

Carwatha College P-12

V3

**VCE SUBJECT DESCRIPTORS
2017**



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ACCOUNTING

Accounting is the process of recording, reporting, analysing and interpreting financial data and accounting information which is then communicated to internal and external users of this information.

It plays an integral role in the successful operation and management of businesses. VCE Accounting focuses on small business. Unit 1 begins with a small service business, allowing students to develop knowledge and skills in accounting without the complexities of accounting for trading businesses or large organisations.

Unit 1: Establishing and operating a service business

This unit focuses on the establishment of a small business and the accounting and financial management of the business. Students are introduced to the processes of gathering and recording financial data and the reporting and analysing of accounting information by internal and external users. The cash basis of recording and reporting is used throughout this unit.

Using single entry recording of financial data and analysis of accounting information, students examine the role of accounting in the decision-making process for a sole proprietor of a service business.

Where appropriate, the accounting procedures developed in each area of study should incorporate the application of accounting principles and the qualitative characteristics of accounting information.

Unit 2: Accounting for a trading business

This unit extends the accounting process from a service business and focuses on accounting for a sole proprietor of a single activity trading business. Students use a single entry recording system for cash and credit transactions and the accrual method for determining profit. They analyse and evaluate the performance of the business using financial and non-financial information. Using these evaluations, students suggest strategies to the owner on how to improve the performance of the business.

Students develop their understanding of the importance of ICT in the accounting process by using a commercial accounting software package to establish a set of accounts, record financial transactions and generate accounting reports.

Where appropriate, the accounting procedures developed in each area of study should incorporate the application of accounting principles and the qualitative characteristics of accounting information

Unit 3: Recording and reporting for a trading business

This unit focuses on financial accounting for a single activity trading business as operated by a sole trader and emphasises 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. The perpetual method of stock recording with the First In, First Out (FIFO) method is also used. Where appropriate, the accounting procedures developed in each area of study should incorporate the application of accounting principles and the qualitative characteristics of accounting information

Unit 4: Control and analysis of business performance

This unit provides an extension of the recording and reporting processes from Unit 3 and the use of financial and non-financial information in assisting management in the decision-making process. The unit is based on the double entry accounting system and the accrual method of reporting for a single activity trading business using the perpetual inventory recording system. Students investigate the role and importance of budgeting for the business and undertake the practical completion of budgets for cash, profit and financial position. They interpret accounting information from accounting reports and graphical representations, and analyse the results to suggest strategies to the owner on how to improve the performance of the business.

Where appropriate, the accounting procedures developed in each area of study should incorporate the application of accounting principles and the qualitative characteristics of accounting information

Assessment

Units 1 and 2:

Students will be informed of the assessment procedures at the commencement of each unit.

Units 3 and 4

- Unit 3 School-assessed Coursework: 25 per cent
- Unit 4 School-assessed Coursework: 25 per cent
- End-of-year examination: 50 per cent

BIOLOGY

Biology is the study of living organisms, life processes and the different levels of organisation from the cell to the biosphere. It includes the study of interactions between organisms and between organisms and their environments. It considers the unity and continuity of life as well as diversity and change.

Unit 1: How do living things stay alive?

In this unit, students are introduced to some of the challenges to an organism in sustaining life. Students examine the cell as the structural and functional unit of life, from the single-celled to the multicellular organism, and the requirements for sustaining cellular processes in terms of inputs and outputs. They analyse types of adaptations that enhance the organism's survival in a particular environment and consider the role homeostatic mechanisms play in maintaining the internal environment. Students investigate how a diverse group of organisms form a living interconnected community that is adapted to, and utilises, the abiotic resources of its habitat. The role of a keystone species in maintaining the structure of an ecosystem is explored. Students consider how the planet's biodiversity is classified and the factors that affect the growth of a population.

Unit 2: How is continuity of life maintained?

In this unit, students focus on cell reproduction and the transmission of biological information from generation to generation. Students learn that all cells are derived from pre-existing cells through the cell cycle. They examine the process of DNA replication and compare cell division in both prokaryotic and eukaryotic organisms. Students explore the mechanisms of asexual and sexual reproductive strategies, and consider the advantages and disadvantages of these two types of reproduction. The role of stem cells in the differentiation, growth, repair and replacement of cells in humans is examined, and their potential use in medical therapies is considered.

Students use chromosome and genetic theory to explain the inheritance of characteristics, analyse patterns of inheritance, interpret pedigree charts and predict outcomes of genetic crosses. They explore the relationship between genes, the environment and the regulation of genes in giving rise to phenotypes.

Unit 3: How do cells maintain life?

In this unit, students focus on the cell as a complex chemical system. They examine the chemical nature of the plasma membrane to compare how hydrophilic and hydrophobic substances move across it. They model the formation of DNA and proteins from their respective subunits. The expression of the information encoded in a sequence of DNA to form a protein is explored and the nature of the genetic code outlined. Students use the *lac* operon to explain prokaryotic gene regulation in terms of the 'switching on' and 'switching off' of genes. Students learn why the chemistry of the cell usually takes place at relatively low, and within a narrow range of, temperatures. They examine how reactions, including photosynthesis and cellular respiration, are made up of many steps that are controlled by enzymes and assisted by coenzymes. Students explain the mode of action of enzymes and the role of coenzymes in the reactions of the cell and investigate the factors that affect the rate of cellular reactions. Students focus on how cells receive specific signals that elicit a particular response. Students apply the stimulus-response model to the cell in terms of the types of signals, the position of receptors, and the transduction of the information across the cell to an effector that then initiates a response. Students examine unique molecules called antigens and how they elicit an immune response, the nature of immunity and the role of vaccinations in providing immunity. They explain how malfunctions in signalling pathways cause various disorders in the human population and how new technologies assist in managing such disorders.

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

In this area of study, students focus on changes to genetic material over time and the evidence for biological evolution. They investigate how changes to genetic material lead to new species through the process of natural selection as a mechanism for evolution. Students examine how evolutionary biology and the relatedness of species is based upon the accumulation of evidence. They learn how interpretations of evidence can change in the light of new evidence as a result of technological advances, particularly in molecular biology. The human fossil record is explored to identify the major biological and cognitive trends that have led to a complex interrelationship between biology and culture. Students examine the impact of human culture and technological applications on biological processes. They apply their knowledge of the structure and function of the DNA molecule to examine how molecular tools and techniques can be used to manipulate the molecule for a particular purpose. Students describe gene technologies used to address human issues and consider their social and ethical implications. Scientific knowledge can both challenge and be challenged by society. Students examine biological challenges that illustrate how the reception of scientific knowledge is influenced by social, economic and cultural factors.

Biology Assessment

Units 1 and 2: Yr 11

Students will be informed of the assessment procedures at the commencement of each unit. Assessment consist of SACS, 1 exam, tests, practical reports and projects, per semester.

Units 3 and 4: Yr 12

School-assessed coursework and an end-of-year examination.

- Unit 3 school-assessed coursework: 16 per cent – Sem 1
- Unit 4 school-assessed coursework: 24 per cent – Sem 2
- End-of-year examination: (Oct/Nov): 60 per cent

BUSINESS MANAGEMENT

Business Management examines the ways in which people at various levels within a business organisation manage resources to achieve the objectives of the organisation. Students develop an understanding of the challenges, complexity and rewards that come from business management and gain insight into the various ways resources can be managed in small, medium and large-scale organisations.

The study recognises that there is a range of management theories rather than a single theory of management. Each unit examines some of these theories and, through exposure to real business scenarios and/or direct contact with business, tests them against management in practice.

Students will develop knowledge and skills that enhance their confidence and ability to participate effectively, as socially responsible and ethical members of the business community, and as informed citizens, consumers and investors.

Unit 1: Small business management

Small, rather than large, businesses make up the large majority of all businesses in the Australian economy. It is the small business sector that provides a wide variety of goods and services for both consumers and industries, such as manufacturing, construction and retail. This, combined with employment opportunities, makes the small business sector a vital component in the success, growth and stability of Australia. Small businesses are tangible to students as they are visible and accessible in daily life. This unit provides an opportunity for students to explore the operations of a small business and its likelihood of success.

Unit 2: Communication and management

This unit focuses on the importance of effective communication in achieving business objectives. Students investigate communication both internal and external to the business. They develop knowledge of aspects of business communication and are introduced to skills related to its effective use in different contexts. The vital functions of marketing and public relations are considered, with students developing an understanding of the important role these functions play in the ultimate success of a business.

Unit 3: Corporate management

In this unit, students investigate how large-scale organisations operate. Students examine the environment (both internal and external) in which large-scale organisations conduct their business, and then focus on aspects of individual businesses' internal environment and how the operations of the business are managed. Students develop an understanding of the complexity and challenge of managing large-scale organisations and have the opportunity to compare theoretical perspectives with practical applications.

Unit 4: Managing people and change

This unit continues the examination of corporate management. It commences with a focus on the human resource management function. Students learn about the key aspects of this function and strategies used to most effectively manage human resources. The unit concludes with analysis of the management of change. Students learn about key change management processes and strategies and are provided with the opportunity to apply these to a contemporary issue of significance.

Assessment**Units 1 and 2:**

Student will be informed of the assessment procedures at the commencement of each unit.

Units 3 and 4

School-assessed coursework (includes essays, tests and case studies) and end-of-year examination

- Unit 3 school-assessed coursework: 25 per cent
- Unit 4 school-assessed coursework: 25 per cent
- Unit 3 and 4 examination: 50 percent

CHEMISTRY

Chemical processes are important in improving human health, preventing environmental problems and rehabilitating degraded environments. In this study of Chemistry a thematic approach has been adopted and throughout the study contexts have been provided to apply chemical knowledge to technology and society. Students will investigate, explore and solve qualitative and quantitative problems and discuss chemical concepts and issues.

Unit 1: How can the diversity of materials be explained?

This unit examines the development and use of materials for specific purposes as an important human endeavour. Students will investigate the chemical properties and practical applications of a range of materials including metals, crystals, polymers, nanomaterials and giant lattices. They will explore and explain the relationships between properties, structure and bonding forces within and between particles that vary in size from the visible through to nanoparticles, molecules and atoms. Students will be introduced to quantitative concepts in chemistry.

Unit 2: What makes water such a unique chemical?

This unit examines the structure and bonding within and between water molecules in order to investigate solubility, concentration, pH and reactions in water including precipitation, acid-base and redox. Students will be introduced to stoichiometry and to analytical techniques and instrumental procedures analysis, and apply these to determine concentrations of different species in water samples, including chemical contaminants. Students will explore the solvent properties of water in a variety of contexts and analyze selected issues associated with substances dissolved in water.

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

This unit explores energy options and the chemical production of materials with reference to efficiencies, renewability and the minimisation of their impact on the environment. Students compare and evaluate different chemical energy sources, including fossil fuels, biofuels, galvanic cells and fuel cells. They investigate the combustion of fuels, including energy transformations involved. Students consider the purpose, design and operating principles of galvanic cells, fuel cells and electrolytic cells. They then analyse manufacturing processes with reference to factors that influence their reaction rates and extent.

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

This unit investigates the structural features, bonding, typical reactions and uses of the major families of organic compounds including those found in food. Students study the way in which organic structures are represented and named. They consider the nature of the reactions involved to predict the products of reaction pathways and design pathways to produce particular compounds from given starting materials. Students investigate key food molecules through an exploration of their chemical structures and use calorimetry as an investigative tool to determine the energy released in the combustion of foods.

Assessment

Units 1 and 2: Students will be informed of the assessment procedures at the commencement of each unit.

Units 3 and 4: School-assessed coursework and an end-of-year examination.

- Unit 3 school-assessed coursework: 16 per cent
- Unit 4 school-assessed coursework: 24 per cent
- Unit 4 examination: 60 per cent

COMPUTING

VCE Computing provides students with opportunities to acquire and apply knowledge and skills to use digital systems efficiently and effectively when creating digital solutions, both individually and as part of a network. Students investigate legal requirements and ethical responsibilities that individuals and organisations have with respect to the security and integrity of data. Through a structured approach to problem solving, incorporating computational, design and systems thinking, students are equipped to orient themselves towards the future, with an awareness of the technical and societal implications of digital systems.

Unit 1: Computing

This unit focuses on how data, information and networked digital systems can be used to meet a range of users' current and future needs. They investigate an issue, practice or event and create a digital solution that graphically presents the findings of the investigation. Students examine the technical underpinnings of wireless and mobile networks, and security controls to protect stored and transmitted data, and design a network solution. They create a website to present different viewpoints on a contemporary issue.

Unit 2: Computing

Students develop their computational thinking skills when using a programming or scripting language to create solutions. They learn how a range of software tools can be used to extract data from large repositories and manipulate it to create visualisations that are clear, usable and attractive, and reduce the complexity of data. Students create a solution using database management software and explain how they are personally affected by their interactions with a database system.

Unit 3: Informatics

This unit focuses on designing a solution, developing it using a relational database management system, and diagrammatically representing how users interact with an online solution when supplying data for a transaction. Student learn how to use a range of appropriate techniques and processes to acquire, prepare, manipulate and interpret complex data to confirm or refute a hypothesis, and formulate a project plan to manage progress.

Unit 4: Informatics

Students learn how to design, develop and evaluate a multimodal online solution that confirms or refutes a hypothesis, and assess the effectiveness of the project plan in managing progress. They should be able to compare and contrast the effectiveness of information management strategies used by two organisations to manage the storage and disposal of data and information, and recommend improvements to their current practices.

Unit 3: Software development

This unit assists students to develop a detailed understanding of the analysis, design and development stages of the problem-solving methodology and use a programming language to create working software modules. They learn how to analyse and document a need or opportunity, generate alternative design ideas, represent the preferred solution design and formulate a project plan for creating the solution.

Unit 4: Software development

This unit focuses on improving students' computational thinking skills by transforming their detailed design prepared in Unit 3 into a software solution. They evaluate the efficiency and effectiveness of the solution in meeting needs or opportunities. They also assess the effectiveness of the project plan

in monitoring project progress. Students apply systems thinking skills when explaining the relationship between two information systems that share data and how that dependency affects the performance of the systems.

Assessment

Units 1 and 2:

Students will be informed of the procedures at the commencement of each unit.

Units 3 and 4

School-assessed coursework and end of year examination.

- Unit 3 school-assessed Coursework: 10 per cent
- Unit 4 school-assessed Coursework: 10 per cent
- School-Assessed Task: 30 per cent
- End-of-year examination: 50 per cent

DRAMA

The study of Drama focuses on the creation and performance of characters and stories in naturalistic and non-naturalistic ways. Students draw on a range of stimulus material and play-making techniques to develop and present devised work. Students also explore a range of performance styles and conventions, dramatic elements and stagecraft. They use performance and expressive skills to explore and develop role and character. They analyse the development of their own work and performances by other drama practitioners.

As a part of this, it is compulsory for students to attend live professional performances from the VCAA Drama playlist or as determined by the teacher. This will incur a cost for the ticket and possibly travel to and from the performance. Where possible, we attempt to limit the cost of these excursions through sourcing local venues for performances and low cost performance and travel options.

Unit 1: Dramatic storytelling – ensemble performance

This unit focuses on creating, presenting and analysing a devised 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 of a performance by professional drama practitioners. In this unit students use performance styles from a range of contexts associated with naturalism and non-naturalism.

Students examine storytelling through the creation of solo and/or ensemble devised performance/s. They manipulate expressive skills in the creation and presentation of characters, and develop awareness and understanding of how characters are portrayed in naturalistic and non-naturalistic performance styles and document the processes they use. Students also gain an awareness of how performance is shaped and given meaning. They investigate a range of stimulus material and learn about stagecraft, conventions and performance styles from a range of contexts.

Unit 2: Non naturalistic Australian Drama– solo performance

This unit focuses on the use and documentation of the processes involved in constructing a devised solo or ensemble performance that uses non-naturalistic performance styles. 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.

Students use a range of stimulus material in creating the performance and examine non-naturalistic performance styles from a range of contexts relevant to Australia and Australians. Conventions appropriate to the selected performance styles are also explored. Students' knowledge of how dramatic elements can be enhanced or manipulated through performance is further developed in this unit.

Students analyse their own performance work as well as undertake the analysis of a performance of an Australian work by other actors. Students use performance styles from a range of historical, cultural and social contexts including styles associated with non-naturalism.

Unit 3: Devised non-naturalistic ensemble performance

This unit focuses on non-naturalistic devised ensemble drama. Students explore non-naturalistic performance styles and associated conventions from a diverse range of contemporary and cultural performance traditions and work collaboratively to devise, develop and present an ensemble performance. Students use and manipulate dramatic elements, conventions, performance and expressive skills, performance styles and stagecraft in non-naturalistic ways to shape and enhance the performance.

Students also document and evaluate stages involved in the creation, development and presentation of the ensemble performance.

Students also analyse a professional performance that incorporates non-naturalistic performance styles and production elements selected from the prescribed VCE Drama Unit 3 Playlist published annually on the Victorian Curriculum and Assessment Authority website.

Unit 4: Non-Naturalistic Solo Performance

This unit focuses on the development and presentation of non-naturalistic devised solo performances. Students explore non-naturalistic performance styles and associated conventions from a diverse range of contemporary and cultural performance traditions. They develop skill in extracting dramatic potential from stimulus material and use dramatic elements, conventions, performance styles and performance and expressive skills to develop and present a short solo performance. These skills are further developed as students create a devised solo performance in response to a prescribed structure.

Students also document and evaluate the stages involved in the creation, development and presentation of a solo performance.

Students are encouraged to attend performances that incorporate non-naturalistic performance styles to support their work in this unit.

Assessment

Units 1 and 2

Students will be informed of the assessment procedures at the commencement of each unit.

Units 3 and 4

School-assessed coursework and two end-of year examinations.

- Unit 3 school-assessed coursework: 35 per cent
- Unit 4 school-assessed coursework: 5 per cent
- Units 3 and 4 Written examination: 25 per cent
- Unit 4 Performance examination: 35 per cent

ENGLISH/ENGLISH AS AN ADDITIONAL LANGUAGE

English

VCE English focuses on how English language is used to create meaning in written, spoken and multimodal texts of varying complexity. English contributes to the development of literate individuals capable of critical and creative thinking, aesthetic appreciation and creativity. This study also develops students' ability to create and analyse texts, moving from interpretation to reflection and critical analysis. Students will study the key discipline concepts of language, literature and literacy, and the language modes of listening, speaking, reading, viewing and writing.

English as an Additional Language (EAL)

The EAL course is the equivalent of the VCE English course but students have the advantage of being taught in small groups by an EAL teacher. It is designed to give students whose first language is not English extra support in their VCE studies of English.

In order to qualify for EAL, students have to satisfy both of the following conditions:

- a) The student has been resident in Australia for a period not more than seven calendar years immediately prior to 1st of January of the year in which English Units 3 & 4 are undertaken and
- b) English has been the student's major language of instruction for a total period of no more than seven years prior to the commencement of the year in which English Units 3&4 are undertaken.

English/EAL Units 1 – 4

Unit 1

In this unit, students will read and respond to texts analytically and creatively. They will analyse arguments and the use of persuasive language in texts and create their own texts intended to position audience. Students will develop their skills in creating written, spoken and multimodal texts.

Unit 2

In this unit, students will compare the presentation of ideas, issues and themes in texts. They will analyse arguments presented and the use of persuasive language in texts and create their own texts intended to position audiences. Students will continue to develop their skills in creating written, spoken and multimodal texts.

Unit 3

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

EAL students will also develop and refine their listening skills. They will listen and respond to information, ideas and opinions presented in texts.

Unit 4

In this unit, students will compare the presentation of ideas, issues and themes in texts. They will create an oral presentation intended to position audiences about an issue currently debated in the media.

Assessment

Units 1 and 2: Students will be informed of the assessment procedures at the commencement of each unit.

Units 3 and 4

In English/EAL the students' level of achievement will be determined by school-assessed coursework and end-of-year examination. Percentage contributions to the study score in English/EAL are as follows:

- Unit 3 school-assessed coursework: 25 per cent
- Unit 4 school-assessed coursework: 25 per cent
- End-of-year examination: 50 per cent

VCE Foundation English Units 1 & 2

The Foundation English course is designed for students who need additional time and assistance to strengthen and refine their literacy skills to support their study in VCE English Units 1 – 4 and in other VCE or VCAL Literacy studies. The course will draw on and strengthen the knowledge and skills students have acquired about texts and language in previous English studies. Student selection for this course will be subject to consultation during the counselling process.

Assessment

Students will be informed of the assessment procedures at the commencement of each unit.

FOOD STUDIES

Unit 1: Food Origins

This unit focuses on food from historical and cultural perspectives. Students investigate the origins and roles of food through time and across the world. Students explore how humanity has historically sourced its food, examining the general progression from hunter-gatherer to rural-based agriculture, to today's urban living global trade in food. Students consider the origins and significance of food through inquiry into particular food-producing regions of the world.

Students also investigate Australian indigenous food prior to European settlement and how food patterns have changed over time. Students investigate cuisines that are part of Australia's culinary identity today and reflect on the concept of an Australian cuisine. They consider the influence of technology and globalisation on food patterns.

Unit 2: Food Makers

In this unit students investigate food systems in contemporary Australia, exploring both commercial food production industries and food production in small-scale domestic settings. 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 produce foods and consider a range of evaluation measures to compare their foods to commercial products. They consider the effective provision and preparation of food in the home, and analyse the benefits and challenges of developing and using practical food skills in daily life. Students design new food products and adapt recipes to suit particular needs and circumstances.

Unit 3: Food in Daily Life

This unit investigates the many roles and everyday influences of food. Students explore the science of food – they consider the physiology of eating, the microbiology of digestion and appreciating food. They also investigate the functional properties of food and the changes that occur during food preparation and cooking. Students 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 also investigate how communities, families and individuals change their eating patterns over time and how our food values and behaviours develop within social environments. Students inquire into the role of food in shaping and expressing identity and connectedness and the ways in which food information can be filtered and manipulated. 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.

Unit 4: Food Issues, Challenges and Futures

In this unit, students examine debates about global and Australian food systems. Students focus on issues related to 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 also investigate 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, and apply this methodology to navigate contemporary food fads, trends and diets. Students' food production repertoire reflects the Australian Dietary Guidelines and the Australian Guide to Healthy Eating.

Materials Charge

Food Studies use extensive or expensive class materials, which will require additional charges. These charges will vary in cost from \$120 to \$140.

Assessment

Assessment

Units 1 and 2:

Students will be informed of the assessment procedures at the commencement of each unit.

Units 3 and 4

- Unit 3 school-assessed coursework: 30 per cent
- Unit 4 school-assessed coursework: 30 per cent
- End-of-year examination: 40 per cent.

GEOGRAPHY

The study of Geography is a structured way of exploring, analysing and understanding the characteristics of places that make up our world. Geographers are interested in key questions concerning places and geographic phenomena: What is there? Where is it? Why is it there? What are the effects of it being there? How is it changing over time and how could, and should, it change in the future? How is it different from other places and phenomena? How are places and phenomena connected?

Students explore these questions through fieldwork and investigation of a wide range of secondary sources. These methods underpin the development of a unique framework for understanding the world, enabling students to appreciate its complexity, the diversity and interactions of its environments, economies and cultures, and the processes that helped form and transform them.

Ten key geographic concepts underpin the study – place, scale, distance, distribution, movement, region, process, change, spatial association and sustainability.

Unit 1: Hazards and disasters

In this area of study, students examine hazards and hazard events before engaging in a study of at least two specific hazards at a range of scales. They study one from at least two different types of hazards; for example, coastal hazards and an introduced animal invasion, or floods and oil spills. Students explore the nature and effectiveness of specific measures such as prediction and warning programs, community preparedness and land use planning, as well as actions taken after hazards become harmful and destructive disasters.

Hazards represent the potential to cause harm to people and or the environment whereas disasters are judgements about the impacts of hazard events. Hazards include a wide range of situations including those within local areas, such as fast-moving traffic or the likelihood of coastal erosion, to regional and global hazards such as drought and infectious disease.

Students examine the processes involved with hazards and hazard events, including their causes and impacts, human responses to hazard events and interconnections between human activities and natural phenomena. This unit investigates how people have responded to specific types of hazards, including attempts to reduce vulnerability to, and the impact of, hazard events.

Students undertake fieldwork in this unit.

Unit 2: Tourism

In this area of study 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. They select contrasting examples of tourism from within Australia and elsewhere in the world to support their investigations.

Over one billion tourists a year cross international boundaries with greater numbers involved as domestic tourists within their own countries. The scale of tourist movements since the 1950's and its predicted growth has had and continues to have a significant impact on local, regional and national environments, economies and cultures.

The study of tourism at local, regional and global scales emphasises the interconnection within and between places. For example, the interconnections of climate, landforms and culture help determine the characteristics of a place that can prove attractive to tourists. There is an interconnection between places tourists originate from and their destinations through the development of

communication and transport infrastructure, employment, together with cultural preservation and acculturation. The growth of tourism at all scales requires careful management to ensure environmentally sustainable and economically viable tourism.

Students study in detail at least one tourism location using appropriate fieldwork techniques, and one other location elsewhere in the world.

Assessment

Units 1 and 2:

- Students will be informed of the assessment procedures at the commencement of each unit.

Unit 3: Changing the land

This unit focuses on two investigations 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. Land cover is the natural state of the biophysical environment developed over time as a result of the interconnection between climate, soils, landforms and flora and fauna and, increasingly, interconnections with human activity.

Natural land cover has been altered by many processes such as geomorphological events, plant succession and climate change. People have modified land cover to produce a range of land uses to satisfy needs such as housing, resource provision, communication, recreation and so on.

Students investigate three major processes that are changing land cover in many regions of the world: deforestation, desertification, and melting glaciers and ice sheets.

Students investigate the distribution and causes of these three processes. They select one location for each of the three processes to develop a greater understanding of the changes to land cover produced by these processes, the impacts of these changes and responses to these changes at different scales.

At a local scale students investigate land use change using appropriate fieldwork techniques and secondary sources. They investigate the scale of change, the reasons for change and the impacts of change.

Students undertake fieldwork in this unit.

Assessment

Unit 3:

- School-assessed coursework will contribute 25 per cent to the study score.
- End-of-year examination will contribute 50 per cent.

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.

The growth of the world's population from 2.5 billion in 1950 to over 7 billion since 2010 has been on a scale without parallel in human history. Much of the current growth is occurring within developing countries while the populations in many developed countries are either growing slowly or are declining.

Populations change by growth and decline in fertility and mortality, and by people moving to different places. Population movements such as voluntary and forced movements over long or short terms add further complexity to population structures and to economic, social, political and environmental conditions. Many factors influence population change, including the impact of government policies, economic conditions, wars and revolution, political boundary changes and hazard events.

Assessment

Unit 4:

- School-assessed coursework will contribute 25 per cent to the study score.
- End-of-year examination will contribute 50 per cent.

HEALTH AND HUMAN DEVELOPMENT

The study of Health and Human Development provides an opportunity for students to investigate health and human development issues across the lifespan. They will develop the knowledge, attitudes, values and skills to become actively involved in shaping the influences that determine their own health and development, and the health of their local and global communities. The study also promotes the understanding that many factors, both inherited and environmental, play a major role in determining health and development; and that one of the most significant influences on health and development is nutrition. Promoting good nutrition enhances an individual's quality of life as well as his or her physical, social, emotional and intellectual development. In addition, it contributes to the social and economic wellbeing of society.

Unit 1: The health development of Australia's youth

This unit focuses on the transition from childhood to adulthood and the enormous changes in physical, social, emotional and intellectual development that transition brings. Good health is seen as an important determinant for optimal development. Challenges related to the maintenance of optimum health and development for youth are explored, focusing on the health issues and environmental factors that influence the physical, social, emotional and intellectual changes that occur at this stage of life.

Unit 2: Individual Human Development and Health Issues

In this unit, there is a focus on prenatal development and the role that families, communities and governments play in optimising the health of individuals across the lifespan. There is an exploration of differences in health and developmental outcomes experienced by some social and cultural groups, despite relatively high levels of community and government involvement. There is a particular focus on indigenous, rural and remote communities and Australians from lower socio-economic backgrounds.

There is also an exploration of the requirements of optimal health and development throughout childhood and adulthood. Students will also examine the organisation and delivery of health care in Australia and evaluate its effectiveness in promoting health and development for all Australians.

Unit 3: Australia's Health

Students will explore the diversity of health outcomes within our population that are the result of factors such as biology, socio-economic status, environment, inherited lifestyle, behaviour, knowledge, attitudes and beliefs. The role of nutrition in Australia's health will be explored, including nutrition as a protective factor against a number of diseases across the lifespan. Government and non-government initiatives designed to promote health and development are also considered, with a focus on Australia's health care system.

Unit 4: Global Health and Development

The unit focuses on the comparisons of Australia's health to that of developing countries and the promotion of global health. There is an analysis of the impact of a range of environmental factors that contribute to variations in health and developmental outcomes both between and within industrialised and developing countries. This global comparison will enable students to evaluate the determinants of optimal health and development and the range of sustainable health care initiatives developed by governments and international agencies to optimise health and development globally.

Assessment

Units 1 and 2:

Students will be informed of the assessment procedures at the commencement of each unit.

Units 3 and 4

Unit 3 school-assessed coursework: 25 per cent

Unit 4 school-assessed coursework: 25 per cent

End-of-year examination: 50 per cent.

HISTORY

History involves inquiry into human action in the past, to make meaning of the past using primary sources as evidence. As historians ask new questions, revise interpretations or discover new sources, fresh understandings come to light.

Although history deals with the particular – specific individuals and key events – the potential scope of historical inquiry is vast and formed by the questions that historians pursue, the availability of sources and the capacity of historians to interpret those sources. VCE History reflects this range of inquiry by enabling students to engage with a range of times, people, places and ideas.

The study of VCE History assists students to understand themselves, others and their world, and broadens their perspective by examining people, groups, events, ideas and movements. Through studying VCE History, students develop social, political, economic and cultural understanding. They also explore continuity and change: the world is not as it has always been, and it will be subject to change in the future. In this sense, history is relevant to contemporary issues.

The study of history fosters the ability to ask searching questions, to engage in independent research, and to construct arguments about the past based on evidence. Historical comprehension enables a source to be understood in relation to its context; that is, students make links between the source and the world in which it was produced.

We can never know the whole past. Historical knowledge rests on the interpretation of sources that are used as evidence. Furthermore, judgments of historical significance made by historians are central to the discipline. Historians do not always agree about the meaning that is taken from the past: historical interpretations are often subject to academic and public debate. The study of history equips students to take an informed position on such matters, helping them develop as individuals and citizens.

Twentieth Century History

Twentieth Century History examines the aftermath of the Great War as well as the causes and consequences of World War Two.

Unit 1: 1918-1939

Students explore the nature of political, social and cultural change in the period between the world wars.

Unit 2: 1945-2000

Students explore the nature and impact of the Cold War and the challenges to existing political, economic and social arrangements in the second half of the twentieth century.

Unit 3 and Unit 4: Revolutions

Revolutions explores the causes and consequences of revolution in Russia and China. Students analyse the long-term causes and short-term triggers of revolution. They analyse the consequences of the revolution and the extent to which it brought change to society.

Assessment

Units 1 and 2:

Students will be informed of the assessment procedures at the commencement of each unit.

Units 3 and 4

School-assessed coursework and an end-of-year examination.

- Unit 3 school-assessed coursework: 25 per cent
- Unit 4 school-assessed coursework: 25 per cent
- Unit 3 and 4 examination: 50 per cent.

LEGAL STUDIES

This study is about the way the law relates to and serves both individuals and the community. It focuses on developing an understanding of the way in which law is generated, structured and operates in Australia, and its impact on rights and responsibilities of individuals and society.

Unit 1: Criminal Law in Action

Students examine the need for laws in society. They investigate the key features of criminal law, how it is enforced and adjudicated and possible outcomes and impacts of crime. Through a consideration of contemporary cases and issues, students learn about different types of crimes and explore rights and responsibilities under criminal law.

Unit 2: Issues in Civil Law

Students examine the rights that are protected by civil law, as well as obligations that laws impose. They investigate types of civil laws and related cases and issues and develop an appreciation of the role of civil law in society and how it affects them as individuals.

Unit 3: Law-making

In this unit students develop an understanding of the institutions that determine our laws, and their law-making powers and processes. They undertake an informed evaluation of the effectiveness of law-making bodies and examine the need for the law to keep up to date with changes in society. Students develop an appreciation of the complex nature of law-making by investigating the key features and operation of parliament, and influences on law-making, with a focus on the role of the individual.

Students investigate the nature and importance of courts as law-makers and undertake an evaluation of their effectiveness as law-making bodies. They also investigate the relationships that exist between parliaments and courts.

Throughout this unit, students examine relevant cases to support their learning and apply legal principles to these cases.

Unit 4: Resolution and Justice

Students examine the institutions that adjudicate criminal cases and civil disputes. They also investigate methods of dispute resolution that can be used as an alternative to civil litigation. Students investigate the processes and procedures followed in courtrooms and develop an understanding of the adversary system of trial and the jury system, as well as pre-trial and post-trial procedures that operate in the Victorian legal system. Using the elements of an effective legal system, students consider the extent to which court processes and procedures contribute to the effective operation of the legal system. They also consider reforms or changes that could further improve its effective operation.

Throughout this unit, students examine current or recent cases to support their learning, and apply legal principles to these illustrative cases.

Assessment**Units 1 and 2:**

Students will be informed of the assessment procedures at the commencement of each unit.

Units 3 and 4

School-assessed coursework and an end-of-year exam.

- Unit 3 school-assessed coursework: 25 per cent
- Unit 4 school-assessed coursework: 25 per cent
- Units 3 and 4 examination: 50 per cent

LITERATURE

Literature involves the study and enjoyment of a wide range of literary texts - classical, popular, traditional and modern. Its distinctive focus is on the use of language to illuminate and give insight into the nature of experience. Literature is an interactive study between the text, the social/political/economic context in which the text was produced, and the experience of life and of literature that the reader brings to the text.

Unit 1

This unit enables students to develop effective reading strategies, to examine the ideas and views of life which are presented in the literature studied and relate what they read to their own lives. Students respond critically, creatively and reflectively to the ideas and concerns of texts and gain insights into how texts function as representations of human experience.

Unit 2

In this unit students explore the ways literary texts connect with each other and with the world. They focus on developing reading strategies and personal responses to literature, and to an understanding of how themes and ideas in texts relate to personal and social experiences.

Units 3 and 4

The study of literature is a means of exploring human experience. It involves asking questions such as: whose experiences and what experiences are given voice in the text? How are they created through the text's use of language and literary devices? What does the text's representation of characters and events suggest about the values and views of the text? These units examine such questions and involve students in analysing a range of texts, developing skills in reading closely and critically, and discussing and debating various ways of interpreting and evaluating texts. Students develop their skills in communicating ideas in both written and oral forms.

Assessment

Units 1 and 2

Students will be informed of the assessment procedures at the commencement of each unit.

Units 3 and 4

School-assessed coursework and an end-of-year examination.

- Unit 3 school-assessed coursework: 25 per cent
- Unit 4 school-assessed coursework: 25 per cent
- Unit 3 and 4 examination: 50 percent.

MATHEMATICS

Mathematics is the study of function and pattern in number, logic, space and structure. It provides both a framework for thinking and a means of symbolic communication that is powerful, logical, concise and unambiguous and a means by which people can understand and manage their environment.

This study is designed to provide access to worthwhile and challenging mathematical learning in a way which takes into account the needs and aspirations of a wide range of students. It is also designed to promote students' awareness of the importance of mathematics in everyday life, in an increasingly technological society, and confidence in making effective use of mathematical ideas, techniques and processes.

All students in all the mathematical units offered will apply knowledge and skills, model, investigate and solve problems, and use technology to support learning mathematics and its application in different contexts.

NB: Data-based teacher judgement will be used to assist students in choosing the best Maths program for their level of skills and future career needs.

Structure: The study is made up of the following units:

- Foundation Mathematics Units 1 and 2
- General Mathematics Units 1 and 2
- Mathematical Methods Units 1 and 2
- Further Mathematics Units 3 and 4
- Mathematical Methods Units 3 and 4
- Specialist Mathematics Units 1 – 4

There are a number of sequences of Mathematics within the Maths Learning Area. Although some variation within these sequences is possible, generally speaking, the following sequences are seen as catering for the majority of students choosing to study Maths.

Foundation Mathematics: Units 1 and 2

These units provide for the continuing mathematical development of students entering VCE or VCAL, who need mathematical skills to support their other VCE, VCAL, or VET studies or future employment aspirations.

For Year 10 students in 2017, Foundation Mathematics prepare them for General Mathematics and students can continue on to study Further Mathematics Units 3 and 4.

The areas of study are: Space; Shape and Design; Patterns and Number; Handling data and Measurement.

General Mathematics: Units 1 and 2

This course is designed for students who are considering studying Further Mathematics 3 and 4. The areas of study are Statistics, Functions and Graphs, Linear Programming, Financial Arithmetic and Matrices.

Mathematical Methods: Unit 1 and 2

These units are designed in particular as preparation for Mathematical Methods Units 3 and 4. The areas of study for Unit 1 and Unit 2 are Functions and Graphs, Algebra, Calculus and Probability.

Further Mathematics: Units 3 and 4

Further Mathematics consists of a compulsory area of study, Data Analysis, and Financial Maths and a selection of 2 modules:

- Graphs and relations
- Matrices

Mathematical Methods: Unit 3 and 4

Mathematical Methods Unit 3 and 4 consists of the following areas of study: Functions & Graphs, Algebra, Calculus and Probability which must be covered in a progression from Unit 3 to Unit 4 with an appropriate selection of content for each of Unit 3 and Unit 4.

Specialist Mathematics: Unit 3 and 4

Specialist Mathematics Units 3 and 4 consists of the following areas of study: Functions, Relations & Graphs, Algebra, Calculus, Vectors and Mechanics. Students must be studying or have studied Maths Methods Unit 3 and 4 to undertake this subject.

Use of Technology

The appropriate use of technology to support and develop the teaching and learning of mathematics will be incorporated throughout each unit: CAS calculators; graphics calculators; spreadsheets; graphing packages; dynamic geometry systems; statistical analysis systems and computer algebra systems. Students are encouraged to use graphics calculators, spreadsheets or statistical software for probability and statistics related areas of study, graphics calculators, dynamic geometry systems, graphing packages or computer algebra systems in the remaining areas of study systems, both in the learning and application of material in a variety of contexts.

Students must purchase the Casio Classpad CAS calculator for ALL MATHS SUBJECTS EXCLUDING foundation maths.

Year 10 2017

If you study this in 2017	These units are available in 2018	These units are available in 2019
Foundation Mathematics Units 1 & 2	General Mathematics Units 1 & 2	Further Mathematics Units 3 & 4
General Mathematics Units 1 & 2	Mathematical Methods Units 1 & 2	Mathematical Methods Units 3 & 4 Specialist Mathematics Units 3 & 4
	Further Mathematics Units 3 & 4	

Year 11 2017

If you study this as units 1 & 2 in 2017	These units are available in 2018
Mathematical Methods Units 1 & 2	Specialist Mathematics Units 3 & 4 and Mathematical Methods Units 3 & 4 Further Mathematics Units 3 & 4
General Mathematics Units 1 & 2	Further Mathematics Units 3 & 4
Foundation Mathematics Units 1 & 2	

Note:

- It is highly recommended that students wishing to study Specialist Mathematics Units 3 & 4 also study Mathematical Methods Units 1 & 2
- Students must study Mathematical Methods Units 3 & 4 to study Specialist Mathematics Units 3 & 4.

Assessment

Units 1 and 2

- Students will be informed of the assessment procedures at the commencement of each unit.

Units 3 and 4

Further Mathematics

- Unit 3 school-assessed coursework: 20 percent
- Unit 4 school-assessed coursework: 14 percent
- Unit 3 and 4 examination (Facts, skills and applications): 33 percent
- Unit 3 and 4 examination (Analysis task): 33 percent

Mathematical Methods

- Unit 3 school-assessed coursework: 17 percent
- Unit 4 school-assessed coursework: 17 percent
- Unit 3 and 4 examination (Facts, skills and applications): 22 percent
- Unit 3 and 4 examination (Analysis task): 44 percent

Specialist Mathematics

- Unit 3 school-assessed coursework: 17 percent
- Unit 4 school-assessed coursework: 17 percent
- Unit 3 and 4 examination (Facts, skills and applications): 22 percent
- Unit 3 and 4 examination (Analysis task): 44 percent

MEDIA

The media is a diverse, dynamic and evolving collection of forms used to inform, communicate with and connect people. Media influence the way people spend their time, help shape the way they perceive themselves and others, and play a crucial role in the creation and exchange of personal, social, cultural, national and global identities. VCE Media examines media products as the expression of creative ideas, specific symbolic languages and discourses of society and culture that shape meaning and reflect the society in which they were created. This study explores a variety of media forms, including audio, audio-visual media, print-based media, digital and interactive media technologies and convergent media processes. Students examine and analyse the relationships between audiences and the media, through a theoretical and practical study that places the student in the role of a media creator.

Unit 1: Representation and Technologies of Representation

In this unit, students develop an understanding of the relationship between the media, technology and the representations present in media forms. They study the relationships between media technologies, audiences and society. Students develop practical and analytical skills, including an understanding of the contribution of codes and conventions to the creation of meaning in media products, the role and significance of selection processes in their construction, the role audiences play in constructing meaning from media representations, and the creative and cultural impact of new media technologies.

Unit 2: Media Production and the Media Industry

In this unit, students develop their understanding of the specialist production stages and roles within the collaborative organisation of media production. Students participate in specific stages of a media production, developing practical skills in their designated role. Students develop an understanding of media industry issues and developments relating to production stages and roles and the broader framework within which Australian media organisations operate.

Unit 3: Narrative and Media Production Design

In this unit, students develop an understanding of film, television or radio drama production and story elements, and learn to recognise the role and significance of narrative organisation in fictional film, television or radio drama texts. Students examine how production and story elements work together to structure meaning in narratives to engage audiences. Students also develop practical skills through undertaking exercises related to aspects of the design and production process. They complete a media production design plan for a specific media form and audience. They present the relevant specifications as a written planning document, with visual representations that employ media planning conventions.

Unit 4: Media: Process, Influence and Society's Values

Students further develop practical skills in the production of media products to realise the production design plan completed during Unit 3. Organisational and creative skills are refined and applied throughout each stage of the production process. Students analyse the relationship between media texts, social values and discourses in the media. The nature of media influence, media audiences and media regulations are critically analysed.

Materials Charge

Media Studies will use extensive or expensive class materials, which will require additional charges. These charges will vary in cost from \$50 to \$80.

Assessment

Units 1 and 2:

Students will be informed of the assessment procedures at the commencement of each unit.

Unit 3 and 4

School-assessed coursework, a school-assessed task and an end-of-year examination.

- Unit 3 and Unit 4 school-assessed coursework: 20 per cent
- Unit 3 and Unit 4 school-assessed task: 35 per cent
- Unit 3 and 4 examination: 45 per cent.

PHYSICAL EDUCATION

Physical Education examines the biological, social and cultural influences on performance and participation in physical activity. Theory and practice are integrated in this study which is approached through both the study of, and participation in, physical activity.

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 role, functions and relationships between the body systems and physical activity, sport and exercise, and how the systems adapt and adjust to the demands of the activity. Students investigate the role and function of the main structures in each system and how they respond to physical activity, sport and exercise. They explore how the capacity and functioning of each system acts as an enabler or barrier to movement and participation in physical activity.

Students evaluate the social, cultural and environmental influences on movement in this unit. They consider the implications of the use of legal and illegal practices to improve the performance of the musculoskeletal and cardiorespiratory systems, evaluating potential benefits and harms. They also investigate and implement strategies to minimise the risk of illness or injury to each system.

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.

Through a series of practical activities, students experience and explore different types of physical activity promoted in their own and different population groups. They investigate how participation in physical activity varies across the lifespan and explore a range of factors that influence participation in regular physical activity. Students collect data to determine perceived enablers of and barriers to physical activity and the ways in which opportunities for participation in physical activity can be extended in various communities, social, cultural and environmental contexts. Students investigate individual and population-based consequences of physical inactivity and sedentary behaviour.

Students focus on a range of issues associated with physical activity and/or sport at the local, national and global level. They investigate in detail one issue relevant to physical activity and/ or sport and they evaluate the effect of individual, social, policy and physical environmental factors on participation in physical activity. Students are required to review historical, and current perspectives of the issue and forecast future trends.

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 from a physiological perspective. Students need to analyse movement skills and apply biomechanical and skill acquisition principles to improve and refine movement in physical activity, sport and exercise. They use practical activities to demonstrate how correct application of these principles can lead to improved performance in physical activity and sport.

Students learn about the interplay of the three energy systems to performance in physical activity, sport and exercise. They investigate the characteristics of each system and the interplay of the

systems during physical activity. Students explore the causes of fatigue and consider different strategies used to postpone fatigue and promote recovery.

Unit 4: Training to improve performance

In this unit students analyse movement skills from a physiological, psychological and sociocultural perspective, and apply training principles and methods to improve performance. Students analyse skill frequencies, movement patterns, heart rates and work to rest ratios to determine the requirements of an activity. Students consider the physiological, psychological and sociological requirements of training to design and evaluate an effective training program.

Students participate in a variety of training sessions designed to improve or maintain fitness and evaluate the effectiveness of different training methods. Students critique the effectiveness of the implementation of training principles and methods to meet the needs of the individual, and evaluate the chronic adaptations to training from a theoretical perspective.

Assessment

Units 1 and 2:

Students will be informed of the assessment requirements at the commencement of each unit.

Unit 3 and 4

School-assessed coursework and an end-of-year examination.

- Unit 3 school-assessed coursework: 25 per cent
- Unit 4 school-assessed coursework: 25 per cent
- Units 3 and 4 examination: 50 per cent.

PHYSICS

Physics is a theoretical and empirical science, which contributes to our understanding of the physical universe from the minute building blocks of matter to the unimaginably broad expanses of the Universe. This understanding has significance for the way we explore our place in the Universe.

Physics is the study of all aspects of the universe. It is about understanding how everything works from nerve cells to spaceships, from atoms to Black Holes.

Physics includes the use of theories and models, investigation of hypotheses, collection and analysis of data, drawing conclusions, and selection and use of a range of appropriate technologies and mathematical techniques. Knowledge in physics is gained through complex processes. For example, theories developed as a result of studying the ways that matter interacts with matter and the ways that light and matter mutually interact, have led to innovations in medicine, electronics, energy use, telecommunications and materials science.

This study design provides a curriculum that is interesting and challenging for students with a range of expectations, including students who are aiming for medical, engineering, technological and science-based careers.

Unit 1: What ideas explain the physical world?

In this unit, students explore some of the fundamental ideas and models used by physicists in an attempt to understand and explain the world. They consider thermal concepts by investigating heat and assessing the impact of human use of energy on the environment. Students evaluate common analogies used to explain electricity and investigate how electricity can be manipulated and utilised. They examine current scientifically accepted theories that explain how matter and energy have changed since the origins of the Universe.

Unit 2: What do experiments reveal about the physical world?

This unit requires that students undertake a core study related to motion, one option from a choice of twelve options, and a student-designed investigation related to motion or one of the twelve options.

Students explore the power of experiments in developing models and theories. They make direct observations of physics phenomena and examine the ways in which phenomena that may not be directly observable can be explored including through indirect observations. Students investigate the ways in which forces are involved both in moving objects and in keeping objects stationary. They choose one of twelve options related to astrobiology, astrophysics, bioelectricity, biomechanics, electronics, flight, medical physics, nuclear energy, nuclear physics, optics, sound and sports science.

Unit 3: How do fields explain motion and electricity?

This unit focuses on the ideas that underpin much of the technology found in areas such as communications, engineering, commerce and industry. Motion in one and two dimensions is introduced and applied to moving objects on Earth and in space. Circuit models are applied to further aspects of electricity and electronics, and the operation and use of photonic devices are introduced. The detailed studies offer examples of theoretical and practical applications of these technologies.

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

This unit focuses on the development and limitations of models in explaining physical phenomena. A field model of electromagnetism is applied to the generation of electricity, and the development of

models that explain the complex interactions of light and matter are considered. The detailed studies provide examples of innovative technologies used for research and communication.

Assessment**Units 1 and 2.**

Students will be informed of the assessment procedure at the commencement of each unit.

Unit 3 and 4

School-assessed coursework and examination.

- Unit 3 school-assessed coursework: 21 per cent
- Unit 4 school-assessed coursework: 19 per cent
- End-of-year examination: 60 per cent

PRODUCT DESIGN AND TECHNOLOGY

Central to VCE Product Design and Technology is the product design process, which provides a structure for students to develop effective design practice. The design process involves identification of a real need that is then articulated in a design brief. The need is investigated and informed by research to aid the development of solutions that take the form of physical, three-dimensional functional products. Development of these solutions requires the application of technology and a variety of cognitive and physical skills, including creative design thinking, drawing and computer-aided design, testing processes and materials, planning, construction, fabrication and evaluation.

In VCE Product Design and Technology, students assume the role of a designer-maker. In adopting this role, they acquire and apply knowledge of factors that influence design. Students address the design factors relevant to their design situation.

Unit 1: Product Re-design and Sustainability

This unit focuses on the analysis, modification and improvement of a product design with consideration of the materials used and issues of sustainability. Finite resources and the proliferation of waste require sustainable product design thinking.

Unit 2: Collaborative Design

In this unit, students work in teams to design and develop an item in a product range or contribute to the design, planning and production of a group product. They focus on factors including: human needs and wants; function, purpose and context for product design; aesthetics; materials and sustainability; and the impact of these factors on a design solution.

Unit 3: Applying the Product Design Process

In this unit, students are engaged in the design and development of a product that meets the needs and expectations of a client and/or an end-user, developed through a design process and influenced by a range of complex factors. These factors include the purpose, function and context of the product; human-centred design factors; innovation and creativity; visual, tactile and aesthetic factors; sustainability concerns; economic limitations; legal responsibilities; material characteristics and properties; and technology.

Unit 4: Product Development and Evaluation

Students learn that evaluations are made at various points of product design, development and production. As designer, students judge the suitability and viability of design ideas in collaboration with a client and/or an end-user. Comparisons between similar products help to judge the success of a product in relation to a range of Product design factors.

This study asks students to call on their knowledge and understanding of materials and production processes to design and make products suitable for their intended purpose.

Materials Charge

Product Design and Technology will use extensive or expensive class materials, which will require additional charges. These charges will vary in cost from \$80 to \$100.

Assessment

Unit 1 and 2:

Students will be informed of the assessment procedures at the commencement of each unit.

Units 3 and 4

School-assessed tasks, school-assessed coursework and an end-of-year examination.

- Unit 3 school-assessed coursework: 10 per cent
- Unit 4 school-assessed coursework: 10 per cent
- Units 3 and 4 school-assessed task: 50 per cent
- **Units 3 and 4 examination: 30 per cent**

PSYCHOLOGY

VCE Psychology enables students to explore how people think, feel and behave through the use of a biopsychosocial approach. As a scientific model, this approach considers biological, psychological and social factors and their complex interactions in the understanding of psychological phenomena. The study explores the connection between the brain and behaviour by focusing on several key interrelated aspects of the discipline: the interplay between genetics and environment, individual differences and group dynamics, sensory perceptions and awareness, memory and learning, and mental health. Students examine classical and contemporary research and the use of imaging technologies, models and theories to understand how knowledge in psychology has evolved and continues to evolve in response to new evidence and discoveries. An understanding of the complexities and diversity of psychology leads students to appreciate the interconnectedness between different content areas both within psychology, and across psychology and the other sciences.

As well as an increased understanding of scientific processes, students develop capacities that enable them to critically assess the strengths and limitations of science, respect evidence-based conclusions and gain an awareness of the ethical, social and political contexts of scientific endeavours.

Unit 1: How are behaviour and mental processes shaped?

Human development involves changes in thoughts, feelings and behaviours. In this unit students investigate the structure and functioning of the human brain and the role it plays in the overall functioning of the human nervous system. Students will explore how brain damage can influence a person's psychological functioning, is all brain damage permanent? Students examine the contribution of Psychologists of the past and the influence their work has had on understanding the human brain and its functions, and the development of different psychological models and theories used to predict and explain the development of thoughts, feelings and behaviours.

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

A person's thoughts, feelings and behaviours are influenced by a variety of biological, psychological and social factors. In this unit students will investigate how human perception of the world and discover how their understanding of how the world works could be distorted. Students will discover how social cognition plays an important role in influencing a person's attitude, perception of themselves and relationships with others. They will explore a variety of factors and contexts that can impact the behaviour of an individual and groups.

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

The nervous system influences behaviour and the way people experience the world. In this unit students will study the human nervous system and will discover how it 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 will look into how memory and learning lead to humans acquiring knowledge, the development of new skills and changed behaviour. Students will also study the theories of Psychologists of the past and how their work has provided an understanding of the structure and functions of the nervous system, and the understanding of biological, psychological and social factors that influence learning and memory.

Unit 4: How is wellbeing developed and maintained?

Consciousness and mental health are two of many psychological areas that can be explored by studying the relationship between the mind, brain and behaviour. In this unit students examine the nature of consciousness and how changes in levels of consciousness can affect mental processes and behaviour. Students will look at sleep and the impact that sleep disturbances may have on a person's functioning. They will explore the concept of a mental health continuum and apply a biopsychosocial approach to analyse mental health and disorder. They will research a specific phobia and illustrate how the development and management of a mental disorder can be considered as an interaction between biological, psychological and social factors.

This unit focuses on the interrelationship between learning, the brain and its response to experiences, and behaviour. Students investigate learning as a mental process that leads to the acquisition of knowledge, development of new capacities and changed behaviours.

Students build on their conceptual understanding of learning to consider it as one of several important facets involved in a bio-psychosocial approach to the analysis of mental health and illness. They consider different concepts of normality, and learn to differentiate between normal responses such as stress to external stimuli, and mental disorders.

Assessment

Satisfactory Completion: Achievement of the set of outcomes specified in the unit.

Levels of Achievement: Students will be informed of the assessment procedures at the commencement of each unit

Units 3 and 4

School-assessed coursework and examination

- Unit 3 school-assessed coursework: 16%
- Unit 4 school-assessed coursework: 24%
- Unit 3 & 4 end-of-year examination: 60%

STUDIO ARTS

Studio Arts provides a framework for the establishment of effective art practices through an understanding and application of the process of design. The design process enables students to explore ideas and sources of inspiration, experiment with materials and techniques and practise specialised skills in a range of art forms. Students generate a range of directions and potential solutions and analyse and evaluate them before producing artworks. The theoretical component of the study informs students' practice through an investigation of selected artworks, an examination of artists' working methods and a study of professional practices and art industry issues.

Unit 1: Artistic Inspiration and Techniques

The focus of this unit is the use of sources of inspiration and ideas as the bases for artworks and the exploration of a wide range of materials and techniques as tools for translating ideas, observations and experiences into visual form. The application of materials and techniques and interpretation of sources of inspiration by artists from different times and locations is also examined.

Unit 2: Design Exploration and Concepts

The focus of this unit is to establish and use an effective design methodology for the production of design explorations and artworks. Students also develop skills in the analysis of artworks to understand how aesthetic qualities are created, ideas communicated and identifiable styles developed.

Unit 3: Studio Production and Professional Art Practices

The focus of this unit is the implementation of a design process leading to the production of a range of potential solutions. A work brief is initially prepared to set out the framework for the design process. Students also examine professional art practices in relation to particular art forms and the development of distinctive styles in art works.

Unit 4: Studio Production and Art Industry Contexts

The focus of this unit is to produce a cohesive folio of finished art works developed from potential solutions generated in Unit 3. Visual and written documentation explaining how the potential solutions will be used to produce the folio of artworks is also prepared. Students also examine the presentation of artworks and current art industry issues, with reference to the exhibition, promotion and critique of art works.

An end of year examination is based on the theory topics covered.

Materials Charge

Studio Arts will use extensive or expensive class materials, which will require additional charges. These charges will vary in cost from \$100 to \$120.

Assessment

Units 1 and 2:

Students will be informed of the assessment procedures at the commencement of each unit.

Unit 3 and 4

- Unit 3 school-assessed task: 33 per cent
- Unit 4 school-assessed task: 33 per cent
- End-of-year examination: 34 per cent

VISUAL COMMUNICATION AND DESIGN

This study is intended to assist students in the understanding, production and interpretation of a range of visual communications. It involves a study of the vocabulary and grammar of visual communication, which includes an understanding of, and application of, drawing and drawing conventions, design elements, principles and design process in visual communication. The study also provides the opportunity to develop an informed, critical and discriminating approach to visual communications encountered in everyday life.

Unit 1: Visual communication

The main purpose of this unit is to enable students to prepare instrumental drawings of objects and explore freehand drawing from direct observation. Students also experiment and explore the application of design elements and principles in the preparation of solutions to suit specific purposes. Students study how the design process is applied in the production of visual communications.

Unit 2: Communication in context

The main purpose of this unit is to enable students to develop practical skills by generating images and developing them through freehand and instrumental drawing. The ways in which information and ideas are communicated visually are also explored through the analysis of the work of others. The design process is applied in developing visual communication solutions to set tasks.

Unit 3: Visual communication practices

The main purpose of this unit is to enable students to produce visual communications through the application of the design process to satisfy specific communication needs. Students also study the production of visual communications in a professional setting, and evaluate examples of visual communications. Students also explore how designers work within ethical boundaries.

Unit 4: Designing to a brief

The main purpose of this unit is to enable students to prepare one brief that defines the need or needs of a client. Students apply the design process to produce developmental work and two final presentations based on the brief.

Materials Charge

Visual Communication and Design will use extensive or expensive class materials, which will require additional charges. These charges will vary in cost from \$50 to \$70.

Assessment

Units 1 and 2:

Students will be informed of the assessment procedures at the commencement of each unit.

Units 3 and 4

- Unit 3 school-assessed coursework: 20 per cent
- Unit 4 school-assessed task: 5 per cent
- Units 3 and 4 examination: 35 per cent
- School Assessed Task (SAT) 40 per cent