report of an investigation or an inquiry
- Case studies
- A debate
- Media analyses
- An essay/a structured report
- Structured questions
- A presentation (oral, multimedia, visual)
- A web page
- Economic simulation activities.

## **Unit 3 - Australia's Economic Prosperity**

In this unit students develop an understanding of the macroeconomy. They investigate the factors that influence the level of aggregate demand and aggregate supply in the economy and use models and theories to explain how changes in these variables might influence the achievement of the Australian Government's domestic macroeconomic goals and affect living standards.

### **Outcomes**

1. Explain how markets operate to allocate resources, and discuss the effect of government intervention on market outcomes.
2. Analyse key contemporary factors that may have influenced the Australian Government's domestic macroeconomic goals over the past two years and discuss how achievement of these goals may affect living standards.
3. Explain the factors that may influence Australia's international transactions and evaluate how international transactions and trade liberalisation may influence the current account balance, the Australian Government's domestic macroeconomic goals and living standards in Australia.

## **Unit 4 - Managing the Economy**

In this unit students develop an understanding of how the Australian Government can alter the composition and level of government outlays and receipts to directly and indirectly influence the level of aggregate demand and the achievement of domestic macroeconomic goals.

### **Outcomes**

1. Discuss the nature and operation of aggregate demand policies and analyse how the policies may influence the Australian Government's domestic macroeconomic goals and living standards.
2. Discuss the nature and operation of aggregate supply policies and analyse how the policies may influence the Australian Government's domestic macroeconomic goals and living standards.

### **Assessment**

School-assessed Coursework for Unit 3 (a folio of applied economic exercises, a case study or structured questions) will contribute 25 per cent to the study score.

School-assessed Coursework for Unit 4 (a folio of applied economic exercises or structured questions) will contribute 25 per cent to the study score. An end-of-year Examination held in November will examine the key knowledge and key skills that underpin the outcomes in Units 3 and 4. The examination will contribute 50% to the study score.

It is essential that all students begin each semester having read all the set texts

## Unit 1 - English

In this unit students read and respond to texts analytically and creatively. They analyse arguments and the use of persuasive language in texts and create their own texts intended to position audiences.

### **Area Of Study 1: Reading and Creating Texts**

In this area of study students explore how meaning is created in a text. Students identify, discuss and analyse decisions authors have made.

#### **Outcome 1**

On completion of this unit the student should be able to produce analytical and creative responses to texts.

### **Area Of Study 2: Analysing and Presenting Argument**

In this unit students focus on the analysis and construction of texts that attempt to influence an audience. Students read a range of texts that attempt to position audiences in a variety of ways. They explore the use of language for persuasive effect and the structure and presentation of argument.

#### **Outcome 2**

On completion of this unit the student should be able to analyse how argument and persuasive language can be used to position audiences, and create their own texts intended to position audiences.

#### **Assessment**

The award for satisfactory completion for a unit is based on whether the student has demonstrated the set of outcomes specified for the unit.

**For EAL students at least one text provided for the assessment of Outcome 2 should be in spoken form or have a spoken component to allow for the assessment of listening skills.**

## Unit 2 - English

In this unit students compare the presentation of ideas, issues and themes in texts. They analyse arguments presented and the use of persuasive language in texts and create their own texts intended to position audiences.

### **Area Of Study 1: Reading and Comparing Texts**

In this area of study students explore how comparing texts can provide a deeper understanding of ideas, issues and themes.

#### **Outcome 1**

On completion of this unit the student should be able to compare the presentation of ideas, issues and themes in two texts.

### **Area Of Study 2: Analysing and Presenting Argument**

In this area of study students build on their understanding of argument and the use of persuasive language in texts that attempt to influence an audience. Students consider a range of texts where the primary purpose is to convince an audience to share a point of view.

#### **Outcome 2**

On completion of this unit the student should be able to identify and analyse how argument and persuasive language are used in text/s that attempt to influence an audience, and create a text which presents a point of view.

#### **Assessment**

The award for satisfactory completion for a unit is based on whether the student has demonstrated the set of outcomes specified for the unit.

**For EAL students at least one text provided for assessment of Outcome 2 should be in spoken form or have a spoken component to allow for the assessment of listening skills.**

## Unit 3 - English

In this unit students read and respond to texts analytically and creatively. They analyse arguments and the use of persuasive language in texts.

### **Area Of Study 1: Reading and Creating Texts**

In this area of study students identify, discuss and analyse how the features of selected texts create meaning and how they influence interpretation.

#### **Outcome 1**

On completion of this unit the student should be able to produce an analytical interpretation of a selected text, and a creative response to a different selected text.

### **Area Of Study 2: Analysing Argument**

In this area of study students analyse and compare the use of argument and language in texts that debate a topical issue. The texts must have appeared in the media since September 1 of the previous year.

#### **Outcome 2**

On completion of this unit the student should be able to analyse and compare the use of argument and persuasive language in texts that present a point of view on an issue currently debated in the media.

### **EAL STUDENTS ONLY**

### **Area Of Study 3: Listening to Texts**

In this area of study EAL students develop and refine their listening skills. They listen to a range of spoken texts and use active listening strategies to understand information, ideas and opinions presented in texts.

#### **Outcome 3**

On completion of this unit the EAL student should be able to comprehend a spoken text.

**Assessment** The award for satisfactory completion for a unit is based on whether the student has demonstrated the set of outcomes specified for the unit.

## Unit 4 - English

In this unit students compare the presentation of ideas, issues and themes in texts.

### **Area Of Study 1: Reading and Comparing Texts**

In this area of study students explore the meaningful connections between two texts.

#### **Outcome 1**

On completion of this unit the student should be able to produce a detailed comparison which analyses how two selected texts present ideas, issues and themes.

### **Area Of Study 2: Presenting Argument**

In this area of study students build their understanding of both the analysis and construction of texts that attempt to influence audiences.

#### **Outcome 2**

On completion of this unit the student should be able to construct a sustained and reasoned point of view on an issue currently debated in the media.

#### **Assessment**

The award for satisfactory completion for a unit is based on whether the student has demonstrated the set of outcomes specified for the unit.

#### **Assessment**

School Assessed Coursework for Unit 3 will contribute 25% to the total study score. School Assessed Coursework for Unit 4 will contribute 25% to the total study score. The end-of-year three-hour examination externally marked by assessors appointed by VCAA will contribute to 50% to the total study score.

## Unit 1: How are Earth's systems connected?

In this unit students examine Earth as a set of interacting systems and explore the physical requirements for life. They investigate the physical environment and its components, the interactions that occur in ecosystems and the effects of natural and human-induced changes in ecosystems. A student practical investigation related to ecosystem monitoring (abiotic and biotic factors) and/or ecosystem change is undertaken in this unit.

### Outcomes

1. Compare the processes and timeframes for obtaining life on Earth and explain how Earth's four systems interact to sustain life.
2. Describe the flow of matter and energy, nutrient exchange and environmental changes in ecosystems.
3. Design and undertake an investigation related to ecosystem monitoring and/or change, and draw a conclusion based on evidence from collected data.

## Unit 2: How can pollution be managed?

In this unit students explore the concept of pollution and associated impacts on Earth's four systems through global, national and local perspectives. They explore the significance of technology, government initiatives, communities and individuals in redressing the effects of pollutants, and consider how values, beliefs and evidence affect environmental decision making. Students undertake an in-depth case study of the management strategies that apply to a pollutant of local concern related to ecosystem monitoring and/or change.

### Outcomes

1. Compare a selected pollutant that results in bioaccumulation with an air- or water-borne pollutant, explain how they can be measured and monitored, and describe treatment options.
2. Compare three selected pollutants, with reference to their actions in the atmosphere, biosphere, hydrosphere and lithosphere.
3. Investigate and communicate a substantiated response to an issue involving the management of a selected pollutant of local interest.

***Students are expected to attend all field trips, which will cost approximately \$200 for the year.***

### Assessment

Achievement of all outcomes for both Units 1 and 2 will be measured by performance in a selection of the following tasks:

- A fieldwork report
- A report of a student-designed and/or extended investigation
- A report of a case study
- A comparative study of three selected pollutants
- A report of a practical activity involving the collection of primary data
- A research investigation involving the collection of secondary data
- A model of an aspect of Earth systems
- Analysis of data/results including generalisations/conclusions
- Media analysis/response
- A test comprising multiple choice and/or short answer and/or extended response
- A reflective learning journal/blog related to selected activities or in response to an issue

## Unit 3 - How can biodiversity and development be sustained?

In this unit students focus on environmental management through the examination and application of sustainability principles. They explore the value and management of the biosphere by examining the concept of biodiversity and the services provided to all living things. They analyse the processes that threaten biodiversity and apply scientific principles in evaluating biodiversity management strategies for a selected threatened endemic species.

### Outcomes

1. Explain the importance of Earth's biodiversity, analyse the threats to biodiversity, and evaluate management strategies to maintain biodiversity in the context of one selected threatened endemic species.
2. Explain the principles of sustainability and environmental management and analyse and evaluate a selected environmental science case study.

## Unit 4 - How can the impacts of human energy use be reduced?

### **Outcomes**

1. Compare the advantages and disadvantages of a range of energy sources, evaluate the sustainability of their use, and explain the impacts of their use on society and the environment.
2. Explain the causes and effects of changes to Earth's climate, compare methods of measuring and monitoring atmospheric changes, and explain the impacts of atmospheric changes on living things and the environment.
3. A student practical investigation related to biodiversity or energy use from an environmental management perspective is undertaken in either Unit 3 or Unit 4, or across both Units 3 and 4, and is assessed in Unit 4, Outcome 3.

### **Assessment**

School-Assessed Coursework for Units 3 and 4 will contribute 50% of the final assessment and will include: Written report drawing on data collected from fieldwork or other sources; multimodal presentation; written response to a set of questions; annotations of at least two practical activities from a practical logbook; reflective learning journal/blog related to selected activities or in response to an issue. Students will also design and undertake a practical investigation related to biodiversity or energy use from an environmental management perspective, and present methodologies, findings and conclusions in a scientific poster.

An end-of-year examination will contribute 50% of the final assessment.

***Students are expected to attend all field trips, which will cost approximately \$200 for the year.***

# EXTENDED INVESTIGATION

VCE Extended Investigation is offered only as a Unit 3&4 subject by VCAA. Extended Investigation enables students to carry out an investigation that focuses on a rigorous research question of their choosing. The investigation may be an extension of an area of curriculum already undertaken by the student or it may be completely independent of any other study in the student's VCE program. The class will allow them to develop, refine and extend knowledge and skills in independent research.

Extended Investigation develops students' understanding of what constitutes a good research question. They develop an ethical, robust, disciplined and rational approach to gathering, interpreting and evaluating evidence in order to answer the research question. In this study, students consider how research questions are developed and refined to enable the researcher to address the key issues proposed by the research within the limits that time and resources impose. Students conduct a review of relevant literature, develop research project management knowledge and skills, and develop ways of effectively presenting and communicating research findings. Students are introduced to a broad range of research methods and explore their comparative suitability for the investigation of particular questions. The skills that students develop in this study are transferable to any higher education course or vocational education and training program.

Students will be required to bring a laptop to each class.

## Unit 3 – Designing an Extended Investigation

In this unit students develop skills in question construction and design, explore the nature and purpose of research, and identify a specific research question. Students use their Extended Investigation Journal to record the progressive refinement of a selected area of interest distilled into an individual research question.

Underpinning the student's preparatory work for their investigation is the development and application of critical thinking skills. While the critical thinking component of this study is located in Area of Study 3, it is assumed and expected that students will develop these skills throughout Unit 3 in the context of their individual investigation. Students undertake initial research and document their progress in their Extended Investigation Journal.

### Outcomes

1. Written rationale (800 words) - design and justify a research question.
2. Written research plan (1000 words) and oral report (12 – 16 minutes presentation including question and answer segment) - write a research plan, begin research and present an oral report to a non-specialist audience that explains the investigation and justifies the selected research methods.
3. Critical Thinking test – develop and apply the skills of critical thinking.

## Unit 4 – Presenting an Extended Investigation

This unit is comprised of two parts that together constitute the student's completion of their Extended Investigation. The results of the Extended Investigation are presented in a final written report and in an oral presentation to a non-specialist panel. The final written report is submitted and includes the student's evaluation of the research methods and findings, and provides their response to the research question.

Students also present their investigation as an oral presentation to a non-specialist panel and defend their findings, responding to questions and challenges from the panel.

While undertaking Unit 4, students are supported and monitored to maintain the dimensions and scope of their investigation and to meet the milestones established in Unit 3. The Extended Investigation Journal is used to record the progress of their investigation and the assistance they receive from supervising teachers, academic mentors and others.

### Outcomes

1. Written report including evaluation (4000 words) - complete a written report for a non-specialist audience that presents and evaluates the results of the extended investigation.
2. Oral presentation including response to panel questions (15–20 minutes) - explain the investigation, critically evaluate the research process used, and defend research findings in a presentation to an educated non-specialist audience.

### Assessment

School-assessed coursework for Unit 3 Outcomes 1 and 2 – 30%  
Critical Thinking Test for Unit 3 Outcome 3 – 10%  
Externally-assessed tasks for Unit 4 Outcomes – 60%

## Unit 1 - Food Origins

Students focus on food from historical and cultural perspectives. They investigate the origins and roles of food through time, and across the world. Students will explore how humanity has historically sourced its food, examining general progression from hunter-gatherer to rural-based agriculture, to today's urban living, and global trade in food.

Students explore Australian indigenous food prior to European settlement and how food patterns have changed since, particularly through the influence of food production, processing and manufacturing industries and immigration. Students investigate cuisines that are part of Australia's culinary identity today and reflect on the concept of an Australian cuisine.

Throughout this unit students complete topical and contemporary practical tasks to enhance, demonstrate and share their learning with others.

### **Outcomes**

On completion of this unit students should be able to:

1. Identify and explain major factors in the development of a globalized food supply, and demonstrate adaptations of selected food from earlier cuisines through practical activities.
2. Describe patterns of change in Australia's food industries and cultures, and use foods indigenous to Australia and those introduced through migration in the preparation of food products.

## Unit 2 - Food Makers

Students investigate food systems in contemporary Australia. They will focus on commercial food production industries and food production in small-scale domestic settings, as both a comparison and complement to commercial production. Students gain insight into the significance of food industries to the Australian economy and investigate the capacity of industry to provide safe, high-quality food that meets the needs of consumers.

Students use practical skills and knowledge to produce foods and consider a range of evaluation measures to compare their foods to commercial products. In demonstrating their practical skills, students design new food products and adapt recipes to suit particular needs and circumstances and explore potential entrepreneurial opportunities.

### **Outcomes**

On completion of this unit students should be able to:

1. Describe Australia's major food industries, analyse relationships between food suppliers and consumers, discuss measures in place to ensure a safe food supply and design a brief and a food product that demonstrates the application of commercial principles.
2. Compare and evaluate similar foods prepared in different settings, explain the influences on effective food provision and preparation in the home, and design and create a food product that illustrates potential adaptation in a commercial context.

### **Assessment**

Assessments for Units 1 and 2 are selected from the following:

- Production work and records of production
- Designing and developing a solution in response to a design brief, including production work
- Tests ( short and/ or extended answer)
- Practical tests
- Short written reports ( for example, media analysis, report or comparative analysis on a food testing activity, industry visits, or product evaluation)
- Oral reports supported by visual presentations (for example, multimedia)
- Online publication/communication ( for example, blog/wiki/website/podcast/vodcast)
- Design folio

## Unit 3 - Food in Daily Life

Students explore the science of food: our physical need for it and how it nourishes and sometimes harms our bodies. Students investigate the physiology of eating and appreciating food, and the microbiology of digestion. They also investigate the functional properties of food and the changes that occur during food preparation and cooking. They analyse the scientific rationale behind the Australian Dietary Guidelines and the Australian Guide to Healthy Eating and develop their understanding of diverse nutrient requirements.

Students will focus on the influences on food choice: how communities, families and individuals change their eating patterns over time and how our food values and behaviours develop within social environments. They investigate behavioural principles that assist in the establishment of lifelong, healthy dietary patterns.

The practical component of this unit enables students to understand food science terminology and to apply specific techniques to the production of everyday food that facilitates the establishment of nutritious and sustainable meal patterns.

### **Outcomes**

On completion of this unit students should be able to:

1. Explain the processes of eating and digesting food and absorption of macronutrients, explain causes and effects of food allergies, food intolerances and food contamination, analyse food selection models, and apply principles of nutrition and food science in the creation of food products.
2. Explain and analyse factors affecting food success and choice, analyse the influences that shape an individual's food values, beliefs and behaviours, and apply practical skills to create a range of healthy meals for children and families.

## Unit 4 - Food Issues, Challenges and Futures

Students examine debates about global and Australian food systems. They will focus on issues about the environment, ecology, ethics, farming practices, the development and application of technologies, and the challenges of food security, food safety, food wastage, and the use and management of water and land. Students research a selected topic, seeking clarity on current situations and points of view, considering solutions and analyzing work undertaken to solve problems and support sustainable futures.

Students will focus on individual responses to food information and misinformation and the development of food knowledge, skills and habits to empower consumers to make discerning food choices. Students consider how to assess information and draw evidence-based conclusions. They apply this methodology to navigate contemporary food fads, trends and diets. They practice and improve their food selection skills by interpreting food labels and analyzing the marketing terms used on food packaging.

The practical component provides students with opportunities to apply their responses to environmental and ethical food issues, and to extend their food production repertoire reflecting the Australian Dietary Guidelines and the Australian Guide to Healthy Eating.

### **Outcomes**

On completion of this unit students should be able to:

1. Explain a range of food system issues, respond to a selected debate with analysis of problems and proposals for future solutions, apply questions of sustainability and ethics to the selected food issue and develop and create a food repertoire that reflects personal food values and goals.
2. Explain a variety of food information contexts, analyse the formation of food beliefs, evaluate a selected food trend, fad or diet and create food products that meet the Australian Dietary Guidelines.

### **Assessment**

Percentage contributions to the study score in VCE Food and Technology are as follows:

- Unit 3 School- assessed coursework- 30%
- Unit 4 school-assessed coursework- 30%
- End-of-year examination- 40%

In Geography students explore, analyse and understand the characteristics of places, events and processes that make up our world. Students explore and analyse using fieldwork and investigation of a wide range of secondary sources. These methods enable students to appreciate the complexity, the diversity and interaction of its environments, economies and cultures, and the processes that helped form and transform them.

## Unit 1 - Hazards and Disasters

In this unit students undertake an overview of hazards before investigating two contrasting types of hazards and the responses to them by people. It investigates how people have responded to specific types of hazards, including attempts to reduce vulnerability to, and the impact of, hazard events.

### Outcomes

1. Analyse, describe and explain the nature of hazards and impacts of hazard events at a range of scales.
2. Analyse and explain the nature, purpose and effectiveness of a range of responses to selected hazards and disasters.

## Unit 2 - Tourism

In this unit students investigate the characteristics of tourism, with particular emphasis on where it has developed, its various forms, how it has changed and continues to change and its impacts on people, places and environments. Students select contrasting examples of tourism from within Australia and elsewhere in the world to support their investigations.

### Outcomes

1. Analyse, describe and explain the nature of tourism at a range of scales.
2. Analyse and explain the impacts of tourism on people, places and environments and evaluate the effectiveness of strategies for managing tourism.

### Assessment

All of the outcomes in both units 1 and 2 will be measured by student performance in a range of tasks selected from the following list. There will be at least one assessment task for each outcome.

- Case study
- A report
- Structured questions
- A folio of exercises
- A fieldwork report

Students undertake compulsory fieldwork in Units 1 and 2. Students produce a fieldwork report for assessment in both Units 1 and 2.

## Unit 3 - Changing the Land

This unit focuses on two investigation of geographical change: change to land cover and change to land use. Land cover includes biomes such as forest, grassland, tundra and wetlands, as well as land covered by ice and water. Students investigate three major processes that are changing land cover in many regions of the world: deforestation, desertification, and melting glaciers and ice sheets.

### Outcomes

1. Analyse, describe and explain land use change and assess its impacts.
2. Analyse, describe and explain processes that result in changes to land cover and discuss the impacts and responses resulting from these changes.

## Unit 4 - Human population – Trends and Issues

In this unit students investigate the geography of human populations. They explore the patterns of population change, movement and distribution, and how governments, organisations and individuals have responded to those changes in different parts of the world. Students study population dynamics before undertaking an investigation into two significant population trends arising in different parts of the world. They examine the dynamics of populations and their economic, social, political and environmental impacts on people and places.

### Outcomes

1. Analyse, describe and explain population dynamics on a global scale.
2. Analyse, describe and explain the nature of significant population issues and challenges in selected locations and evaluate responses.

### Assessment

All assessments at Units 3 and 4 are school-based. Procedures for assessment of levels of achievement in Units 3 and 4 are a matter for school decision.  
 Unit 3 School-assessed Coursework: 25 per cent  
 Unit 4 School-assessed Coursework: 25 per cent  
 End-of-year Examination: interpretation and analysis of material relating to all outcomes in Units 3 and 4 – 50%

Students undertake fieldwork in Unit 3. Students produce a fieldwork report for assessment in Unit 3.

The study of Health and Human Development is based on the premise that health and human development needs to be promoted at an individual level, within the family, community and at national levels. The study also promotes the understanding that our behaviours and environment play a major role in influencing both health status and individual human development.

## Unit 1 - Understanding Health and Wellbeing

This unit looks at health and wellbeing as a concept with varied and evolving perspectives and definitions. It takes the view that health and wellbeing are subject to a wide range of contexts and interpretations, with different meanings for different people. As a foundation to the understanding of health, students should investigate the World Health Organization's (WHO) definition and also explore other interpretations. Wellbeing is a complex combination of all dimensions of health, characterised by an equilibrium in which the individual feels happy, healthy, capable and engaged. For the purposes of this study, students should consider wellbeing to be an implicit element of health.

### Outcomes

1. Students should be able to explain multiple dimensions of health and wellbeing, explain indicators used to measure health status and analyse factors that contribute to variations in health status of youth.
2. Students should be able to apply nutrition knowledge and tools to the selection of food and the evaluation of nutrition information.
3. Students should be able to interpret data to identify key areas for improving youth health and wellbeing, and plan for action by analysing one particular area in detail.

## Unit 2 - Managing Health and Development

This unit investigates transitions in health and wellbeing, and development, from lifespan and societal perspectives. Students look at changes and expectations that are part of the progression from youth to adulthood. This unit promotes the application of health literacy skills through an examination of adulthood as a time of increasing independence and responsibility, involving the establishment of long-term relationships, possible considerations of parenthood and management of health-related milestones and changes.

### Outcomes

1. Students should be able to explain developmental changes in the transition from youth to adulthood, analyse factors that contribute to healthy development during prenatal and early childhood stages of the lifespan and explain health and wellbeing as an intergenerational concept.
2. Students should be able to describe how to access Australia's health system, explain how it promotes health and wellbeing in their local community, and analyse a range of issues associated with the use of new and emerging health procedures and technologies.

### Assessment

All of the outcomes for both unit 1 and 2 will be assessed through tasks selected from:

- Case study analysis
- Data analysis
- Visual presentation (concept/mind map, poster or oral presentation)
- Written reports
- Structured questions

## Unit 3 - Australia's Health in a Globalised World

This unit looks at health, wellbeing and illness as multidimensional, dynamic and subject to different interpretations and contexts. Students begin to explore health and wellbeing as a global concept and to take a broader approach to inquiry. As they consider the benefits of optimal health and wellbeing and its importance as an individual and a collective resource, their thinking extends to health as a universal right.

### Outcomes

1. Students should be able to explain the complex, dynamic and global nature of health and wellbeing, interpret and apply Australia's health status data and analyse variations in health status.
2. Students should be able to explain changes to public health approaches, analyse improvements in population health over time and evaluate health promotion strategies.

## Unit 4 - Health and Human Development in a Global Context

This unit examines health and wellbeing, and human development in a global context. Students use data to investigate health status and burden of disease in different countries, exploring factors that contribute to health inequalities between and within countries, including the physical, social and economic conditions in which people live.

### Outcomes

1. Students should be able to analyse similarities and differences in health status and burden of disease globally and the factors that contribute to differences in health and wellbeing
2. Students should be able to analyse relationships between the Sustainable Development Goals and their role in the promotion of health and human development, and evaluate the effectiveness of global aid.

### Assessment

The student's level of achievement will be determined by School-assessed Coursework (three SACs per unit) and an End-of-year Examination.

Contribution to final assessment

Unit 3 School-assessed Coursework - 25%

Unit 4 School-assessed Coursework - 25%

End-of-year Examination - 50%

## Unit 1 - Twentieth Century History 1918 - 1939

In this area of study students explore the events, ideologies and movements of the period after World War One; the emergence of conflict; and the causes of World War Two. They investigate the impact of the treaties which ended the Great War and which redrew the map of Europe and broke up the former empires of the defeated nations. They consider the aims, achievements and limitations of the League of Nations.

Students focus on the social life and cultural expression in the 1920s and 1930s and their relation to the technological, political and economic changes of the period. Students explore particular forms of cultural expression from the period in one or more of the following contexts: Italy, Germany, Japan, USSR and/or USA.

### **Outcomes**

1. Explain the consequences of the peace treaties which ended World War One the impact of ideologies on nations and the events that led to World War Two.
2. Explain patterns of social life and cultural change in one or more contexts, and analyse the factors which influenced changes to social life and culture, in the inter-war years.

## Unit 2 - Twentieth Century History 1945 - 2000

In Unit 2 students explore the nature and impact of the Cold War and challenges and changes to existing political, economic and social arrangements in the second half of the twentieth century.

In this area of study students focus on the ways in which traditional ideas, values and political systems were challenged and changed by individuals and groups in a range of contexts during the period 1945 to 2000. Students explore the causes of significant political and social events and movements, and their consequences for nations and people.

### **Outcomes**

1. Explain the ideological divisions in the post-war period and analyse the nature, development and impact of the Cold War on nations and people, in relation to one or more particular conflicts in the period.
2. Explain the causes and nature of challenge and change in relation to two selected contexts in the second half of the twentieth century and analyse the consequences for nations and people.

### **Assessment**

All of the outcomes in both Units 1 and 2 will be measured by student performance in a range of tasks selected from the following list. There will be at least one assessment task for each outcome. Assessment tasks over Units 1 and 2 should include the following:

- A historical inquiry
- An analysis of primary sources
- An analysis of historical interpretations
- An essay

## Unit 3 - Australian history: Transformations: Colonial Society to Nation

In this unit students explore the transformation of the Port Phillip District from the 1830s through to the end of the gold rush decade in 1860. Students examine transformations in the way of life of the Aboriginal peoples and to the environment as the European society consolidated itself. Students also explore the type of society Australians attempted to create in the early years of the newly federated nation.

### **Outcomes**

1. Analyse the nature of change in the Port Phillip District/Victoria in the period 1834 - 1860
2. Analyse the visions and actions that shaped the new nation from 1890 to 1920, and the changes and continuities to these visions that resulted from participation in World War One.

## Unit 4 - Australian history: Transformations: Old Certainties and New Visions

In this unit students investigate the continuing development of the nation in the early part of the twentieth century and the dramatic changes that occurred in the latter part of the century. Students also explore social, economic and political changes in the latter part of the twentieth century that collectively challenged and/or overturned much of Australia's earlier carefully constructed social and economic fabric. Students examine two changes drawn from: Australia's involvement in the Vietnam War, Aboriginal land rights, equality for women, new patterns of immigration and/or global economy.

### **Outcomes**

1. Analyse the social, economic and political consequences of a crisis on the nation.
2. Analyse and evaluate two key social, economic and political changes in late twentieth century Australia.

### **Assessment**

All assessments at Units 1 and 2 are school-based. Procedures for assessment of levels of achievement in Units 1 and 2 are a matter for school decision.

Unit 3 and 4 - Each of the following four assessment tasks must be completed over Units 3 and 4: a historical report, an analysis of primary sources, an analysis of historical interpretations and an essay.

Unit 3 School-assessed Coursework: 25 per cent

Unit 4 School-assessed Coursework: 25 per cent

End-of-year Examination: interpretation and analysis of material relating to all outcomes in Units 3 and 4 - 50%

VCE Industry and Enterprise investigates work and its place in work settings, industries and society. The study explores the vocational, economic, social and cultural aspects of work and encourages students to undertake a theoretical and practical investigation of these aspects throughout the four units. Students investigate trends and patterns in Australian workplaces and industries and significant issues affecting Australian industries, and analyse the industry responses to these issues. A key feature of VCE Industry and Enterprise is the structured workplace learning that students are required to undertake. Integral to this study are work-related skills, which cover a range of skills that are seen as being important for entry-level employees to develop and for life generally. Students develop work-related skills across a range of personal, community and work settings.

## Unit 1 - Workplace participation

This unit prepares students for effective workplace participation. Their exploration of the importance of work-related skills is integral to this unit. Students develop work-related skills by actively exploring their individual career goals and pathways.

### **Outcomes**

1. Investigate career pathways and analyse current and future work options.
2. Explain the entry-level requirements for obtaining work in a selected industry, and discuss the importance of developing personal work-related skills.
3. Explain a work-related issue for a selected occupation in a specific workplace, and discuss ways that work-related skills may be used to deal with this issue.

## Unit 2 - Being enterprising

In this unit students explore the development of enterprising behaviour, leadership and innovation in different settings within industry and in the context of significant issues faced by industry.

### **Outcomes**

1. Identify and discuss enterprising behaviour in individuals and explain the relationship between enterprising behaviour and leadership.
2. Describe the characteristics of a selected industry, evaluate the extent to which enterprising behaviours are applied in selected work settings within this industry, and explain the role of work-related skills in supporting innovation in the industry.
3. Analyse the impact of one or more significant issue/s on an Australian industry and discuss how the industry has responded to the issue/s in an enterprising way.

### **Assessment**

Demonstration of achievement of Outcomes 1, 2 and 3 must be based on the student's performance on a selection of assessment tasks.

Assessment tasks for this unit are selected from the following:

- an industry investigation and profile
- an interview and a personal profile
- a work-related skills portfolio
- a self-assessment
- a workplace investigation
- a workplace learning report
- a multimedia presentation
- an essay
- a test
- a case study

## Unit 3 - Enterprise culture

In this unit students focus on the development of enterprise culture in community and/or work settings and within Australian industries. The future of Australian industry relies on the ongoing development of a successful enterprise culture. Work settings within Australian industries are continually affected by ongoing forces for change and to succeed they need to respond in enterprising ways. Integral to understanding enterprise culture is the students' exploration of the importance of work-related skills.

### **Outcomes**

1. Describe and discuss enterprise culture in a community and/or work setting, and explain how the development of work-related skills by individuals contributes to an enterprise culture.
2. Discuss the role of the management of quality, workplace flexibility, technology, and training and workplace learning in developing an enterprise culture in work settings in one or more industries.

## Unit 4 - Industry change and innovation

Australian industry is faced with ongoing pressures and opportunities for change: the role of government; international competitiveness; changing societal values and attitudes; and environmental sustainability. In this unit students investigate the enterprising responses by industry to these pressures and opportunities and how these are transforming the Australian workplace.

### **Outcomes**

1. Describe and analyse pressures and opportunities for change, evaluate responses to change in an Australian industry, and discuss how development of work-related skills assists the industry in responding to change.
2. Discuss the extent to which innovation is occurring in a selected Australian industry, evaluate the extent to which innovation is occurring in one or more workplaces within that industry, and discuss the relationship between innovation and an enterprise culture.

### **Assessment**

The student's level of achievement in Unit 3 & 4 will be determined by School-assessed Coursework. School-assessed Coursework for Unit 3 will contribute 25 per cent. School-assessed Coursework for Unit 4 will contribute 25 per cent.

The student's performance on each outcome is assessed using one or more of the following:

- a report (written or multimedia)
- a case study
- an essay
- a test

The level of achievement for Units 3 and 4 is also assessed by an end-of-year examination, which will contribute 50 per cent.

## Unit 1 - Applied Computing

In this unit students are introduced to the stages of the problem-solving methodology. Students focus on how data can be used within software tools such as databases and spreadsheets to create data visualisations, and the use of programming languages to develop working software solutions. In Area of Study 1, as an introduction to data analytics, students respond to a teacher-provided analysis of requirements and designs to identify and collect data in order to present their findings as data visualisations. They present work that includes database, spreadsheet and data visualisations solutions. In Area of Study 2, students select and use a programming language to create a working software solution. Students prepare, document and monitor project plans and engage in all stages of the problem-solving methodology.

### **Software Tools Used**

The following indicates the software tools that students are required to both study and use in this unit.

Database software, spreadsheet software and data visualisation software.

An appropriate programming language.

### **Outcome 1**

On completion of this unit the student should be able to interpret teacher-provided solution requirements and designs, collect and manipulate data, analyse patterns and relationships, and develop data visualisations to present findings.

### **Outcome 2**

On completion of this unit the student should be able to interpret teacher-provided solution requirements to design, develop and evaluate a software solution using a programming language.

## Unit 2 - Applied Computing

In this unit students focus on developing innovative solutions to needs or opportunities that they have identified, and propose strategies for reducing security risks to data and information in a networked environment.

In Area of Study 1 students work collaboratively and select a topic for further study to create an innovative solution in an area of interest. The innovative solution can be presented as a proof of concept, a prototype or a product. Students engage in all areas of the problem-solving methodology. In Area of Study 2, as an introduction to cybersecurity, students investigate networks and the threats, vulnerabilities and risks to data and information. They propose strategies to protect the data accessed using a network.

### **Software Tools Used**

The following indicates the software tools that students are required to both study and use in this unit.

Any software tools used to create an innovative solution, for example a programming language, spreadsheet software, web-authoring software, presentation software, tool for planning a project. A software tool to represent a network.

### **Outcome 1**

On completion of this unit the student should be able to, in collaboration with other students, analyse, design, develop and evaluate an innovative solution to an identified need or opportunity involving a digital system.

### **Outcome 2**

On completion of this unit the student should be able to respond to a teacher-provided case study to examine the capabilities and vulnerabilities of a network, design a network solution, discuss the threats to data and information, and propose strategies to protect the security of data and information.

### **Assessment**

Achievement of Outcomes 1 and 2 in each of Units 1 and 2 will be measured by performance in a selection of the following tasks:

- Using Digital Systems and Techniques
- Create a solution in response to a need or opportunity
- Visual Presentations
- Oral Presentations
- Written Reports

## Unit 3 - Data Analytics

In this unit students apply the problem-solving methodology to identify and extract data through the use of software tools such as database, spreadsheet and data visualisation software to create data visualisations or infographics. Students develop an understanding of the analysis, design and development stages of the problem-solving methodology.

In Area of Study 1 students respond to teacher-provided solution requirements and designs.

Students develop data visualisations and use appropriate software tools to present findings. Appropriate software tools include database, spreadsheet and data visualisation software.

In Area of Study 2 students propose a research question, prepare a project plan, collect and analyse data, and design infographics or dynamic data visualisations. Area of Study 2 forms the first part of the School-assessed Task (SAT) that is completed in Unit 4, Area of Study 1.

### **Software Tools Used**

The following indicates the software tools that students are required to both study and use in this unit.

Database software, spreadsheet software and data visualisation software.

At least one data manipulation tool and one visualisation tool, for example database software, spreadsheet software, data visualisation software, tool for planning a project.

### **Outcome 1**

On completion of this unit the student should be able to respond to teacher-provided solution requirements and designs to extract data from large repositories, manipulate and cleanse data and apply a range of functions to develop software solutions to present findings.

### **Outcome 2**

On completion of this unit the student should be able to propose a research question, formulate a project plan, collect and analyse data, generate alternative design ideas and represent the preferred design for creating infographics or dynamic data visualisations.

## Unit 4 - Data Analytics

In this unit students focus on determining the findings of a research question by developing infographics or dynamic data visualisations based on large complex data sets and on the security strategies used by an organisation to protect data and information from threats.

In Area of Study 1 students apply the problem-solving stages of development and evaluation to develop their preferred design prepared in Unit 3, Area of Study 2, into infographics or dynamic data visualisations, and evaluate the solutions and project plan. Area of Study 1 forms the second part of the School-assessed Task (SAT). In Area of Study 2 students investigate security practices of an organisation. They examine the threats to data and information, evaluate security strategies and recommend improved strategies for protecting data and information.

### **Software Tools Used**

The following indicates the software tools that students are required to both study and use in this unit.

At least one data manipulation tool and one visualisation tool, for example database software, spreadsheet software, data visualisation software, tool for planning a project.

### **Outcome 1**

On completion of this unit the student should be able to develop and evaluate infographics or dynamic data visualisations that present findings in response to a research question, and assess the effectiveness of the project plan in monitoring progress.

### **Outcome 2**

On completion of this unit the student should be able to respond to a teacher-provided case study to investigate the current data and information security strategies of an organisation, examine the threats to the security of data and information, and recommend strategies to improve current practices.

### **Assessment**

School Assessed Tasks – 30%

School Assessed Coursework Unit 3 – 10%

School Assessed Coursework Unit 4 – 10%

End of Year Examination 50%

## Unit 3 - Software Development

In this unit students apply the problem-solving methodology to develop working software modules using a programming language. Students develop an understanding of the analysis, design and development stages of the problem-solving methodology.

In Area of Study 1 students respond to teacher-provided solution requirements and designs and develop a set of working modules through the use of a programming language. Students examine a simple software requirements specification and a range of software design tools in order to apply specific processing features of a programming language to create working modules. In Area of Study 2 students analyse a need or opportunity, select an appropriate development model, prepare a project plan, develop a software requirements specification and design a software solution. Area of Study 2 forms the first part of the School-assessed Task (SAT) that is completed in Unit 4, Area of Study 1.

### **Software Tools Used**

The following table indicates the software tools that students are required to both study and use in this unit.

An appropriate programming language.  
Unified Modelling Language (UML) and UML tools to create use cases.

### **Outcome 1**

On completion of this unit the student should be able to interpret teacher-provided solution requirements and designs, and apply a range of functions and techniques using a programming language to develop and test working software modules.

### **Outcome 2**

On completion of this unit the student should be able to analyse and document a need or opportunity, justify the use of an appropriate development model, formulate a project plan, generate alternative design ideas and represent the preferred solution design for creating a software solution.

## Unit 4 - Software Development

In this unit students focus on how the information needs of individuals and organisations are met through the creation of software solutions. They consider the risks to software and data during the software development process, as well as throughout the use of the software solution by an organisation.

In Area of Study 1 students apply the problem-solving stages of development and evaluation to develop their preferred design prepared in Unit 3, Area of Study 2, into a software solution and evaluate the solution, chosen development model and project plan. Area of Study 1 forms the second part of the School-assessed Task (SAT). In Area of Study 2 students examine the security practices of an organisation and the risks to software and data during the development and use of the software solutions. Students evaluate the current security practices and develop a risk management plan.

### **Software Tools Used**

The following table indicates the software tools that students are required to both study and use in this unit.

An appropriate programming language.  
The following table indicates the software tool that students are required to use, but not required to study, in this unit.  
Appropriate tool for documenting project plans.

### **Outcome 1**

On completion of this unit the student should be able to develop and evaluate a software solution that meets requirements, evaluate the effectiveness of the development model and assess the effectiveness of the project plan.

### **Outcome 2**

On completion of this unit the student should be able to respond to a teacher-provided case study to examine the current software development security strategies of an organisation, identify the risks and the consequences of ineffective strategies and recommend a risk management plan to improve current security practices.

### **Assessment**

School Assessed Tasks – 30%  
School assessed Coursework Unit 3 - 10%  
School assessed Coursework Unit 4 - 10%  
End of Year Examination - 50 %

## Unit 1 - Languages

Students will develop an understanding of the language and culture/s of Italian/Japanese-speaking communities through the study of three or more topics. Students will use Italian or Japanese to meet three outcomes:

### **Outcomes**

1. Exchange meaning in a spoken interaction in the target language.
2. Interpret information from two texts on the same topics and respond in writing in the target language and in English.
3. Present information, concepts and ideas in writing on the selected topic and for a specific audience and purpose.

## Unit 2 - Languages

These courses build on the knowledge and skills developed in Unit 1, allowing students to gather, interpret and convey information, ideas and opinions.

### **Outcomes**

1. Respond in writing in the target language to spoken, written or visual texts presented in the target language.
2. Analyse and use information from written, spoken or visual texts to produce an extended written response in the target language.
3. Explain information, ideas and concepts orally in the target language to a specific audience about an aspect of culture within communities where the target language is spoken.

### **Assessment**

The College will assess levels of performance through four tasks per unit selected from:

- Article
- Conversation
- Email
- Essay
- Formal letter
- Interview
- Journal entry
- Personal account/ blog post
- Personal letter
- Report
- Review
- Role-play
- Speech (script)
- Story

## Unit 3 - Languages

Units 3 and 4 will continue to develop listening, speaking, reading and writing skills through the prescribed themes and topics. In Unit 3 there are three outcomes:

### **Outcomes**

1. Participate in a spoken exchange in the target language to resolve a personal issue.
2. Interpret information from texts and write responses in the target language.
3. Express ideas in a personal, informative or imaginative piece of writing in the target language.

## Unit 4 - Languages

In this unit students also complete three outcomes:

### **Outcomes**

1. Share information, ideas and opinions in a spoken exchange in the target language.
2. Analyse information from written, spoken and viewed texts for use in a written response in the target language.
3. Present information, concepts and ideas in evaluative or persuasive writing on an issue in the target language.

### **Assessment**

School-assessed Coursework (50%) and two end-of-year examinations (50%), one written and one oral, will determine students' level of achievement.

### **NOTES**

- Upon entry to a VCE Languages, students should have successfully completed five units of Italian or Japanese up to Year 10.
- It is recommended that students entering a Language have previously studied the language in Years 7 to 10 or be able to read, write and speak the language at home.
- If you wish to study a language not taught at the College you should talk to Mr Hayakawa about enrolling in the Victorian School of Languages (VSL) and attending a VSL Centre on Saturday or completing the study online.
- Bonus points for your ATAR may be awarded for the completion of Units 3 and 4.

## Unit 1 - Guilt and Liability

This unit develops an understanding of legal foundations, such as the different types and sources of law and the existence of a court hierarchy in Victoria. Students investigate key concepts of criminal law and civil law and apply these to actual and/or hypothetical scenarios to determine whether an accused may be found guilty of a crime, or liable in a civil dispute. In doing so, students develop an appreciation of the way in which legal principles and information are used in making reasoned judgments and conclusions about the culpability of an accused, and the liability of a party in a civil dispute.

This unit also investigates how criminal law and civil law aim to achieve social cohesion and protect the rights of individuals. Criminal law is aimed at maintaining social order and infringing criminal law can result in charges. Civil law deals with the infringement of a person's or group's rights and breaching civil law can result in litigation.

### **Outcomes**

1. Describe the main sources and types of law, and assess the effectiveness of laws.
2. Explain the purposes and key concepts of criminal law, and use legal reasoning to argue the criminal culpability of an accused based on actual and/or hypothetical scenarios.
3. Explain the purposes and key concepts of civil law, and apply legal reasoning to argue the liability of a party in civil law based on actual and/or hypothetical scenarios.

## Unit 2 - Sanctions, Remedies and Rights

This unit focuses on the enforcement of criminal law and civil law, the methods and institutions that may be used to determine a criminal case or resolve a civil dispute, and the purposes and types of sanctions and remedies and their effectiveness. Students undertake a detailed investigation of two criminal cases and two civil cases from the past four years to form a judgment about the ability of sanctions and remedies to achieve the principles of justice. Students develop their understanding of the way rights are protected in Australia and in another country, and possible reforms to the protection of rights. They examine a significant case in relation to the protection of rights in Australia.

### **Outcomes**

1. Explain key concepts in the determination of a criminal case, and discuss the principles of justice in relation to the determination of criminal cases, sanctions and sentencing approaches.
2. Explain key concepts in the resolution of a civil dispute, and discuss the principles of justice in relation to the resolution of civil disputes and remedies.
3. Evaluate the ways in which rights are protected in Australia, compare this approach with that adopted by another country and discuss the impact of an Australian case on the rights of individuals and the legal system.

### **Assessment**

Demonstration of achievement of outcomes in both Units 1 and 2 must be based on the student's performance on a selection of assessment tasks. Assessment tasks for both units are selected from the following:

- Structured questions
- A debate
- A role-play
- A folio of exercises
- Question and answer session
- A classroom presentation
- A report

## Unit 3 - Rights and Justice

The purpose of this unit is to enable students to develop an understanding of the Victorian justice system, the institutions that determine laws and the roles of key participants. The Victorian justice system, which includes the criminal and civil justice systems, aims to protect the rights of individuals and uphold the principles of justice: fairness, equality and access. In this unit students examine the methods and institutions in the justice system and consider their appropriateness in determining criminal cases and resolving civil disputes. Students consider the Magistrates' Court, County Court and Supreme Court within the Victorian court hierarchy, as well as other Victorian legal institutions and bodies available to assist with cases. Students explore matters such as the rights available to an accused and to victims in the criminal justice system, the roles of the judge, jury, legal practitioners and the parties, and the ability of sanctions and remedies to achieve their purposes. Students investigate the extent to which the principles of justice are upheld in the justice system. They discuss recent reforms from the past four years and recommended reforms to enhance the ability of the justice system to achieve the principles of justice. Throughout this unit, students apply legal reasoning and information to actual and/or hypothetical scenarios.

### **Outcomes**

1. Explain the rights of the accused and of victims in the criminal justice system, discuss the means used to determine criminal cases and evaluate the ability of the criminal justice system to achieve the principles of justice.
2. Analyse the factors to consider when initiating a civil claim, discuss the institutions and methods used to resolve civil disputes and evaluate the ability of the civil justice system to achieve the principles of justice.

## Unit 4 - The People and the Law

The purpose of this unit is to enable students to develop an understanding of Australia's laws and legal system. This involves an understanding of institutions that make and reform our laws, and the relationship between the Australian people, the Australian Constitution and law-making bodies. In this unit, students explore how the Australian Constitution establishes the law-making powers of the Commonwealth and state parliaments, and protects the Australian people through structures that act as a check on parliament in law-making. Students develop an understanding of the significance of the High Court in protecting and interpreting the Australian Constitution. They investigate parliament and the courts, and the relationship between the two in law-making, and consider the roles of the individual, the media and law reform bodies in influencing law reform. Throughout this unit, students apply legal reasoning and information to actual scenarios.

### **Outcomes**

1. Discuss the significance of High Court cases involving the interpretation of the Australian Constitution and evaluate the ways in which the Australian Constitution acts as a check on parliament in law-making.
2. Discuss the factors that affect the ability of parliament and courts to make law, evaluate the ability of these law-makers to respond to the need for law reform, and analyse how individuals, the media and law reform bodies can influence a change in the law.

### **Assessment**

School assessed coursework will contribute 50% of the assessment for the whole of the Units 3 and 4 sequence (25% per unit). The student's performance on each outcome will be assessed using one or more of the following: a case study, structured questions, a test, an essay, a report in written format, a report in multimedia format and a folio of exercises. The end-of-year examination will focus on the interpretation and analysis of material relating to all outcomes in Units 3 and 4 and will contribute to 50% of the overall assessment study score.

Students taking this study at any level are expected to have an interest in reading and an ability to accurately and fluently express ideas in writing.

## Unit 1 - Approaches To Literature

### **Area Of Study 1: Reading Practices**

In this area of study students consider how language, structure and stylistic choices are used in different literary forms and types of texts (both print and non-print).

#### **Outcome 1**

On completion of this unit the students should be able to respond to a range of texts and reflect on influences shaping these responses.

### **Area Of Study 2: Ideas And Concerns In Texts**

In this area of study students investigate the ideas and concerns raised in texts and the ways social and cultural contexts are represented.

#### **Outcome 2**

On completion of this unit the student should be able to analyse the ways in which a selected text reflects or comments on the ideas and concerns of individual and particular groups in society.

#### **Assessment**

The award for satisfactory completion for a unit is based on whether the student has demonstrated the set of outcomes specified for the unit.

## Unit 2: Contexts and Connections

In this unit students explore the ways literary texts connect with each other and with the world. They deepen their examination of the ways their own culture and the cultures represented in texts can influence their interpretations and shape different meanings.

### **Area Of Study 1: The Text, The Reader And Their Contexts**

In this area of study students focus on the interrelationships between the text, readers and their social and cultural contexts.

#### **Outcome 1**

On completion of this unit the student should be able to analyse and respond critically and creatively to the ways a text from a past era and/or a different culture reflect or comment on the ideas and concerns of individuals and groups in that context.

### **Area Of Study 2: Exploring Connections Between texts**

In this area of study students focus on the ways that texts relate to and influence each other.

#### **Outcome 2**

On completion of this unit the student should be able to compare texts considering the dialogic nature of texts and how they influence each other.

#### **Assessment**

The award for satisfactory completion for a unit is based on whether the student has demonstrated the set of outcomes specified for the unit.

## Unit 3 - Form And Transformation

In this unit students consider how the form of a text affects meaning, and how writers construct their texts.

### **Area Of Study 1: Adaptations and Transformations**

In this area of study students focus on how the form of text contributes to the meaning of the text.

#### **Outcome 1**

On completion of this unit the student should be able to analyse the extent to which meaning changes when a text is adapted to a different form.

### **Area Of Study 2: Creative Responses To Texts**

In this area of study students focus on the imaginative techniques used for creating and recreating a literary work.

#### **Outcome 2**

On completion of this unit the student should be able to respond creatively to a text and comment on the connections between the text and the response.

#### **Assessment**

The award for satisfactory completion for a unit is based on whether the student has demonstrated the set of outcomes specified for the unit.

## Unit 4 - Interpreting Texts

In this unit students develop critical and analytic responses to texts.

### **Area Of Study 1: Literary Perspectives**

In this area of study students focus on how different readings of texts may reflect the views and values of both writer and reader.

#### **Outcome 1**

On completion of this unit students should be able to produce an interpretation of a text using different literary perspectives to inform their view.

### **Area Of Study 2: Close Analysis**

In this area of study students focus on detailed scrutiny of the language, style, concerns and construction of texts.

#### **Outcome 2**

On completion of this unit the student should be able to analyse features of texts and develop and justify interpretations of texts.

#### **Assessment**

The award for satisfactory completion for a unit is based on whether the student has demonstrated the set of outcomes specified for the unit.

#### **ASSESSMENT**

School Assessed Coursework for Unit 3 will contribute 25% to the total study score.

School Assessed Coursework for Unit 4 will contribute 25% to the total study score.

The end-of-year two-hour examination externally marked by assessors appointed by VCAA will contribute to 50% to the total study score.

## Units 1 & 2

Foundation Mathematics is designed for students who need mathematical skills to support their other studies. **It is for students who do not intend to undertake Unit 3 and 4 Mathematics in the following year.**

There is a strong emphasis on practical mathematics relating to everyday life, personal work and study. These units will be especially useful to students undertaking VET studies. The areas of study are Space, Shape and Design, Patterns and Number, Data and Measurement.

### **Outcomes**

1. Confidently and competently use mathematical skills and concepts from the areas of study of Space, Shape and Design, Patterns and Number, Data and Measurement.
2. Apply and discuss basic mathematical procedures relating to familiar situations, personal work and study.
3. Select and use technology to apply mathematics to a range of practical contexts.

### **Assessment**

- Topic tests
- Assignments and reports
- Investigations and Projects
- Summary or Review Notes
- Incorporation of ICT in the achievement of Outcomes 1 & 2.
- Student workbooks must be kept up to date, including homework and class work

# FURTHER MATHEMATICS

## Units 3 & 4

**This course may only be chosen by students who have obtained a satisfactory pass in Year 11 General Mathematics and/or completed Year 11 Mathematical Methods.** The course follows the areas of study completed in Year 11 General Mathematics.

Further Mathematics consists of two areas of study:

### Area of Study 1 (Core) – completed in Unit 3

- Data Analysis
- Recursion and financial modelling

### Area of Study 2 (Applications) – completed in Unit 4

A selection of two from the following four modules:

- Graphs and Relations
- Geometry and Measurement
- Matrices
- Networks and Decision Mathematics

### Outcomes

1. Define and explain key terms and concepts and use this knowledge to apply related mathematical techniques and models in a routine manner.
2. Select and apply the mathematical concepts, models and techniques as specified in the Core and Modules in a range of contexts of increasing complexity.
3. Select and appropriately use numerical, symbolic and statistical functionalities of technology to develop mathematical ideas, produce results and carry out analysis in situations requiring problem-solving, modelling or investigative techniques or approaches.

### Assessment

- School-assessed Coursework will contribute 34% towards the Study Score. School-assessed Coursework consists of One Application Task (completed in Unit 3) and three Modelling or Problem Solving Tasks (completed in Units 3 and 4)
- Examination 1 (Multiple Choice questions) will contribute 33% towards the Study Score.
- Examination 2 (Written Response questions) will contribute 33% towards the Study Score
- Topic Tests throughout the units

# SPECIALIST MATHS

## Units 1 & 2

**This course can only be chosen in conjunction with Mathematical Methods 1 & 2. The major part of the course is designed to be studied in parallel with Mathematical Methods 1 & 2.** In order to give students the best opportunity for success in Mathematical Methods in Year 12. A part of the course is aimed at those students who have shown the ability to study Specialist Mathematics in Year 12. These units cover Linear Relations, Graphs Equations, Univariate & Bivariate Data, Number Systems, Shape and Measurement, Trigonometry, Sequences and Series, Coordinate Geometry and Variation, Polynomial Functions and Probability. Your Mathematics Teacher will have made a recommendation as to the most appropriate Mathematics choice/s for you. Check with your teacher if you are unsure of which Mathematics units to choose.

### Outcomes

1. Define and explain key concepts in relation to topics from the selected areas of study and apply a range of related mathematical routines and procedures.
2. Apply mathematical processes in non-routine contexts and analyse and discuss these applications in at least three of the areas of study.
3. Use technology to carry out analyses of situations requiring problem solving, modelling or investigation in at least three of the areas of study.

### Assessment

- Topic tests
- Assignments
- Summary or review notes
- Projects – Short written responses, problem solving tasks, modelling tasks.
- Incorporation of ICT in the achievement of Outcomes 1 & 2.
- Student workbooks must be kept up to date, including homework and class work

## Units 3 & 4

**This is a highly academic course and can only be attempted by students who are also studying Mathematical Methods 3 & 4.** It is for students requiring a high level of mathematics for careers in areas such as the physical sciences and engineering fields. Students undertake the following areas of study: Coordinate Geometry, Circular (Trigonometric) Functions, Algebra, Calculus, Vectors in two and three Dimensions, Mechanics and Probability.

### *Outcomes*

1. Define and explain key terms and concepts in the Coordinate Geometry, Circular Functions, Algebra, Calculus, Vectors in Two and Three Dimensions and Mechanics areas of study and apply related mathematical routines and procedures.
2. Apply mathematical processes with an emphasis on general cases, in non-routine contexts and analyse and discuss these applications of mathematics.
3. Appropriately use technology to develop mathematical ideas, produce results and carry out analyses requiring problem solving. Modelling or investigate techniques or approaches.

### *Assessment*

- School-assessed Coursework – One Application Task, Two Analysis Tasks, Two Tests – 34%
- Two End-of-year Examinations
- Examination 1 – Facts, skills and applications – 22%
- Examination 2 – Analysis tasks – 44%
- Topic Tests throughout the units

# GENERAL MATHEMATICS

## Units 1 & 2

**This course is designed for students who have performed well in Year 10 Mathematics (General) and who wish to continue their study of Mathematics in year 12. The successful completion of General Mathematics Units 1 & 2 allows entry into the study of Further Mathematics Units 3 & 4 at year 12.**

This course covers the following six Areas of Study:

**Algebra and Structure** - Linear relations and equations

**Arithmetic and Number** - Financial arithmetic

**Discrete Mathematics** - Recursion

**Geometry, Measurement and Trigonometry** - Shape and measurement, Applications of trigonometry

**Graphs of linear and non-linear relations** - Linear graphs and models, Inequalities and linear programming

**Statistics** - Investigating and comparing data distributions, Investigating the relationship between two numerical variables

### *Outcomes*

1. Define and explain key concepts in relation to topics from the selected areas of study and apply a range of related mathematical routines and procedures.
2. Select and apply mathematical facts, concepts, models and techniques to investigate and analyse extended application problems or tasks in a range of contexts.
3. Select and use numerical, graphical, symbolic and statistical functionalities of technology to carry out analysis in situations requiring problem-solving, modelling or investigative techniques.

### *Assessment*

- Topic tests
- Assignments
- Modelling or problem solving tasks and mathematical investigations
- Summary or review notes
- Incorporation of ICT in the achievement of Outcomes 1 & 2.
- Student workbooks must be kept up to date, including homework and class work

## Units 1 & 2

Students will need to be motivated, determined and hard working to complete these units. **It is recommended that students also study Specialist Mathematics in order to prepare them for Year 12 Mathematics. In order for students to be successfully enrolled in this course they need to be part of the top Advanced Mathematics group and have completed at least one of the Trigonometry & Calculus electives during Year 10.**

These units involve the following areas of study  
**Function & Graphs** - covers graphical representation of algebraic functions and the key features such as axis intercepts, domain, range, stationary points, asymptotic behaviour and symmetry.

**Algebra** - covers the solution processes of polynomial equations and simultaneous linear equations numerically, graphically and algebraically.

**Calculus** - covers the constant and average rates of change and an introduction to instantaneous rate of change of a function.

**Probability & Statistics** - covers the concepts of event, frequency, probability and representation of finite sample spaces and events using various forms such as lists, grids, venn diagrams, karnaugh maps, tables and tree diagrams. This includes consideration of impossible, certain, complementary, mutually exclusive, conditional and independent events involving one, two or three events, including rules for computation of probabilities for compound events.

### Outcomes

1. Define and explain key concepts as specified in the content from the areas of study, and apply a range of related mathematical routines and procedures.
2. Apply mathematical processes in non-routine contexts to analyse and discuss these applications of mathematics.
3. Use numerical, graphical, symbolic and statistical functionalities of technology to develop mathematical ideas, produce results and carry out analysis in situations requiring problem-solving, modelling or investigative techniques.

### Assessment

- Topic Tests
- Application Task
- Modelling & Problem Solving Tasks
- Summary Notes
- Incorporation of ICT in the achievement of Outcomes 1&2

## Units 3 & 4

**This course can only be chosen if students have passed Year 11 Mathematical Methods with an above average assessment grade.**

Assumed knowledge and skills for Mathematical Methods Units 3 and 4 are contained in Mathematical Methods Units 1 and 2, and will be drawn on. For Unit 3 a selection of content would typically include the areas of study 'Functions and graphs' and 'Algebra', and applications of derivatives and differentiation, and from the 'Calculus' area of study. For Unit 4, the content from the 'Calculus' area of study would include the treatment of anti-differentiation, integration, the relation between integration and the area of regions specified by lines or curves described by the rules of functions, and the study of random variables, discrete and continuous probability distributions and the distribution of sample proportions.

### Outcomes

1. Define and explain key concepts as specified in the content from the areas of study, and apply a range of related mathematical routines and procedures.
2. Apply mathematical processes in non-routine contexts to analyse and discuss these applications of mathematics.
3. Use numerical, graphical, symbolic and statistical functionalities of technology to develop mathematical ideas, produce results and carry out analysis in situations requiring problem-solving, modelling or investigative techniques.

### Assessment

- School Assessed Coursework will contribute 34% towards the study score. It consists of
  - (i) one Application Task (Unit 3)
  - (ii) two modelling or problem solving tasks (Unit 4)
- Two end of year Examinations
  - (i) Exam 1 Short answer style questions 22%
  - (ii) Exam 2 Multiple choice and application questions 44%
- Topic Tests throughout the units

# UNIVERSITY OF MELBOURNE EXTENSION PROGRAM AT ROSEHILL SECONDARY COLLEGE (YEAR 12)

The University of Melbourne Extension Program provides an opportunity for high achieving students to undertake first year University studies while completing their VCE. Successful completion of the Extension Program can add an increment of 3.0, 3.5, 4.0, 4.5 or 5.0 points to the students' ATAR aggregate. Successful students can also receive credit for subjects completed through the Extension Program upon enrolment in an undergraduate degree at The University of Melbourne.

Next year Rosehill Secondary College will offer Extension Program Mathematics classes as an Extension Program School Centre. Extension Program Mathematics is designed for students who enjoy mathematics and are mathematically talented and as such minimum entry requirements apply. Topics build on those in Specialist Mathematics and provide students with the opportunity to extend their knowledge, as well as to experience and appreciate some of the depth and complex beauty of higher level mathematics.

Extension Program Mathematics classes at Rosehill Secondary College will be held after regular school hours to allow as many eligible students as possible to attend. Classes will run during the school term and will be delivered by an experienced teacher from Rosehill who has received training in this subject from The University of Melbourne academics. Applications for Extension Program Mathematics are submitted directly to The University of Melbourne between August - November.

For more information on Extension Program entry requirements and the application process visit the Extension Program website:  
[www.futurestudents.unimelb.edu.au/umep](http://www.futurestudents.unimelb.edu.au/umep)

For more information on Extension Mathematics at Rosehill please contact Mr Abdullah Ford.

This study provides students with the opportunity to examine the media in both historical and contemporary contexts while developing skills in media design and production in a range of media forms. VCE Media provides students with the opportunity to analyse media concepts, forms and products in an informed and critical way. Students consider narratives, technologies and processes from various perspectives including an analysis of structure and features. They examine debates about the media's role in contributing to and influencing society. Students integrate these aspects of the study through the individual design and production of their media representations, narratives and products.

## Unit 1 - Media forms, representations and Australian stories

In this unit, students analyse how representations, narrative and media codes and conventions contribute to the construction of the media realities audiences engage with and read. Students gain an understanding of audiences as producers and consumers of media products. Through analysing the structure of narratives, students consider the impact of media creators and institutions on production. They develop research skills to investigate and analyse selected narratives focusing on the influence of media professionals on production genre and style. Students develop an understanding of the features of Australian fictional and non-fictional narratives in different media forms.

### Outcomes

1. On completion of this unit, the student should be able to explain how media representations in a range of media products and forms, and from different periods of time, locations and contexts, are constructed, distributed, engaged with, consumed and read by audiences. Use the media production process to design, produce and evaluate media representations for specified audiences in a range of media forms.
2. On completion of this unit, the student should be able to use the media production process to design, produce and evaluate media representations for specified audiences in a range of media forms.
3. On completion of this unit, the student should be able to analyse how the structural features of Australian fictional and non-fictional narratives in two or more media forms engage, and are consumed and read by, audiences.

## Unit 2 – Narrative across media forms

In this unit, students further develop an understanding of the concept of narrative in media products and forms in different contexts. Students analyse the influence of developments in media technologies on individuals and society, examining in a range of media forms the effects of media convergence and hybridisation on the design, production and distribution of narratives in the media and audience engagement, consumption and reception. Students undertake production activities to design and create narratives that demonstrate an awareness of the structures and media codes and conventions appropriate to corresponding media forms.

### Outcomes

1. On completion of this unit, the student should be able to analyse the intentions of media creators and producers and the influences of narratives on the audience in different media forms. Apply the media production process to create, develop and construct narratives.
2. On completion of this unit, the student should be able to apply the media production process to create, develop and construct narratives.
3. On completion of this unit, the student should be able to discuss the influence of new media technologies on society, audiences, the individual, media industries and institutions.

### Assessment

- In both Units 1 & 2 the first outcome will be assessed through written, oral and short answer responses discussing the requirements of the outcomes.
- The second outcome will be assessed through a set of visual solutions in a range of media and methods.
- The third outcome will be assessed through analysis tasks.

## Unit 3 - Media narratives and pre-production

In this unit, students explore stories that circulate in society through media narratives. They consider the use of media codes and conventions to structure meaning, and how this construction is influenced by the social, cultural and institutional contexts of production, distribution and reception. Students assess how audiences from different periods of time and contexts are engaged by, consume and read narratives using appropriate media language. Students use the pre-production stage of the media production process to design the production of a media product for a specified audience. They investigate a media form that aligns with their interests and intent, developing an understanding of the media codes and conventions appropriate to audience engagement, consumption and reception within the selected media form.

### **Outcomes**

1. On completion of this unit, the student should be able to analyse how narratives are constructed and distributed, and how they engage, are consumed and are read by the intended audience and present day audiences. Research aspects of a media form and experiment with media technologies and media production processes to inform and document the design of a media production.
2. On completion of this unit, the student should be able to research aspects of a media form and experiment with media technologies and media production processes to inform and document the design of a media production.
3. On completion of this unit, the student should be able to develop and document a media production design in a selected media form for a specified audience.

## Unit 4: Media production and issues in the media

In this unit, students focus on the production and post-production stages of the media production process, bringing the media production design created in Unit 3 to its realisation. They refine their media production in response to feedback and through personal reflection, documenting their production as they work towards completion. Students explore the relationship between the media and audiences, focusing on the opportunities and challenges afforded by current developments in the media industry. They consider the nature of communication between the media and audiences, explore the capacity of the media to be used by governments, institutions and audiences, and analyse the role of the Australian government in regulating the media.

### **Outcomes**

1. On completion of this unit, the student should be able to produce, refine and resolve a media product designed in Unit 3. Discuss issues of agency and control in the relationship between the media and its audience.
2. On completion of this unit the student should be able to discuss issues of agency and control in the relationship between the media and its audience.

### **Assessment**

- Units 3 and 4 School-assessed Coursework: 20 %
- Units 3 and 4 School-assessed Task: 40 %
- End-of-year examination: 40 %

# MUSIC PERFORMANCE

Students must have previously had at least two years of instrumental tuition and experience on their chosen instrument. An audition must be undertaken if the student has not undertaken Year 10 Classroom Music.

## Unit 1 – Music Performance

This unit focuses on building performance and musicianship skills. Students present performances of selected group and solo music works using one or more instruments. They study the work of other performers and explore strategies to optimise their own approach to performance. They identify technical, expressive and stylistic challenges relevant to works they are preparing for performance and practise technical work to address these challenges. Students study aural, theory and analysis concepts to develop their musicianship skills and apply this knowledge when preparing and presenting performances.

### Outcomes

#### 1. Performance

Prepare and perform a practised program of group and solo works.

#### 2. Preparing for Performance

Demonstrate instrumental techniques used in performance of selected works and describe influences on their approach to performance.

#### 3. Music Language

Identify, re-create, notate and transcribe elements of music, and describe ways in which expressive elements of music may be interpreted.

## Unit 2 – Music Performance

Students further build on their performance and musicianship skills. They present performances of selected group and solo music works using one or more instruments. Students study the work of their performers through listening and analysis and use specific strategies to optimise their own approach to performance. They also study strategies for developing technical and expressive performance skills. They identify technical, expressive and stylistic challenges relevant to works they are preparing for performance and practise related technical work. They study specific concepts to build their musicianship knowledge and skills. Students also devise an original composition or improvisation.

### Outcomes

#### 1. Performance

Prepare and perform a musically engaging program of group and solo works.

#### 2. Preparing for Performance

Demonstrate instrumental techniques used in performance of selected works and describe influences on their approach to performance.

#### 3. Music Language

Identify, re-create, notate and transcribe elements of music, and describe how selected elements of music have been interpreted in performance.

#### 4. Organisation of sound.

Devise a composition or an improvisation that uses music language evident in work/s being prepared for performance.

### Assessment

- Performances of works in both group and solo with accompaniment as appropriate
- A demonstration of selected technical work and exercises
- Performance journal containing explanations of how selected technical works and exercises support their chosen works
- Aural, written and practical tasks  
Composition and/or improvisation exercises

## Unit 3 – Music Performance

This unit prepares students to present convincing performances of group and solo works. In this unit students select a program of group and solo works representing a range of styles and diversity of character for performance. They develop instrumental techniques that enable them to interpret the works and expressively shape their performances. They also develop an understanding of performance conventions they can use to enhance their performances. Students develop skills in unprepared performance, aural perception and comprehension, transcription, music theory and analysis. The focus for analysis is works and performances by Australian musicians.

Music Investigation will only run in consultation with Ms. Bonett.

### **Outcomes**

1. Performance - To present an informed, accurate and expressive performance of a program of group or solo works.
2. Preparing for Performance - Demonstrate performance techniques, technical work and exercises, and describe their relevance to the performance of selected group and/or solo works.
3. Music Language - Identify, re-create, notate and transcribe short excerpts of music, and discuss the interpretation of expressive elements of music in pre-recorded works.

## **Unit 4 – Music Performance**

Students refine their ability to present convincing performances of group and solo work. Students select group and solo works that complement works selected in Unit 3. They further develop and refine instrumental and performance techniques that enable them to expressively shape their performance and communicate their understanding of the music style of each work. Students continue to develop skills in aural perception and comprehension, transcription, theory, analysis and unprepared performance. Students continue to study ways in which Australian performers interpret works that have been created since 1910 by Australian composers/songwriters.

### **Outcomes**

1. Performance - To prepare and present accurate and expressive performances of informed interpretations of a program/s of group and solo works.
2. Preparing for Performance - To demonstrate performance techniques, and technical work and exercises, and discuss their relevance to the performance of selected group and/or solo works, and present an unprepared performance.
3. Music Language - Identify, re-create, notate and transcribe short excerpts of music, and analyse the interpretation of expressive elements of music in pre-recorded works.

### **Assessment**

Live performance as a member of a group  
OR as a soloist – 50%  
Aural and written Examination – 20%  
School-assessed Coursework – 30%

## **Unit 3 – Music Investigation**

In this unit students select a work from a prescribed list as the basis for an investigation of a Focus Area. They explore the Focus Area through three complementary areas of study: Investigation, Composition/ Arrangement/ Improvisation and Performance. Together, these areas of study require students to apply extensive skills in performance, aural awareness, transcription, music theory and analysis.

### **Outcomes**

1. Investigation - To demonstrate understanding of performance practices, context/s and influences on music works.
2. Composition/Improvisation/Arrangement - To compose, improvise and/or arrange and discuss music characteristics and performance practices.
3. Performance - To present a performance of music works that communicates understanding of the Focus Area.

## **Unit 4 – Music Investigation**

In this unit students continue the exploration within the Focus Area they began in Unit 3. In Unit 4 the Investigation involves the preparation of program notes to accompany their end-of-year performance program. Area of Study 2 involves creating and performing a composition, improvisation or arrangement that draws on musical characteristics of the Focus Area. Students rehearse and perform works for inclusion in a performance program of works that relates to the Focus Area. They continue to use skills in aural awareness, transcription, music theory and music analysis to support their work.

### **Outcomes**

1. Investigation - To evaluate and present ones interpretive approach to a program of music works.
2. Composition/improvisation/arrangement - To compose/improvise/arrange and perform a music work and discuss the use of music characteristics, instrumental techniques, performance techniques and conventions in the work.
3. Performance - Demonstrate artistic intent and understanding of the Focus Area in a cohesive and engaging performance of music works.

### **Assessment**

Live performance as a member of a group  
OR as a soloist – 50%  
School-assessed Coursework for Unit 3 – 25%  
School-assessed Coursework for Unit 4 – 25%

# OUTDOOR AND ENVIRONMENTAL STUDIES

Outdoor and Environmental Studies is about the relationships humans have with outdoor environments, both past and present, and the way these relationships impact both people and outdoor environments. Students learn through a combination of theory classes and practical trips. Practical outdoor experiences provide students with the opportunity to observe and experience various ways of encountering, understanding and managing outdoor environments.

Students who select this subject, do so on the understanding that they are required to attend all the camps. They also understand that it is a costly subject and agree to pay for the camps at the beginning of each semester.

## Unit 1 – Exploring Outdoor Environments

Students are introduced to the characteristics of a variety of outdoor environments and investigate different types of outdoor environments from a number of perspectives. Students undertake case studies so they can observe and experience how changes to nature affect people. The focus is then broadened from personal responses to the ways in which others respond to, understand and value outdoor experiences and outdoor environments. Through investigations of specific outdoor environments, students analyse different ways of experiencing and knowing outdoor environments.

### **Outcome 1 – Motivations for Outdoor Experiences**

Students describe the characteristics of different outdoor environments and analyse a range of understandings of these environments, with reference to specific outdoor experiences.

### **Outcome 2 – Experiencing Outdoor Environments**

Students describe ways of knowing and experiencing outdoor environments and evaluate factors that influence outdoor experiences, with reference to specific outdoor experiences.

## Unit 2 – Discovering Outdoor Environments

This unit focuses on the characteristics of outdoor environments and different ways of understanding them, as well as the human impacts on outdoor environments. Students also look at nature's impact on humans, as well as the ecological, social and economic implications of human impact on outdoor environments. Students develop a clear understanding of the impact of technologies and changing human lifestyles on outdoor environments, as well as investigating and modelling individual and group responsibilities for activities in outdoor environments, including environmental action to promote positive impacts on outdoor environments.

### **Outcome 1 – Investigating outdoor environments**

Students describe the characteristics of different outdoor environments and analyse a range of understandings of these environments, with reference to specific outdoor experiences.

### **Outcome 2 – Impacts on outdoor environments**

Students evaluate human impacts on outdoor environments and analyse procedures for promoting positive impacts, with reference to specific outdoor experiences.

### **Assessment**

The outcomes for both Units 1 and 2 will be measured by student performance in a range of tasks selected from the following list:

- Journal/report of outdoor experiences
- Case study analysis
- Oral presentations
- Multimedia, annotated visual display
- Data analysis
- Tests
- Written responses

## Unit 3 - Relationships with Outdoor Environments

This unit explores how Australians have understood and interacted with outdoor environments over time. Students examine the unique nature of Australian outdoor environments and investigate a range of human relationships with outdoor environments, from various Indigenous cultural experiences, through to the influence of a number of major events and issues subsequent to European settlement. Case studies are used to analyse the role of environmental movements in changing human relationships with outdoor environments. Students also examine current relationships between humans and outdoor environments including the ways outdoor environments are portrayed in different media; the dynamic nature of relationships between humans and their environment; and the social, cultural, economic and political factors that influence these relationships.

Students who select this subject, do so on the understanding that they are required to attend all the camps. They also understand that it is a costly subject and agree to pay for the camps at the beginning of each semester.

### ***Outcome 1 - Historical relationships with outdoor environments***

Students explain and evaluate how relationships with Australian outdoor environments have changed over time, with reference to specific outdoor experiences.

### ***Outcome 2 - Contemporary relationships with outdoor environments***

Students analyse and evaluate the factors influencing contemporary societal relationships with outdoor environments, with reference to specific outdoor experiences.

### ***Assessment of levels of achievement***

The student's level of achievement in Unit 3 will be determined by School-assessed Coursework and an end-of-year examination.

## Unit 4 - The Future of Human-Nature Interactions

In this unit students explore the sustainable use and management of outdoor environments. They examine the contemporary state of environments in Australia, consider the importance of healthy outdoor environments, and examine the issues in relation to the capacity of outdoor environments to support the future needs of the Australian population. Students examine the importance of developing a balance between human needs and the conservation of outdoor environments and consider the skills needed to be environmentally responsible citizens. They investigate current agreements and environmental legislation, as well as management strategies and policies for achieving and maintaining healthy and sustainable environments in contemporary Australian society.

### ***Outcome 1 - Healthy outdoor environments***

Students evaluate the contemporary state of Australian outdoor environments, and analyse the importance of healthy outdoor environments and sustainability for individuals and society, with reference to specific outdoor experiences.

### ***Outcome 2 - Sustainable outdoor environments***

Students analyse conflicts of interest over the use of outdoor environments, and evaluate practices and strategies for sustaining outdoor environments, with reference to specific outdoor experiences.

### ***Assessment***

School-assessed Coursework for each outcome of unit 3 and 4 will contribute 25%, it will be measured by student performance in a range of tasks selected from the following list:

- a case study
- a multimedia presentation
- written analysis and evaluation
- an oral presentation
- a test
- data analysis
- written analysis and evaluation

The level of achievement for Units 3 and 4 is also assessed by an end-of-year examination, which will contribute 50%

# PHILOSOPHY

Philosophy is the oldest academic discipline. It is broadly concerned with ethics, epistemology (philosophy of knowledge) and metaphysics. It is the founding discipline of logic, and continues to develop and refine the tools of critical reasoning, influencing approaches in Mathematics, Science and the Humanities.

VCE Philosophy explores some of the most enduring and influential ideas that underpin some of society's greatest achievements in ethics, science and the arts. This, together with learning to think critically and with an open mind, fosters the reflection necessary for deep insights and ethical decision-making at all levels of society.

VCE Philosophy is a challenging and stimulating study, which nurtures curiosity, problem-solving skills, open-mindedness and intellectual rigour. Doing philosophy involves explicitly developing the habits of clarifying concepts, analysing problems, and constructing reasoned and coherent arguments. It encourages students to reflect critically on their own thinking and helps them to develop a sophisticated and coherent world view.

In Philosophy students will explore arguments for and against the existence of the divine and the possible nature of the divine. Students will seek to answer whether humans have free will or whether our nature is predetermined. Additionally, students will explore the nature of scientific knowledge and the possibility of objective truth. Students will focus on the study of ethics. They will ask what is right and wrong, explore the philosophy of human rights and study the philosophical underpinnings of our current political and legal system.

## Unit 1: Existence, Knowledge and Reasoning

In this unit students focus on questions that have challenged humans for millennia and underpin ongoing endeavours in areas as diverse as science, justice and the arts. This unit engages students with fundamental philosophical questions through active, guided investigation and critical discussion of two key areas of philosophy: epistemology and metaphysics. As students learn to think philosophically, appropriate examples of philosophical viewpoints and arguments, both contemporary and historical, are used to support, stimulate and enhance their thinking about central concepts and problems. Students investigate relevant debates in applied epistemology and metaphysics, and consider whether the philosophical bases of these debates continue to have relevance in contemporary society and our everyday lives.

### Outcomes

1. On completion of this unit the student should be able to analyse metaphysical problems, evaluate viewpoints and arguments arising from these, and identify philosophical problems in relevant contemporary debates.
2. On completion of this unit the student should be able to analyse epistemological problems, evaluate viewpoints and arguments arising from these, and analyse philosophical problems in relevant contemporary debates.
3. On completion of this unit the student should be able to apply methods of philosophical inquiry to the analysis of philosophical viewpoints and arguments, including those in metaphysics and epistemology.

## Unit 2: Questions of Value

This unit invites students to explore questions in relation to different categories of value judgment within the realms of morality, political and social philosophy and aesthetics. Students also explore ways in which viewpoints and arguments in value theory can inform and be informed by contemporary debates.

### Outcomes

1. On completion of this unit the student should be able to analyse problems in ethics and moral theory and related contemporary debates, evaluate viewpoints and arguments in response to these problems, and discuss the interplay between philosophical thinking and contemporary ethical and moral debates.
2. On completion of this unit the student should be able to analyse selected problems in value theory, evaluate viewpoints and arguments in response to these problems, and discuss philosophical issues in the context of relevant contemporary debates.
3. On completion of this unit the student should be able to apply methods of philosophical inquiry to the analysis of philosophical viewpoints and arguments, including those in value theory.

### Assessments for Unit 1

- Assignment on Logic and Reasoning
- Assignment on God and Time
- Assignment on Knowledge and Truth
- Exam

### Assessments for Unit 2

- Assignment on Rights and Freedoms
- Assignment on Ethics
- Exam

## Unit 3: Minds, bodies and persons

This unit considers basic questions regarding the mind and the self. Students critically compare the viewpoints and arguments put forward in set texts from the history of philosophy to their own views on these questions and to contemporary debates. Students learn that arguments make a claim supported by reasons and reasoning, whereas a viewpoint makes a claim without necessarily supporting it with reasons or reasoning. Philosophical debates encompass philosophical questions and associated viewpoints and arguments within other spheres of discourse such as religion, psychology, sociology and politics.

### **Outcomes**

1. On completion of this unit the student should be able to discuss concepts relating to the mind, psyche and body, and analyse and evaluate viewpoints and arguments concerning the relationship between the mind and body, and psyche and body, found within and across the set texts and in contemporary debates.
2. On completion of this unit the student should be able to analyse, compare and evaluate theories of personal identity in the set texts and discuss related contemporary debates.

## Unit 4: The good life

This unit considers the crucial question of what it is for a human to live well. What does an understanding of human nature tell us about what it is to live well? What is the role of happiness in a well lived life? Is morality central to a good life? How does our social context impact on our conception of a good life? In this unit, students explore texts by both ancient and modern philosophers that have had a significant impact on contemporary western ideas about the good life.

### **Outcomes**

1. On completion of this unit the student should be able to analyse, compare and evaluate the philosophical viewpoints and arguments in the set texts in relation to the good life.
2. On completion of this unit the student should be able to discuss contemporary debates related to the good life and the interplay between social and technological developments and conceptions of the good life.

### **Assessment**

The student's level of achievement for Unit 4 will be determined by School-assessed Coursework and an end-of-year examination. School-assessed Coursework for Unit 4 will contribute 25 per cent. The level of achievement for Units 3 and 4 is also assessed by an end-of-year examination, which will contribute 50 per cent.

## Unit 1 - The Human Body in Motion

In this unit students explore how the musculoskeletal and cardiorespiratory systems work together to produce movement. Through practical activities students explore the relationships between the body systems and physical activity, sport and exercise, and how the systems adapt and adjust to the demands of the activity.

### Outcomes

1. Explain how the musculoskeletal system functions, and evaluate the ethical and performance implications of the use of practices and substances that enhance human movement.
2. Explain how the cardiovascular and respiratory systems function and discuss the ethical and performance implications of the use of practices and substances to enhance the performance of these two systems.

## Unit 2 - Physical Activity, Sport and Society

This unit develops students' understanding of physical activity, sport and society from a participatory perspective. Students are introduced to types of physical activity and the role participation in physical activity and sedentary behaviour plays in their own health and wellbeing as well as in other people's lives in different population groups.

### Outcomes

1. Students collect and analyse data related to individual and population levels of participation in physical activity and sedentary behaviour to create, undertake and evaluate an activity plan that meets the physical activity and sedentary behaviour guidelines for an individual or a specific group.
2. Students apply a social-ecological framework to research, analyse and evaluate a contemporary issue associated with participation in physical activity and/or sport in a local, national or global setting.

### Assessment

All of the outcomes for both unit 1 and 2 will be assessed through tasks selected from:

- Written reports
- Structured questions
- Laboratory reports
- Tests
- Oral reports
- Case study analysis

## Unit 3 - Movement Skills and Energy for Physical Activity

This unit introduces students to the biomechanical and skill acquisition principles used to analyse human movement skills and energy production. Students use a variety of tools and techniques to analyse and refine movement in physical activity, sport and exercise.

### Outcomes

1. Students collect and analyse information from, and participate in, a variety of physical activities to develop and refine movement skills from a coaching perspective, through the application of biomechanical and skill acquisition principles.
2. Students use data collected in practical activities to analyse how the major body and energy systems work together to enable movements to occur, and explain the factors causing fatigue and suitable recovery strategies.

## Unit 4 - Training to Improve Performance

In this unit students analyse movement skills from a physiological, psychological and sociocultural perspective, and apply relevant training principles and methods to improve performance. In particular, principles relating to fitness and the ability of the coach to gain, apply and evaluate knowledge and understanding of training.

### Outcomes

1. Students analyse data from an activity analysis and fitness tests to determine and assess the fitness components and energy system requirements of the activity.
2. Students participate in a variety of training methods, and design and evaluate training programs to enhance specific fitness components.

### Assessment

School- assessed coursework for Unit 3 contributes 25% to the study score, as does the coursework for Unit 4. This will consist of a number of responses in the following formats: written reports, a case study analysis, multimedia presentation, tests, laboratory report, structured questions or a media analysis.

There will be an End-of-year Examination relating to the content of Units 3 and 4. This will account for 50% of the final assessment.

Physics is the study of the natural laws of the universe and the way in which they govern the structure, behaviour and interaction of matter and energy. It is a basic science, the foundation upon which engineering and technology is built. It is concerned with the farthest reaches of space and the incredible tiny world of atoms and molecules. VCE Physics provides students with opportunities to explore questions related to the natural and constructed world.

## Unit 1 - What ideas explain the physical world?

### Areas of study

1. How can thermal effects be explained?
2. How do electric circuits work?
3. What is matter and how is it formed?

### Outcomes

On completion of this unit the student should be able to:

1. Apply thermodynamic principles to analyse, interpret and explain changes in thermal energy in selected contexts, and describe the environmental impact of human activities with reference to thermal effects and climate science concepts.
2. Investigate and apply a basic DC circuit model to simple battery-operated devices and household electrical systems, apply mathematical models to analyse circuits, and describe the safe and effective use of electricity by individuals and the community.
3. Explain the origins of atoms, the nature of subatomic particles and how energy can be produced by atoms.

## Unit 2 - What do experiments reveal about the physical world?

### Areas of study

1. How can motion be described and explained?
2. Twelve options are available for selection. Each option is based on a different observation of the physical world. Options are:
  - What are stars?
  - Is there life beyond Earth's Solar System?
  - How do forces act on the human body?
  - How can AC electricity charge a DC device?
  - How do heavy things fly?
  - How do fusion and fission compare as viable nuclear energy power sources?
  - How is radiation used to maintain human health?
  - How do particle accelerators work?
  - How can human vision be enhanced?
  - How do instruments make music?
  - How can performance in ball sports be improved?
  - How does the human body use electricity?
3. Practical investigation

### Outcomes

On completion of this unit the student should be able to:

1. Investigate, analyse and mathematically model the motion of particles and bodies.
2. This outcome varies with the option selected for area of study 2.
3. Design and undertake an investigation of a physics question related to the scientific inquiry processes of data collection and analysis, and draw conclusions based on evidence from collected data.

### Assessment

Achievement of each outcome in Unit 1, and outcomes 1 and 2 in Unit 2 will be measured by performance in a selection of the following tasks:

- An annotated folio of practical activities
- Data analysis
- Design, building, testing and evaluation of a device
- An explanation of the operation of a device
- A report of a selected physics phenomenon
- A modelling activity
- A media response
- A summary report of selected practical investigations
- A test comprising multiple choice and/or short answer and/or extended response.
- End-of-semester examinations

Achievement of outcome 3 in Unit 2 will be measured by performance in a structured scientific poster not exceeding 1000 words.

Physics seeks to understand and explain the physical world. It examines models and ideas used to make sense of the world and which are sometimes challenged as new knowledge develops. By looking at the way matter and energy interact through observations, measurements and experiments, physicists gain a better understanding of the underlying laws of nature.

### Unit 3: How do fields explain motion and electricity?

#### Areas of study

1. How do things move without contact?
2. How are fields used to move electrical energy?
3. How fast can things go?

#### Outcomes

On completion of this unit the student should be able to:

1. Analyse gravitational, electric and magnetic fields, and use these to explain the operation of motors and particle accelerators and the orbits of satellites.
2. Analyse and evaluate an electricity generation and distribution system.
3. Investigate motion and related energy transformations experimentally, analyse motion using Newton's laws of motion in one and two dimensions, and explain the motion of objects moving at very large speeds using Einstein's theory of special relativity.

### Unit 4: How can two contradictory models explain both light and matter?

#### Areas of study

1. How can waves explain the behaviour of light?
2. How are light and matter similar?
3. Practical Investigation.

#### Outcomes

On completion of this unit the student should be able to:

1. Apply wave concepts to analyse, interpret and explain the behaviour of light.
2. Provide evidence for the nature of light and matter, and analyse the data from experiments that supports this evidence.
3. Design and undertake a practical investigation related to waves or fields or motion, and present methodologies, findings and conclusions in a scientific poster.

#### Assessment

School-assessed Coursework will contribute 40% of the final assessment. Achievement of each outcome in Unit 3 and outcomes 1 and 2 in Unit 4 will be measured by performance in a selection of the following tasks:

- Annotations of at least two practical activities from a practical logbook
- A report of a student investigation
- A report of a physics phenomenon
- Data analysis
- Media analysis/response
- Design, building, testing and evaluation of a device
- An explanation of the operation of a device
- A proposed solution to a scientific or technological problem
- A response to structured questions
- A reflective learning journal or blog related to selected activities or in response to an issue
- A test (short answer and extended response)

Achievement of outcome 3 in Unit 4 will be measured by performance in a structured scientific poster not exceeding 1000 words.

An end-of-year examination will contribute 60% of the final assessment.

# PRODUCT DESIGN AND TECHNOLOGY

This study is for students wishing to study design and product development, manufacturing methods and the use of processed and unprocessed materials in the design and planning process, using a variety of materials. Students will apply practical skills related to design, safe use of equipment and machinery.

**Students can choose from:**

**Product Design and Technology - Materials**

**OR**

**Product Design and Technology - Textiles**

## Unit 1 - Product Re-Design and Sustainability

This unit focuses on the tools, processes, techniques, knowledge and skills the designers use to develop a solution to a problem. Students investigate methods and processes used to examine the need and define the problem by generating an appropriate design brief. They consider methods and information the designer uses to generate and communicate ideas and determine the suitability of appropriate materials and processes. Students learn about the production techniques used to make the product and how it is evaluated against the needs and requirements outlined in the design brief. Using this process as a model, the student modifies the design of a similar product. Consideration is given to protection of intellectual property implications related to design.

### **Outcomes**

1. Describe the methods used by a designer to design a product, and apply similar processes to document the re-designing of an existing product.
2. Use and evaluate materials, tools, equipment and processes to make the product designed in Outcome 1, and compare the finished product with the original design.

## Unit 2 - Collaborative Design

In this unit, the student works both individually and as a member of a small design team to address a problem, need or opportunity that requires a product within a product range or based on a theme, or component of a group product. This provides the student with the opportunity to work with others while taking responsibility for particular aspects of the design and production processes.

### **Outcomes**

1. Individually and as a member of a team, identify a need and collaboratively develop design options and production planning in a response to a design brief for a product range based on a common theme or a group product with component parts.
2. Justify, manage and use appropriate production processes to make a product and evaluate, individually and as a member of a team, the processes and materials used, and the suitability of a product or components of a group project against the design brief.

### **Assessment**

- All of the Outcomes for both Units 1 and 2 will be assessed through tasks selected from:
- Design Folios
  - Tests (short and open book)
  - Production Plans
  - Short Written Reports (materials testing product evaluation)
  - Production Tasks
  - Oral Reports
  - Annotated Visual Displays
  - Practical Demonstrations

## Unit 3 - Design, Technological Innovation and Manufacture

In this unit, students investigate an end-user's needs, prepare a design brief, devise evaluation criteria, carry out research and propose a series of design options. They justify the choice of a preferred design option and develop a work plan, and commence production of the product, which will be completed and evaluated in Unit 4. This unit also examines how a range of factors influence the design and development of products within industrial / commercial settings.

### **Outcomes**

1. Explain the role of a designer by writing a design brief, evaluation criteria and identifying and explaining areas for research and methods that would be used to develop design ideas.
2. Explain the factors that influence the design, development and manufacture of products within industrial / commercial settings.
3. Present a folio that documents the procedure and decision making processes used while working as a designer to meet the needs of a client or end user and commence production of the designed product.

## Unit 4 - Product Development, Evaluation and Promotion

Students continue to develop and manufacture the product designed in Unit 3 - Outcome 3 and record the production processes and modifications to the work plan and product. They evaluate the effectiveness and efficiency of techniques they used and the quality of their product with reference to evaluation criteria. Students make judgements about possible improvements. They promote their work by highlighting the product's features to the client and/or end user.

### **Outcomes**

1. Analyse product types through a comparison of innovative features, function, aesthetic and visual appearance, and examine economic, social and environmental benefits and costs.
2. Competently and safely apply a range of production skills and processes to implement the production plan, make the product designed in Outcome 3 and manage time and resources efficiently.
3. Evaluate the outcomes of the design and promote the product's design features to the client or end user.

### **Assessment**

Design and Technology the student's level of achievement will be determined by School-assessed Coursework, a School-assessed Task and an End-of-year Examination. Percentage contributions to the study score in Design and Technology are as follows:

- Unit 3 School-assessed Coursework - 12%
- Unit 4 School-assessed Coursework - 8%
- School-assessed Task - 50%
- End-of-year Examination - 30%

## Unit 1: How are behavioural and mental processes shaped?

### Areas of study

1. How does the brain function?
2. What influences psychological development?
3. Student-directed research investigation.

### Outcomes

1. Describe how understanding of brain structure and function has changed over time, explain how different areas of the brain coordinate different functions, and explain how brain plasticity and brain damage can change psychological functioning.
2. Identify the varying influences of nature and nurture on a person's psychological development, and explain different factors that may lead to typical or atypical psychological development.
3. Investigate and communicate a substantiated response to a question related to brain function and/or development, including reference to at least two contemporary psychological studies and/or research techniques.

## Unit 2: How do external factors influence behaviour and mental processes?

### Areas of study

1. What influences a person's perception of the world?
2. How are people influenced to behave in particular ways?
3. Student-directed practical investigation.

### Outcomes

1. Compare the sensations and perceptions of vision and taste, and analyse factors that may lead to the occurrence of perceptual distortions.
2. Identify factors that influence individuals to behave in specific ways, and analyse ways in which others can influence individuals to behave differently.
3. Design and undertake a practical investigation related to external influences on behavior and draw conclusions based on evidence from collected data.

### Assessment

In Units 1 and 2, achievement of all outcomes will be measured by performance in at least three of the following:

- A report of a practical activity involving collection of data
- Research investigation involving collection of secondary data
- A brain structure modelling activity
- Analysis of data results

- Media analysis/response
- A test comprising of multiple choice and/or short answer and/or extended response
- A reflective learning journal/blog related to selected activities or in response to an issue
- Report of an investigation into the brain function and/or development that can be presented in various formats e.g. digital presentation, written report.

## Unit 3: How does experience affect behaviour and mental processes?

In this unit students examine functioning of the nervous system to explain how the human nervous system enables a person to interact with the world around them. They explore how stress may affect a person's psychological functioning and consider the causes and management of stress. Students investigate how mechanisms of memory and learning lead to the acquisition of knowledge, the development of new capacities and changed behaviours. They consider the limitations and fallibility of memory and how memory can be improved. Students examine the contribution that classical and contemporary research has made to the understanding of the structure and function of the nervous system, and to the understanding of biological, psychological and social factors that influence learning and memory.

### Outcomes

1. Explain how the structure and function of the human nervous system enables a person to interact with the external world and analyse the different ways in which stress can affect nervous system functioning.
2. Apply biological and psychological explanations for how new information can be learnt and stored in memory, and provide biological, psychological and social explanations of a person's inability to remember information.

## Unit 4: How is wellbeing developed and maintained?

In this unit students examine the nature of consciousness and how changes in levels of consciousness can affect mental processes and behaviour. They consider the role of sleep and the impact that sleep disturbances may have on a person's functioning. Students explore the concept of a mental health continuum and apply a biopsychosocial approach, as a scientific model, to analyse mental health and disorder. They use specific phobia to illustrate how the development and management of a mental disorder can be considered as an interaction between biological, psychological and social factors. Students examine the contribution that classical and contemporary research has made to the understanding of consciousness, including sleep, and the development of an individual's mental functioning and wellbeing.

### **Outcomes**

1. Explain consciousness as a continuum, compare theories about the purpose and nature of sleep, and elaborate on the effects of sleep disruption on a person's functioning.
2. Explain the concepts of mental health and mental illness including influences of risk and protective factors, apply a biopsychosocial approach to explain the development and management of specific phobia, and explain the psychological basis of strategies that contribute to mental wellbeing.
3. Design and undertake a practical investigation related to mental processes and psychological functioning, and present methodologies, findings and conclusions in a scientific poster.

Studio Arts aims to encourage and support students to recognise their individual potential as art makers. In their art practices, students apply an individual studio process to produce a folio of artworks. Students learn to use research and independent enquiry in the analysis of a range of artworks; and investigate how artists source ideas and develop styles. Students will also explore artists' use of materials, techniques and processes as well as methods of presentation in the making of artworks.

Students select from one or more of the following studio forms: painting, drawing, mixed media, sculpture, digital photography and printmaking. Studio Arts is designed to support a visual art or industry based pathway by allowing students to create a folio that is useful for tertiary folio entry. This subject supports pathways to domains such as architecture, fine arts, graphic design and curatorial studies.

The Visual Arts Department also offers Folio Preparation tuition for Tertiary Studies.

## Unit 1 - Studio Inspiration and Techniques

In this unit, students focus on developing an individual understanding of the stages of the studio practice, using sources of inspiration such as: personal experiences, ideas, issues and observations to develop individual artworks. Students also explore and research the ways in which artists from different times and cultures have interpreted ideas, sources of inspiration and use of materials and techniques to produce artworks.

### **Outcomes**

1. On completion of this unit, the student should be able to identify sources of inspiration and artistic influences and outline individual ideas, art forms and aesthetic qualities, and translate these into visual language.
2. On completion of this unit, the student should be able to produce at least one finished artwork and progressively record the development of their studio practice, conveying individual ideas through the exploration of materials and techniques in the selected art forms.
3. On completion of this unit, the student should be able to discuss the artistic practice of artists from different times and cultures, their sources of inspiration, materials and techniques for at least two artworks by each artist.

## Unit 2 - Studio Exploration and Concepts

In this unit, students focus on establishing and using a studio practice to produce artworks. They undertake an individual approach to investigate ideas, directions and solutions and experiment with materials and techniques. Students study historical and contemporary art movements and styles to understand developments in studio practice. Students explore and interpret how artists develop ideas, create aesthetic qualities and subject matter.

### **Outcomes**

1. On completion of this unit, the student should be able to develop an individual exploration proposal to form the basis of a studio process, and from this produce and document a variety of potential directions in a visual diary for at least one artwork.
2. On completion of this unit, the student should be able to compare a range of historical and contemporary art periods, styles or movements, and analyse the ways in which artists communicate ideas, develop styles and demonstrate aesthetic qualities in artworks.

### **Assessment**

Assessment tasks for both Unit 1 and 2 focus on the development of folios, research work and exams.

As part of the VCE Visual Arts program, all Studio Arts students will need to purchase a **VCE ARTS KIT**. The kit is a compulsory and essential tool needed for the successful completion of the program and can be purchased via Compass or the general office. This is in addition to the levies.

## Unit 3 - Studio Practices and Processes

In this unit, students focus on the implementation of an individual studio process leading to the production of a range of potential directions. Students develop and use an exploration proposal to define an area of creative exploration. They plan and apply a studio process to explore and develop their individual ideas. Analysis of these explorations and the development of the potential directions is an intrinsic part of the studio process to support the making of finished artworks in Unit 4.

### **Outcomes**

1. On completion of this unit, the student should be able to prepare an exploration proposal that formulates the content and parameters of an individual studio process including a plan of how the proposal will be undertaken.
2. On completion of this unit, the student should be able to progressively present an individual studio process recorded in written and visual form that produces a range of potential directions, and reflects the concepts and ideas documented in the exploration proposal and work plan.
3. On completion of this unit, the student should be able to examine the practice of at least two artists, with reference to two artworks by each artist, referencing the different historical and cultural context of each artwork.

## Unit 4 - Studio Practice and Art Industry Contexts

In this unit, students focus on the planning, production and evaluation required to develop, refine and present artworks that link cohesively according to the ideas resolved in Unit 3. To support the creation of artworks, students present visual and written evaluation that explains why they selected a range of potential directions from Unit 3 to produce at least two finished artworks in Unit 4. The development of these artworks should reflect refinement and skilful application of materials and techniques, and the resolution of ideas and aesthetic qualities discussed in the exploration proposal in Unit 3. Once the artworks have been made, students provide an evaluation about the cohesive relationship between the artworks.

### **Outcomes**

1. On completion of this unit, the student should be able to present at least two finished artworks based on selected and evaluated potential directions developed through the studio process, which demonstrate refinement and application of materials and techniques, and that realise and communicate the student's ideas expressed in the exploration proposal.
2. On completion of this unit, the student should be able to provide visual and written documentation that identifies and evaluates the extent to which the artworks reflect the selected potential directions, and effectively demonstrates a cohesive relationship between the works.
3. On completion of this unit, the student should be able to compare the methods used by artists and considerations of curators in the preparation, presentation, conservation and promotion of specific artworks in at least two different exhibitions.

### **Assessment**

Unit 3 and 4 School assessed Coursework: 10 %  
Unit 3 and 4 School assessed coursework Task: 60 %  
End of year examination: 30 %

As part of the VCE Visual Arts program, all Studio Arts students will need to purchase a **VCE ARTS KIT**. The kit is a compulsory and essential tool needed for the successful completion of the program and can be purchased via Compass or the general office. This is in addition to the levies

This study provides an opportunity to develop capabilities in and knowledge of design, operation, construction, assembly, maintenance, repair and evaluation of electrical/electronic or mechanical systems. It provides a sound, systems orientated basis for tertiary technology courses and for employment in technological enterprises. It is designed for students interested in electronics or automotive areas of study.

## Unit 1 - Mechanical Engineering Fundamentals

This unit focuses on mechanical engineering fundamentals as the basis of understanding the underlying principles and the building blocks that operate in the simplest to more complex mechanical devices. This unit contains the fundamental physics and theoretical understanding of mechanical systems and how they work, but the main focus is on the construction of a system which draws heavily upon design and innovation within the inter related applied learning activities.

Students study fundamental mechanical engineering principles. The unit allows for a hands-on approach, as students apply their knowledge and construct functional systems which can be purely mechanical or have some level of integration with electro-technology systems. Students explore how these systems use or convert the energy supplied to them, and related wider environmental and social issues.

### Outcomes

1. Recognise, identify, illustrate and use theoretical principles of mechanical systems.
2. Use appropriate processes in designing, planning, manufacturing, documenting, performance testing, fault diagnosis and evaluation of a functional system.
3. Analyse the operation, function, energy use and social and environmental implications of a technological system.

## Unit 2 - Electrotechnology Engineering Fundamentals

This unit focuses on building understanding, of the fundamental principles of electrical and electronic circuits, collectively and commonly referred to as electrotechnology.

Students study fundamental engineering principles aiming to produce basic operational systems and technical reports which employ a level of integration between mechanical and electronic components. The main focus remains on the construction of electrotechnology systems. Students study fundamental electrotechnology principles including applied electrical theory, representation of electronic components and devices, elementary applied physics in electrical circuits, and mathematical calculations that can be applied in order to define and explain electrical characteristics of circuits.

### Outcomes

1. Recognise, identify, illustrate and use theoretical principles of electro-technology systems.
2. Design, plan, produce and evaluate a functional integrated system with reference to relevant Australian Standards, and apply diagnostic fault finding, repair and maintenance techniques in production activities.
3. Explain how new and emerging technologies influence the selection and development of a process, material or component, and impact on the design and ultimate function of technological systems.

### Assessment

Assessment of all the outcomes of both Units 1 & 2 will be based on a selection from the following tasks:

- Production Work
- Planning/Production Records
- Tests
- Short Written Reports (materials testing, product evaluation)

## Unit 3 - Systems Engineering and Energy

In this unit, students study the engineering principles that are used to explain the physical properties of integrated systems and how they work. This is underpinned by the study of human endeavour in which observations and ideas about the physical world are organised and explained. Through the application of their knowledge, students produce an integrated operational system. Students also apply their knowledge and skills to research, produce and present technical reports.

### **Outcomes**

1. Recognise, identify, represent, describe and explain the principles of controlled integrated technological systems.
2. Design, plan, construct and document an integrated system and effectively use diagnostic procedures for the system.
3. Analyse and compare the environmental benefits and implications of using different energy sources and how such energy sources affect the design, performance and use of technological systems.

## Unit 4 - Integrated and Controlled Systems Engineering

This unit combines the contemporary focus of systems control and provides opportunities for students to build on their understanding and apply it to practical solutions through the construction of controlled integrated systems. In recent times, commercial integrated systems have increased function, control and internal monitoring subsystems within them.

### **Outcomes**

1. Recognise, identify, represent, describe and explain the principles and functioning of controlled integrated technological systems.
2. Select components for, construct, diagnose, adjust and repair the technological system and its control devices commenced in Unit 3, and provide an evaluation of the system, its performance and the management of the project.

### **Assessment**

Unit 3 School-assessed Coursework – 10%  
Unit 4 School-assessed Coursework – 10%  
School-assessed Task – 50%  
End-of-year Examination – 30%

## Unit 1 - Theatrical Styles of the Pre-Modern Era

This unit focuses on the application of acting and other stagecraft in relation to theatrical styles of the pre-modern era. Students work with the play-scripts from the pre-modern era of theatre, focusing on works prior to the 1880's in both their written form and in performance. They also study theatrical and performance analysis and apply these skills to the analysis of a play from the pre-modern era in performance.

### Outcomes

1. Identify and describe the distinguishing features of play-scripts from the pre-modern era.
2. Apply acting and other stagecraft to interpret play-scripts from the pre-modern era.
3. Analyse a performance of a play-script from the pre-modern era in performance.

## Unit 2 - Theatrical Styles of the Modern Era

This unit focuses on studying theatrical styles and stagecraft through working with play-scripts in both their written form and in performance with an emphasis on the application of stagecraft. Students work with play-scripts from the modern era focusing on works from the 1880's to the present. Students study theatrical analysis and production evaluation and apply these skills to the analysis of a play in performance from the modern era.

### Outcomes

1. Identify and describe the distinguishing features of play-scripts from the modern era of theatre.
2. Apply stagecraft to interpret play-scripts from the modern era.
3. Analyse and evaluate stagecraft in a performance of a play-script from the modern era.

### Assessment

All outcomes in Units 1 and 2 will be measured from a range of selected tasks from the following list:

- Essays
- Multimedia Productions
- Theatre History Reports
- Oral Presentations
- Tests
- Analytical Exercises
- Annotated Visual Reports
- Interpretation and Performance of Play-scripts

## Unit 3 - Production Development

This unit focuses on an interpretation of a play-script through the four designated stages of production: planning, production development, production season, and production evaluation. Students also attend a performance from the prescribed play-list and analyse and evaluate the interpretation of the play-script in the performance.

### Outcomes

Students should be able to:

1. Apply stagecraft to interpret a play-script for performance and demonstrate understanding of the production process.
2. Analyse use of stagecraft in the development of a play-script for production, incorporating the specifications appropriate for each stage of the production process.
3. Analyse and evaluate ways in which a written play-script selected from the prescribed play-list is interpreted in its production to an audience.

## Unit 4 - Performance Interpretation

In this unit students study a scene and associated monologue from the Theatre Studies Performance Examination (monologue list) and develop a theatrical brief that includes the creation of a character by an actor, stagecraft possibilities, and appropriate research. Students also attend a performance from the prescribed play-list and analyse and evaluate acting in the production.

### Outcomes

1. Able to perform an interpretation of a monologue from a play-script.
2. Develop a theatrical brief that presents an interpretation of a scene.
3. Analyse and evaluate acting in a production from the prescribed play-list.

### Assessment

All Outcomes in Units 3 and 4 will be assessed from a range of selected tasks from the following:

- School-assessed Coursework Unit 3 – 30%
- Final Performance (Solo) Examination – 25%
- School-assessed Coursework Unit 3 – 15%
- Final Written Examination – 30%

The Visual Communication Design study examines the way visual language can be used to convey ideas, information and messages in the fields of communication, environmental and industrial design. Designers create and communicate through visual means to influence everyday life for individuals, communities and societies. Visual Communication Design is designed to support a visual art or industry based pathways by requiring students to create a folio that is useful to tertiary folio entry courses. This subject supports pathways in domains including: communication, multimedia, web, industrial design, interior design, fine arts, architecture and fashion.

The Visual Arts Department also offers Folio Preparation tuition for Tertiary Studies.

## Unit 1 – Introduction to Visual Communication Design

This unit focuses on using visual language to communicate messages, ideas and concepts. This involves acquiring and applying design thinking skills as well as drawing skills to create messages, ideas and concepts, both visible and tangible. Students practise their ability to draw what they observe and they use visualisation drawing methods to explore their own ideas and concepts. Students develop an understanding of the importance of presentation drawings to clearly communicate their final visual communications.

### Outcomes

1. On completion of this unit, the student should be able to create drawings for different purposes using a range of drawing methods, media and materials.
2. On completion of this unit, the student should be able to select and apply design elements and design principles to create visual communications that satisfy stated purposes.
3. On completion of this unit, the student should be able to describe how visual communications in a design field have been influenced by past and contemporary practices, and by social and cultural factors.

## Unit 2 – Application of Visual Design within Design Fields.

This unit teaches students to use technical drawings to communicate information and ideas associated with the environmental or industrial fields. Students investigate how type and imagery are used in communication design. Students develop an understanding of how the design process is used as a means of organising their thinking about approaches to solving design problems and presenting ideas.

### Outcomes

1. On completion of this, unit the student should be able to create presentation drawings that incorporate relevant technical drawing conventions and effectively communicate information and ideas for a selected design field.
2. On completion of this unit, the student should be able to manipulate type and images to create visual communications suitable for print and screen-based presentations, taking into account copyright.
3. On completion of this unit, the student should be able to apply stages of the design process to create a visual communication appropriate to a given brief.

### Assessment

Folio of final presentation drawings, typography and technical drawings, written and /or oral descriptions of analysis including annotations.

As part of the VCE Visual Arts program, all Visual Communication Design students will need to purchase a **VCE Design KIT**. The kit is a compulsory and essential tool needed for the successful completion of the program and can be purchased via Compass or the general office. This is in addition to the levies.

## Unit 3 – Visual Communication Design Practices

This unit enables students to develop an understanding of Visual Communication production through the application of the design process to satisfy specific communication needs. Students consider existing Visual Communications and use these to inform their own work. They investigate the production of Visual Communication in a professional setting and examine the nature of professional practice in the design and production.

### **Outcomes**

1. On completion of this unit, the student should be able to create visual communications for specific contexts, purposes and audiences that are informed by their analysis of existing visual communications in the three design fields.
2. On completion of this unit, the student should be able to discuss the practices of a contemporary designer from each of the design fields and explain factors that influence these practices.
3. On completion of this unit, the student should be able to apply design thinking in preparing a brief with two communication needs for a client, undertaking research and generating a range of ideas relevant to the brief.

## Unit 4 – Visual Communication, Design Development, Evaluation & Presentation

This unit focuses on the development of design concepts and two final presentations of visual communications that meet the brief. Having completed their brief and generated ideas in Unit 3, students continue the design process by developing and designing concepts within the parameters of the brief. They evaluate their visual communications and devise a pitch to communicate their design thinking and decision making.

### **Outcomes**

1. On completion of this unit, the student should be able to develop distinctly different concepts for each communication need and devise a pitch to present concepts to an audience, evaluating the extent to which these concepts meet the requirements of the brief.
2. On completion of this unit, the student should be able to produce a final visual communication presentation for each communication need that satisfies the requirements of the brief.

### **Assessment**

- Unit 3 School-assessed Coursework: 25 %
- Units 3 and 4 School-assessed Task: 40 %
- End-of-year examination: 35 %

As part of the VCE Visual Arts program, all Visual Communication Design students will need to purchase a **VCE Design KIT**. The kit is a compulsory and essential tool needed for the successful completion of the program and can be purchased via Compass or the general office. This is in addition to the levies.

# UNIT COSTS

Subject	Unit 1 & 2 Charges	Unit 3 & 4 Charges
Accounting	\$10	\$10
Art	\$100	\$100
Art - Art Kit	\$100	\$100
Biology	\$25	\$25
Business Management	\$10	\$10
Chemistry	\$30	\$30
Dance	\$30	\$30
Drama	\$30	\$30
Economics	\$10	\$10
English	\$30	\$30
English As An Additional Language (EAL)	\$30	\$30
Environmental Science	\$30	\$30
Extended Investigation	-	\$50
Food Studies	\$120	\$120
Geography	\$20	\$20
Health and Human Development	\$20	\$20
History	\$10	\$10
Industry and Enterprise	\$10	\$10
Information Technology - Computing	\$10	
Information Technology - Software Development/Data Analytics	-	\$10
Languages - Italian	\$20	\$20
Languages - Japanese Second Language	\$20	\$20
Legal Studies	\$10	\$10
Literature	\$30	\$30
- Guest Speaker	-	\$20
Foundation Mathematics (1 & 2)	\$20	-
Further Mathematics (3 & 4)	-	\$20
Specialist Mathematics	\$20	\$20
General Mathematics (1 & 2)	\$20	-
Mathematical Methods	\$20	\$20
University Mathematics (Year 12)	-	\$20
Media	\$50	\$50
Music Performance	\$30	\$30
Music Investigation	\$30	\$30
Instrumental Music	\$225	\$225
Outdoor and Environmental Studies	\$20	\$20
Equipment Hire, Excursion and Camps	+ \$500	+ \$500
Philosophy	\$15	\$15
Physical Education	\$20	\$20
Physics	\$25	\$25
Product Design and Technology/Textiles/Materials	\$80	\$80
Psychology	\$10	\$10
Studio Arts	\$100	\$100
Studio Arts - Art Kit	\$100	\$100
Systems Engineering	\$50	\$50
Theatre Studies	\$30	\$30
Visual Communication Design	\$100	\$100
Visual Communication Design - Design Kit	\$100	\$100

**Australian Youth Allowance** – Financial support provided by the Federal Government to students 16 years and over, enrolled in full time study, to encourage and assist them to continue their studies.

**Campus** – Most tertiary institutions have more than one teaching site. Each site is called a ‘campus’ eg. Victoria University has campuses at Melton, Footscray, Werribee and St Albans.

**Credit Transfer** – This is a system where parts of your VCE work can be counted as part of your studies towards a VET Certificate and vice versa.

**Degree** – A Course of Study, usually of three or four years full time study, completed after VCE, at a College or University.

**ATAR** – Stands for Australian Tertiary Admission Rank. The overall ranking on a scale of zero to 99.95 that a student receives based on his/her study scores. The ATAR is calculated by universities and TAFE institutes to select students for courses. Formerly known as Equivalent National Tertiary Entrance Rank (ENTER).

**GAT** – General Achievement Test. All students undertaking one or more Level 3/4 subjects must sit for this test in June every year. Its purpose is to provide a measure of how well your teachers are assessing your work in school based assessment. It may also be used to help in the statistical moderation of coursework in Level 3/4 units. It is not meant to measure your ability, unless you need to apply for a Derived Examination Score.

**Commonwealth Supported Place (CSP)** – refers to the payment tertiary students make towards the cost of a tertiary course. Payment can be deferred until after graduation.

**Open Days** – Most Colleges, Universities and TAFE Institutes are open to the public for inspection on at least one day of the year. Many conduct guided tours, have public lectures and displays.

**Outcome** – Short for Learning Outcome, this is what you must know or be able to do when you finish a unit. To satisfactorily complete a unit you must satisfactorily achieve all of its outcomes.

**Prerequisite** – This is a unit or units you must pass in order to be eligible for admission to a course.

**School-assessed Coursework** – This is work that is prescribed by VCAA to be completed in Unit 3/4 Level Units. It is assessed by your teachers but is ‘moderated’ by a statistical method that compares the students’ school results with their individual assessment. School-assessed Tasks are completed in Technology and Studio Arts subjects.

**TAFE** – Stands for Technical and Further Education and there are many TAFE Institutes throughout Victoria. TAFE offers short courses, apprenticeship or traineeship training, and a range of courses ranging from Certificate 1 to Advanced Diploma Courses.

**VCAA** – Victorian Curriculum and Assessment Authority. The organisation responsible for the curriculum and administration of the VCE – <http://www.vcaa.vic.edu.au/>

**VICTER** – This is short for Victorian Tertiary Entrance Requirements. The Victorian Tertiary Admissions Centre prints a list of these each year. The list sets out the entrance requirements for higher education two years in advance. In July, 2017 they print the 2018 Victorian Tertiary Entrance Requirements.

**VTAC** – Stands for Victorian Tertiary Admissions Centre, which organises the process by which students apply and are selected for tertiary and TAFE Diploma Courses – <http://www.vtac.edu.au/>

**VTAC Guide** – This is a booklet for Year 12 VCE students and contains a description of each Victorian University and TAFE Institutes Diploma Course. It is published in August of each year.

**VET** – Vocational Education and Training – A set of certificate courses that can be completed along with the VCE. VET courses generally involve spending one day each week at a TAFE Institute.

## ***Some Non-School Courses***

***Advanced Certificates*** – These prepare students for supervisory positions in larger organisations, running small businesses, assisting professionals or operating in a high level technical capacity. They are usually completed in two years post Year 11 or one year post Year 12 via full-time or equivalent part-time study.

***Apprenticeships*** – These are a way to learn a trade or vocation and to be paid while learning. They are usually of three to four year duration, combining on the job and TAFE training.

***Certificate Courses*** – These are skills based and qualify people to undertake work that often requires complex skills. They are usually completed in six months to one year post Year 10 study, or equivalent part-time study.

***Traineeships*** – The Government subsidises the training of a number of young people to enable them to be part-time employed and trained on the job; and part-time to study in a TAFE Institute. Preference is given to people who have not successfully completed Year 12. The total leads to the award of a Certificate of Vocational Studies. They are of twelve months duration.