



KAMBRYA

C O L L E G E

Student Course Selection Handbook

Years 11 & 12

2009

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Philosophy and Objectives

Statement of Purpose & Values

Our Purpose

Kambrya College provides individuals with opportunities to develop as active citizens and critical thinkers for an ever-changing global society and environment. It supports the principles enshrined in the United Nations Universal Declaration of Human Rights.

Our Values

The Kambrya College Community values:

- Respect
- Integrity
- Compassion
- Achievement

Discovering, Creating and Establishing Our Place in the World

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Staff Contacts

College Principal	Mr Michael Muscat
Principal – Curriculum	Mr J Shaw
Later Years Sub-School Leader 2008	Mrs F Tonizzo
Year 10 Sub-School Leader	Mr K Perry
Year 10 Community Leaders 2008	Ms S Chase, Ms A Reeves, Mr P Lewis
Year 11 Co-Ordinators 2008	Mr G Keet, Ms H Lewis
Curriculum Leader – Arts	Ms R Spencer
Curriculum Leader – English	Ms L Robinson-Lay
Curriculum Leader – Health & Physical Ed	Ms B Roff
Curriculum Leader – LOTE	Mr B Forbes
Curriculum Leader – Mathematics	Ms S Day
Curriculum Leader – Science	Mr K Chand
Curriculum Leader – Humanities	Ms J Easson
Curriculum Leader – Technology	Mr P Lewis
Managed Individual Pathways (MIPs)	Mr B Jamieson
Careers	Mrs P Van Der Poel
Vocational Education & Training in Schools (VET)	Mr M Sinclair
Victorian Certificate of Applied Learning (VCAL)	Mr G Keet
Australian School Based Apprenticeship (ASBA)	Mr M Sinclair
Enhancement Studies	Mrs F Tonizzo
Victorian School of Languages	Mrs F Tonizzo

This document is a guide to planning your Senior Pathways Programme (VCE or VCAL programme for Years 11 and 12, with the possible inclusion of a VETiS subject or an ASBA). Kambrya College values individual differences and the diversity of learning styles and needs. This is reflected in the Later Years subjects offered. There is a range of both applied and academic programmes to enable you to align your Later Years Programme with your preferred learning styles, identified strengths, interests and future aspirations.

Contained in this handbook are outlines of all units of study being offered at Kambrya College for 2008. Units will only run where sufficient student numbers exist for the classes. This decision is at the discretion of the College.

Students and their families will need to be familiar with the unit information for each chosen unit. Year 10 students will receive **Course Counselling** through an individual session with one of our Later Years Course Counsellors. At this time, you will need to have your Course Selection Sheet completed and signed by a parent / guardian. **The appointment will be to confirm your choices and to discuss the reasons for your choices with the counsellor.**

The Course Confirmation dates are:

Year 11, 2008 – Wednesday 25th & 26th June, 2008

Year 12, 2008 – Monday 18th June, 2008

It is the responsibility of the student to check all information prior to their Course Counselling Appointment, including the accuracy of pre-requisites for tertiary courses. It is highly recommended that you refer to the outcomes of your careers counselling and MIPs (Managed Individual Pathways) interview/s when considering your course selection. Please note that the Careers Room is open every school day during recess and lunch for students to access staff and information.

The VTAC website (www.vtac.edu.au) is an excellent resource for this process.

What to remember when choosing a subject

- How does a student choose their VCE studies (subjects)?
- Is there any study or combination of studies that will give them an advantage?
- The best advice is to choose studies
 - Which the student enjoys
 - In which the student achieves well
 - That the student may need for future study or work
 - Which maintain and develop the student's special skills and talents

Students are encouraged to continue studying a LOTE (if they are doing well).

Students are encouraged to do the hardest maths they can.

VCE (Victorian Certificate of Education)

This is the traditional academic pathway for students in Years 11 & 12.

You **must** complete the VCE if you require an ENTER score (Equivalent National Tertiary Entrance Rank) for a tertiary course at either a University or TAFE.

Note that not all TAFE courses require an ENTER score, but some do.

To obtain your VCE, you must successfully complete at least 16 units of study. One unit of study is one semester in duration.

In addition, you must satisfactorily complete at least three units from the English Group:

- English / ESL Units 1, 2, 3 & 4
- English Language Units 1, 2, 3 & 4
- Literature Units 1, 2, 3 & 4

You cannot count more than two Unit 1 & 2 English units in your total.

You must also complete at least three other sequences of Unit 3 – 4 studies. One of these sequences may be a VET programme. See page 7 for a list of VETiS courses that can contribute to an ENTER score. Please note that not all VETiS courses do this.

A typical VCE programme includes six units of study per semester in Year 11 (which may include a Unit 3 – 4 sequence and / or a VET programme) and five sequences of Unit 3 – 4 studies (which may include a VET programme or an Enhancement Studies subject) in Year 12.

It is recommended that Year 11 Unit 1 – 2 studies are taken as preparation for Year 12 Unit 3 – 4 studies.

In some subject areas, e.g. Physics, you cannot complete the Unit 3 – 4 sequence without having successfully completed Units 1 – 2.

Some units may have a materials charge attached to them to off-set the costs of consumable materials required for the delivery of the study. Selecting one of these courses means you accept responsibility for the charge incurred.

VCE Units Attracting a Materials Charge	
Art Units 3 & 4	\$100 per year - larger projects may incur additional charges
Biology Units 1 & 2, 3 & 4	\$25 per unit
Chemistry Units 1 & 2, 3 & 4	\$25 per unit
Design and Technology Units 1 & 2 (Wood, Metal, Textiles all charged)	\$100 per year - larger projects may incur additional charges
Drama Units 1 & 2 or Units 3 & 4	\$75 per year
Environmental Science Units 1 & 2, 3 & 4	\$25 per unit
Food and Technology (all units)	\$50 per unit
Kambrya VETiS Hospitality (Operations)	\$450 (approximately) per year
Outdoor & Environmental Studies Units 3 & 4	\$250 per unit (approximately)
Media Units 1 & 2, 3 & 4	\$75 per year
Physics Units 1 & 2, 3 & 4	\$25 per unit
Studio Arts Units 1 & 2, 3 & 4	\$100 per year - larger projects may incur additional charges
Visual Communication and Design Units 1 & 2 or Units 3 & 4	\$25 per unit

Accelerated Studies

Student may select one accelerated study (VCE study/University Enhancement Study) within the 10-12 program selections.

Variations to this may be permitted with the approval of the later Years Sub School Leader in consultation with the Careers and MIPs Co-ordinators.

Enhancement Studies

It is possible to include a first year university subject in your Year 12 course of study that will still contribute to your ENTER score. These are aimed to further extend high performing academic students. They can also earn credit points towards your tertiary qualifications in some cases. Subjects, locations, fees and enrolment criteria vary, so please see the Careers staff or Mrs Tonizzo if you are interested.

Students are also able to complete some Unit 3 – 4 studies while in Year 11. Please see your 2008 Co-Ordinator if you are interested in this.

Victorian School of Languages

Some students continue their studies of LOTE classes through the Victorian School of Languages (VSL). These classes can also contribute to the VCE programme of studies. Students should contact Mrs Tonizzo to discuss this aspect of their programme.

VCAL (Victorian Certificate of Applied Learning)

VCAL is a hands on approach using applied learning as its focus. If your main aim is to go to TAFE, get an apprenticeship or take on-the-job training when you leave school, then you should consider completing VCAL.

VCAL gives you practical, work-related experience as well as literacy, numeracy and personal development skills.

VCAL and VCE are both accredited secondary certificates.

VCAL is offered at three levels: Foundation, Intermediate (usually Year 11) and Senior (usually Year 12).

To be awarded the VCAL certificate, you must successfully complete the following:

- Literacy – this may be VCAL Literacy or any VCE English Unit 1 – 2 sequence
- Numeracy
- Personal Development Skills – you must participate in community-based projects, voluntary work and / or structured activities that will help develop your self-confidence, teamwork skills and other skills important for life and work.
- Work Related Skills – this includes structured work placement or a School Based New Apprenticeship or part-time work.
- Industry Specific Skills – this will typically be your VET programme but if you enrol in VCAL at Foundation level, you may also include appropriate VCE units under this strand e.g. Food and Technology.

Some components of the VCAL are completed at the student's school, while others are at their VETiS provider e.g. TAFE or at their industry workplacement.

Once you have completed your VCAL you will have earned credit towards a trade or industry certificate and will have knowledge of areas such as Occupational Health & Safety (OH&S). This prior learning will be recognised and count towards your apprenticeship or traineeship, enabling you to obtain a trade qualification in less time. If you choose VCAL and then change your mind, it is possible to swap to the VCE; however there are many things to be considered before this takes place and consultation with Careers staff is essential.

VETiS (Vocational Education & Training in Schools)

VET programmes are available to senior secondary students as part of their VCE or VCAL programme. They are available in a range of industry areas and on completion, students receive a nationally recognised certificate as well as credit towards their VCE or VCAL programme.

Students combine school based studies with a VET programme which may involve attending a TAFE college, a Registered Training Organisation (RTO) or a workplace for training. VET programmes involve competency-based learning which means students perform tasks and duties to the standard expected in employment.

Structured industry work placement with an employer in the relevant industry area is a component of all VET programmes. The hours required in a structured work placement varies between VET certificates. Work placement may be completed one day per week or in week-long blocks.

Students undertaking a VET programme as part of their VCE studies will often miss some timetabled classes due to external training or work placement. It is the responsibility of the student to ensure that they are still able to satisfactorily demonstrate the learning outcomes for all of their VCE units.

Some VET programmes include a scored assessment that allows the VET programme to contribute to the VCE student's ENTER score.

In order to receive the VET qualification, it is important to note that students must undertake the entire Unit 1 → 4 structure of a VCE VET programme.

There is a cost to families for the VET course which varies according to the provider / study location. This charge varies from approximately \$400 to \$1000 depending on the programme and the location. It is the student's obligation to meet these costs. Specific costs for courses should be investigated prior to choosing a VET study as part of the student's course of study.

Vet Courses with a VCE Study Score:

Business	Engineering Studies	Information Technology
Administration	Equine Industry	Laboratory Skills
Community Services	Financial Services	Multimedia
Dance	Furnishing	Music Industry
Electrotechnology	Hospitality (Operations)	Sport & Recreation

ASBA (Australian School Based Apprenticeship)

These were previously known as SBNA (School Based New Apprenticeships). To be eligible to undertake an ASBA, you must be in paid work and sign a contract of training which must be registered with the Office of Training and Tertiary Education.

An ASBA can contribute to a VCAL programme through the Industry Related Skills strand of learning.

A VCE programme would share time with your part-time work, and your vocational training at a TAFE institute. Australian School Based Apprenticeships in the following areas are approved for the VCE:

- Agriculture
- Automotive
- Business
- Community Service
- Engineering
- Food Processing
- Food Processing (wine)
- Horticulture
- Hospitality (Operations)
- Information Technology
- Retail Operations
- Seafood Industry
- Sport and Recreation

If you are interested in an ASBA see Mr M Sinclair as soon as possible.

Summary of VCE Subjects Offered & Staff Contacts:

Subject	Staff to Contact for more Information
Accounting	Mr P Edwards
Art	Ms R Spencer
Biology	Ms S Winstone
Business Management	Ms S Chase
Chemistry	Ms L Sach
Dance	Ms D Munaweera
Design and Technology – Electrical, Electronics, Metal, Textiles, Wood	Mr B Sharp / Mr P Lewis
Drama	Mr J Hewat
Economics	Mr P Edwards
English / English as a Second Language	Mrs L Robinson-Lay
English Language	Mrs L Robinson-Lay
English Literature	Ms L Cook / Ms M Simmons
Environmental Science	Mr K Chand
Food and Technology	Ms S McKenzie
Foundation English	Mr R Mahalingam
Geography	Mrs F Tonizzo
Health and Human Development	Ms K Williams / Ms H Lewis
History – Australian, Revolutions	Mr B Jamieson
Industry and Enterprise	Mr B Jamieson
Information Technology	Mr S Anderson
International Politics	Mr B Forbes / Ms K Mooney
International Studies	Ms K Mooney
Legal Studies	Mrs A Kyprianos
LOTE – German	Ms D Duffus
LOTE - Japanese	Mrs J Herbert
Mathematics	Ms S Day
Media	Mr J Hewat / Ms P Adam
Outdoor and Environmental Studies	Ms B Roff
Philosophy	Mr A Fildes / Mr A Hands
Physical Education	Mr B Roff
Physics	Mr K Chand
Psychology	Mrs S Kirkham
Sociology	Ms P Crago
Studio Arts – General, Multi-Media & Photography	Ms R Spencer
Systems Engineering	Mr J Waite
Theatre Studies	Mr J Hewat / Mr M Timewell
Visual Communications and Design	Ms P Carroll

Detailed Subject Descriptions:

Accounting

Accounting is the process of recording, reporting, analysing and interpreting financial data and information which is then communicated to internal and external users of the information. It plays an integral role in the successful operation and management of a small business.

The preparation and presentation of financial statements is governed by Australian Accounting Standards and guided by the Framework for the Preparation and Presentation of Financial Statements (AASB Framework).

VCE Accounting focuses on the financial recording, reporting and decision-making processes of a small business. Students will study both theoretical and practical aspects of accounting. Financial data and information will be collected, recorded and reported using both manual and information and communications technology (ICT) methods.

Many students will go on to further studies in business and finance, and other students will go on to become small business owners. The study of Accounting will enable them to develop their financial knowledge and skills.

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, recording, reporting and analysing financial data and information used by internal and external users. Recording and reporting is restricted to the cash basis.

Students examine the role of accounting in the decision-making process using single entry recording of financial data and information for the owner 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 focuses on accounting for a single activity sole trader. Using the accrual approach, students use a single entry recording system for the recording and reporting of cash and credit transactions stock. They use financial and non-financial information to evaluate the performance of a business. Using these evaluations, students 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.

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 are introduced to the double entry system of recording using the accrual basis of accounting. The perpetual method of stock recording with the First In, First Out (FIFO) method is 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 covers the accrual recording and reporting system for a single activity

trading business using the perpetual inventory recording system. Students learn about the role and importance of budgeting for the business and undertake the practical completion of budgets for cash, financial performance and financial position. In this unit students evaluate the information prepared and analyse the results in order to suggest strategies to the owner.

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.

Art

This study encourages students to explore ideas and to demonstrate effective working methods and a range of technical skills through personal and independent investigation and experimentation. It emphasises the progressive development of personal concepts and the refinement of skills. The presentation of artworks may be in the form of exploratory visual solutions and/or through more finished artworks.

The study also equips students to respond to art in an informed and articulate manner through a study of how art relates to the society for which it was created and different expressions of artistic identity. Students also develop and refine personal points of view about the meanings and messages of artworks.

Unit 1

This unit focuses on realising ideas in the form of visual solutions to set tasks. Students explore materials, techniques and working methods in art form(s) and/or media. Students also study the ways in which artworks relate to the social context for which they were created and how artists choose to interpret social issues and themes.

Unit 2

This unit focuses on the development of areas of personal interest in visual exploration. It encourages artistic development through the exploration of materials, techniques and working methods within art form(s) and/or media. Students also study the roles of artists, how artists are portrayed in society and how artists develop personal styles and approaches to artistic expression.

Unit 3

This unit focuses on a broad and innovative investigation including exploration and experimentation within art form(s) and/or media to develop and refine a sustained body of work. Student's skill in interpreting artworks is developed through a study of artists and their works before and since 1970 through the application of interpretive frameworks and the comparison of artworks.

Unit 4

This unit focuses on the preparation and final presentation of ideas developed and refined from the visual directions explored in unit 3. The resolution of the student's ideas may be through innovative and exploratory visual solutions and/or through more finished artworks. As well, students evaluate ideas, issues and arguments expressed in commentaries on art, apply interpretive frameworks, critically view artworks and develop personal points of view.

Biology

Biology is the study of living things from familiar, complex multicellular organisms that live in the many different habitats of our biosphere to single celled micro-organisms that live in seemingly inhospitable conditions. It is a study of the dynamic relationships between living things, and their environment and the challenges of survival. All living things have many structural and functional characteristics in common, which can be used to classify and group organisms.

Modern biology draws on biochemistry, neuroscience, genetics, evolutionary biology, behavioural science, and cell and molecular biology. It connects with physics, chemistry, earth and space sciences in exploring the nature of past and present life, and the possibility of life forms beyond our planet.

Students develop knowledge of bioscience and skills of science inquiry and the values and attributes that will help them to consider issues and implications associated with the application of biological techniques and technologies.

Each unit deals with specific content and is designed to enable students to achieve a set of outcomes. Each outcome is described in terms of key knowledge. A set of key skills is applicable to all units. The set of skills consists of the ability to:

- Investigate and inquire scientifically
- Apply biological understandings
- Communicate biological information and understandings

Unit 1: Unity and diversity

In this unit students study the activities of cells and their structure and function at light and electron microscope levels. The composition of cells and cell replication is linked to type, cell growth and size division. The transport processes across plasma membranes is investigated. Common requirements of living things including energy, nutrients and exchanging gases are studied. Students are encouraged to conduct practical investigations including their own design to assist them to develop knowledge and understanding and to illustrate concepts.

Unit 2: Organisms and their environment

In this unit students study environmental factors common to all habitats and investigate structural and physiological adaptations of organisms to particular ecological niches. Plant growth responses are also investigated. Behavioural and reproductive adaptations are used to study individual and group behaviour of animals. Components, relationships and energy flows within ecosystems are studied. Techniques used to monitor environmental change and maintain ecosystems are investigated. Students are required to conduct fieldwork.

Unit 3: Signatures of life

In this unit students investigate the significant role of proteins in cell functioning. They explore how technological advances have provided improved knowledge and understanding of the roles proteins play in cell functions. The study of the structure and function of DNA and RNA leads students to investigate the diversity of proteins. Specific examples of the applications of molecular biology are included. Homeostasis, signalling molecules and signal transduction are included in a study of coordination and regulation. Immune responses, disorders of immune response and acquired immunity are investigated. Applications of molecular biology are explored.

Unit 4: Continuity and change

In this unit students focus on molecular genetics and investigate individual units of inheritance and the genomes of individuals and species. A study of asexually reproducing and sexually reproducing organisms is included. Students undertake practical investigations that involve the manipulation of DNA and inheritance traits. Students investigate changes to

species and the process of natural selection. The interaction between human, cultural and technological evolutions and impact on the evolutionary process is studied. Students consider the bioethical issues associated with the application of particular gene technologies.

Business Management

In contemporary Australian society, there is a wide variety of business organisations which vary in terms of size, ownership, objectives, resources and location. These organisations are managed by people who put in place systems and processes to achieve a range of objectives.

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.

In studying Business Management, students 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 vast majority of all businesses in the Australian economy. This unit provides students with the opportunity 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 develop knowledge of fundamental aspects of business communication and are introduced to skills related to its effective use in different contexts.

Unit 3: Corporate management

In this unit students investigate how large-scale organisations operate. They develop an understanding of the complexity and challenge of managing large organisations and have the opportunity to compare theoretical perspectives with practical applications.

Unit 4: Managing people and change

This unit commences with a focus on the human resource management function. It then progresses to the 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.

Chemistry

Chemistry is a key science in explaining the workings of our universe through an understanding of the properties and interaction of substances that make up matter. Most processes, from the formation of molecules in outer space to the complex biological interactions occurring in cells, can be described by chemical theories. Although there are no sharp boundaries between sciences such as chemistry, physics and biology, chemistry is used to explain natural phenomena at the molecular level, as well as create new materials such as medicines and polymers.

The development of modern society has been intimately linked with the successful integration of chemical knowledge into new technologies. This continues with emerging fields such as biotechnology and nanotechnology.

There are many unanswered questions in science, and many unexplained phenomena such as the language of the brain and the evolution of climate. Over time, chemistry will play a key role in answering some of these questions as well as providing a sustainable environment for the future.

Studying Chemistry can enrich students' lives through the development of particular knowledge, skills and attitudes, and enable them to become scientifically capable members of society. It will also provide a window on what it means to be a scientific researcher, working as a member of a community of practice, including insight into how new ideas are developed and investigated, and how evidence or data collected is used to expand knowledge and understanding of chemistry.

Many people develop an 'applied' knowledge of chemistry through their careers and day-to-day pursuits. Chemistry permeates numerous fields of endeavour, including agriculture, art, biochemistry, dietetics, engineering, environmental studies, food, forensic science, forestry, horticulture, law, medicine, oceanography, pharmacy, sports science and winemaking.

The chemistry undertaken in this study is representative of the discipline and the major ideas of chemistry. Some students will develop a passion for chemistry and be inspired to pursue further studies. All students, however, should become more informed, responsible decision-making citizens, able to use chemical knowledge and scientific arguments in their everyday lives and to evaluate and debate important contemporary issues such as the future of our environment and its management.

Unit 1: The big ideas of chemistry

The story of chemistry begins with the building of the Periodic Table from speculation, debate and experimental evidence. The Periodic Table provides a unifying framework for studying the chemistry of the elements using their chemical and physical properties to locate their position. The electron configuration of an element, its tendency to form a particular bond type and its ability to behave as an oxidant or reductant can all be linked to its position in the Periodic Table.

A study of the development of our understanding about the internal structure of the atom illustrates to students the collaborative and step-by-step way in which scientific theories and models are formed.

Students study the models for metallic, ionic and covalent bonding. They consider the widespread use of polymers as an example of the importance of chemistry to their everyday lives. Students investigate the uses of materials and how these have changed. Examples could include improved corrosion prevention or limitation and carbon nanotubes and self-repairing materials.

Students are introduced to the development and application of 'smart' materials. Developing new materials has escalated with the use of synchrotron science that explores particle behaviour at an ever decreasing size. Some examples of new materials are alloys, fibres and compounds incorporating polymers, ceramics, biopolymers, films and coatings.

Students use the language of chemistry, its symbols and chemical formulas and equations, to explain observations and data collected from experiments.

Unit 2: Environmental chemistry

Living things on earth have evolved to use water and the gases of the atmosphere in the chemical reactions that sustain them. Water is used by both plants and animals to carry out their energy-producing reactions, dissolve their nutrients and transport their wastes. The atmosphere supplies life-giving gases, provides temperature that sustains life, and gives protection from harmful radiation.

Algae blooms, salinity, acid rain, depletion of ozone, photochemical smog, and global warming continue to have an impact on living things and the environment. Students will investigate how chemistry is used to respond to the effects of human activities on our environment.

Typical tasks of environmental chemists include monitoring the concentration of wastes in the effluent from an industrial plant and monitoring air quality. Quantitative chemical calculations play an essential role in these tasks and students are introduced to the types of calculations used every day by analytical chemists.

The principles and applications of green chemistry – benign by design – to processes and practices are included. The goal of these processes is to achieve hazard-free, waste-free, energy efficient synthesis of non-toxic products whilst maintaining efficiency. Students are introduced to new, cleaner and more efficient chemical processes that have been designed using green chemistry principles.

Students continue to use and develop the language of chemistry, its symbols and chemical formulas and equations, to explain observations and data collected from experiments.

Unit 3: Chemical pathways

In this unit students investigate the scope of techniques available to the analytical chemist. Chemical analysis is vital in the work of the forensic scientist, the quality control chemist at a food manufacturing plant, the geologist in the field, and the environmental chemist monitoring the health of a waterway.

Each technique of analysis depends on a particular property or reaction of the chemical being investigated. Consequently, an understanding of the chemistry is necessary in learning how and why the techniques work. Some techniques of analysis have been refined over many years to make them quicker and more accurate. Other techniques are now used in combination to provide higher and more reliable levels of accuracy, for example gas chromatography and mass spectrometry. State of the art analytical tools such as the Australian synchrotron will enable investigation of the properties of materials and chemical reactions at the micro level.

Students investigate organic reaction pathways and the chemistry of particular organic molecules. A detailed knowledge of the structure and bonding of organic chemicals is important to the work of the synthetic organic chemist. In the wake of the work done on the genome project, synthesis of new medicines is one of the growth industries for the coming decades. Students investigate the role of organic molecules in the generation of biochemical fuels and forensic analysis.

Students will continue to investigate the application of principles of green chemistry to chemical processes and use the language and symbols of chemistry, and chemical formulas and equations to explain observations and data collected from experiments.

Students complete an extended experimental investigation drawn from area of study 1 or area of study 2.

Unit 4: Chemistry at work

In this unit students investigate the industrial production of chemicals and the energy changes associated with chemical reactions.

Chemical reactions produce a diverse range of products we use and depend on every day. Access to large quantities of raw materials and reliable energy supplies for these reactions is necessary to maintain continuous production of high quality useful chemicals. Features that affect chemical reactions such as the rate and yield or equilibrium position are investigated. Students explore how an understanding of these features is used to obtain optimum conditions in the industrial production of a selected chemical.

Our society uses a range of energy sources, including coal to generate electricity and gas for heating, oil for transport, and solar and wind for small and large scale production of electricity. Students investigate how energy is produced from available resources and consider the efficiencies, advantages and disadvantages of each energy resource.

Galvanic cells and electrolytic cells operate by transforming chemical and electrical energy. Students investigate their operating principles, both in the laboratory and in important commercial and industrial applications including fuel cells. These cells are used in smaller appliances such as mobile phones, CD players, personal computers, and in larger scale systems such as cars and motor bikes, and in the production of chemicals.

Students will continue to investigate the application of principles of green chemistry to chemical processes and use the language and symbols of chemistry, and chemical formulas and equations to explain observations and data collected from experiments.

Dance

Dance is the language of movement. It is the realisation of the body's potential as an instrument of expression. Throughout history and in different cultures, people have explored the dancer's ability to communicate and give expression to social and personal experience. The study of dance provides the opportunity to explore the potential of movement as a medium of creative expression through diverse approaches.

This study is designed to develop students' understanding and appreciation of dance as an art form that is based on the investigation and communication of ideas, themes and concepts. The potential range of expressive intentions that a choreographer, alone or in collaboration with others, can explore is extensive. The elements or formation of movement itself can be the source of inspiration as can personal life experience, or observations of and reflection on the world we live in.

The study focuses on development of students' technical and physical skills, personal movement vocabulary, and application of choreographic and analytical principles. Students create and perform their own dance works as well as studying the dance works of others through performance and analysis. They consider cultural influences on the expressive intention, form and movement vocabulary of their own dances and also on works created by choreographers working in a range of styles and/or traditions. Cultural influences on technical and production aspects in dance works are also studied.

Throughout the study students undertake systematic training in technical and physical skills which enables them to safely execute a diverse range of expressive body actions. Students develop and refine their technical and choreographic skills by exploring personal and learnt movement vocabularies and ways in which movement can be created and arranged to communicate, in a safe way, the expressive intention of the dance-maker. Students perform choreographed or learnt solo and group dance works using different dance-making processes, and study ways in which ideas are communicated choreographically and through performance skills in their own and others' dances.

Unit 1

In this unit students explore the potential of the body as an instrument of expression. They learn about and develop technical and physical skills. Students discover the diverse range of expressive movement by exploring body actions, and commence the process of developing a personal movement vocabulary.

Knowledge of physiology, including care and maintenance of the body, is applied to the execution of body actions through the safe use of technical and physical skills. Students develop and perform movement studies and dances with unified compositions created through a range of movement creation processes. They discuss cultural influences on their own dance backgrounds, and on the expressive intentions and movement vocabulary in their own dances.

Unit 2

This unit focuses on expanding students' personal movement vocabulary and choreographic skills through the exploration of the elements of movement; time, space (including shape) and energy and the study of form. Students apply their understanding of form and the expressive capacity of the elements of movement to the dance-making and performing processes involved in choreographing and performing their own dance works and dance works created by others.

Students are also introduced to pre-1930 dance tradition/s, style/s and/or works. Dance tradition/s, style/s and/or work/s selected for study might encompass dance tradition/s of indigenous cultures through to the works of ballet choreographers such as Leonide Massine and Michel Fokine, modern dance created by Ruth St Denis and Ted Shawn, early musical theatre/film choreography of Busby Berkeley and/or the work of tap/jazz performer Bill Robinson (Bojangles).

Students describe the movement vocabulary in their own and others' dances by identifying expressive body actions and ways the elements of movement have been manipulated. Students also analyse and discuss the communication of their own and other choreographers' intentions, through the structuring of form, and the choreographic and expressive use of the elements of movement.

Unit 3

This unit focuses on choreography, rehearsal and performance of a solo dance work and involves the physical execution of a diverse range of body actions and use of technical and performance skills. Students also learn a group dance work created by another choreographer. The dance-making and performance processes involved in choreographing, rehearsing and performing the solo dance work, and learning, rehearsing and performing the learnt group dance work are analysed.

Students also develop an understanding of choreographic skills through an analysis of ways the expressive intention chosen by the choreographer of twentieth and/or twenty-first century solo dance works selected from the prescribed list of dance works is developed through the use of choreographic devices and arrangement of phrases and sections. Students analyse expressive use of movement vocabulary in the selected dance works, and cultural influences on the choreographers' choice of expressive intention, and technical and production aspects of the dance works.

Unit 4

This unit focuses on choreography, rehearsal and performance of a unified solo dance work which has a beginning, development/s and resolution. When rehearsing and performing this work students focus on expressive and accurate execution of choreographic variations of spatial organisation and demonstration of performance skills. Students also document and analyse the dance-making and performance processes involved in the choreography, rehearsal and performance of the unified solo dance work.

Students understanding of choreographic skills is also developed and refined through an analysis of ways in which the choreographers' intention can be expressed through the

manipulation of group structures and the elements of spatial organisation, including direction, level, eye/body focus and dimension, in group dance works by twentieth and/or twenty-first century choreographers. Cultural influences on choices made by choreographers in these works are also studied.

Design and Technology – Electrical, Electronics, Metal, Textiles, Wood

Design plays an important part in our daily lives. It determines the form and function of the products we use and wear. Designing transforms ideas into drawings and plans for the creation and manufacture of useful products. Designer-makers use processes to develop products that fulfil human needs and wants. The combination of design and technical skills is vital if we are to create and use sustainable products, and add value to these products through commerce. In Design and Technology students assume the role of a designer-maker and develop knowledge and skills to produce effective and creative responses to design challenges.

Students acquire and apply knowledge of a range of design factors and fundamentals to develop solutions to meet specific requirements. They draw upon knowledge and methods associated with determining human needs and wants, product purpose and function, visual and aesthetic factors, properties and characteristics of materials, production processes and technologies, economic, environmental and ecological impacts, and innovation through design and technology.

Design and Technology focuses on developing an understanding of the social, economic and environmental consequences of design choices and decision making. Students develop skills to critically analyse the purpose, processes and products associated with design and technological innovation and activity. They develop the ability to understand, communicate and develop creative solutions while using tools, resources and human capabilities to complete a task for a given context.

The study of Design and Technology can provide a pathway to a range of related fields such as industrial, product and interior design, engineering, fashion, furniture, jewellery, textile and ceramic design. An understanding of design and its application can provide opportunities for students interested in undertaking further study in related fields in vocational education and training.

Unit 1: Design modification and production

Design often involves the refinement and improvement of existing products. This unit focuses on the analysis, modification and improvement of a product design. It provides a structured approach towards the design process, and looks at examples of design practice used by a designer, and analysis and evaluation of a design. The design and production work students complete will need to include three points of difference to improve an existing design/product.

The role of the designer is to work through a creative problem-solving process that results in the development of a product that fulfils a human need. This involves the use of analytical, clear and concise communication skills. A systematic approach is fundamental to acquiring the confidence to justify, develop and present innovative solutions to design challenges. An understanding of the processes used to determine which materials to use in the product is essential in product design.

The processes and techniques used by a current designer will be examined to demonstrate design practice as a way of solving a design problem.

This unit focuses on the tools, processes, techniques, knowledge and skills the designer has used to develop a solution to a problem. Students investigate methods and processes used by the designer 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.

Unit 2: Collaborative design

In this unit each student works as a member of a team to design and develop a product range or contribute to the design and production of a group product. This mirrors professional design practise where designers often work within a multidisciplinary team to develop solutions to design problems. Team members contribute their expertise, share research findings and develop viable solutions that conform to the needs and requirements outlined in a design brief.

Restrictions and parameters within design may be determined by end-user's needs, producer's requirements, social conventions and environmental concerns. This unit focuses on the impact of these factors on the design solution.

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.

Unit 3: Design, technological innovation and manufacture

The design and development of a product that meets the needs and expectations of a client or an end-user is influenced by a range of complex factors. These include client or community requirements; innovation, social and economic trends, availability of resources and technological developments in industry. Design, product development and manufacture occur in a range of settings. An industrial setting provides a marked contrast to that of a 'one-off situation' in a small 'cottage' industry or a school setting.

In this unit, students investigate a client or 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.

Unit 4: Product development, evaluation and promotion

Evaluations are made at various points of product design, development and production. When judging the suitability and viability of design ideas and options designers refer to the design brief and evaluation criteria in collaboration with a client. Designers may also base design decisions on intuition and experience.

With increased focus on environmental, economical and social viability, the impact of products throughout their life cycle can be analysed and evaluated.

Comparisons with similar products help to judge the success of a product in relation to a range of design factors and fundamentals. In this unit, students use comparative analysis and evaluation methods to make judgments about product design and development.

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 judgments about possible improvements. They promote their work by highlighting the product's features to the client and/or end-user.

Drama

The study of Drama focuses on the creation and performance of characters, narratives and stories. Students draw on a range of content and use role and expressive skills to create, embody and present dramatic works. They analyse the development of their performances

and explore the actor–audience relationship. Students develop an understanding of dramatic elements, stagecraft and theatrical conventions appropriate to performance styles from a range of cultural contexts. They view and analyse performances by professional and other drama practitioners.

The study provides students with opportunities to explore the ways in which drama represents social, political, and historical contexts, narratives and stories. Students develop an understanding of the language of drama including terminology and expressions appropriate to the context of the drama that students create, perform and analyse. Students develop an appreciation of drama as an art form through participation, criticism and aesthetic understanding.

The study of drama provides students with pathways to further studies in fields such as acting, direction, playwriting, production design, production management and studies in drama criticism.

Unit 1: Dramatic storytelling

This unit focuses on creating, presenting and analysing a devised performance that includes real or imagined characters, based on personal, cultural and/or community experiences and stories.

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

This unit also involves analysis of a student's own performance work and analysis of a performance by professional and other drama practitioners.

In this unit students use performance styles from a range of contexts associated with naturalism and non-naturalism. Descriptions of the terms such as naturalism, non-naturalism and stimulus material, dramatic elements, stagecraft, theatrical conventions, expressive skills and performance styles are provided in the Glossary.

Unit 2: Creating Australian drama

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 art work, a text and/or an icon from a contemporary or historical Australian context.

Students use a range of stimulus material in creating performance and examine performance styles from a range of cultural and historical contexts. Theatrical conventions appropriate to the selected performance styles are also explored. Student's knowledge of how dramatic elements are enhanced or manipulated through performance is further developed in this unit.

This unit also involves analysis of a student's own performance work as well as the performance of an Australian work. An Australian work might:

- be written, adapted or devised by Australian writers or theatre-makers;
- reflect aspects of the Australian identity, for example the indigenous voice, the Celtic perspective, the twentieth or twenty-first century migrant experience, the refugee experience, the urban and bush perspectives.

In this unit, students use performance styles from a range of historical, cultural and social contexts including styles associated with non-naturalism.

Descriptions of the terms such as naturalism, non-naturalism and stimulus material, dramatic elements, stagecraft, theatrical conventions, expressive skills and performance styles are provided in the Glossary.

Unit 3: Ensemble performance

This unit focuses on non-naturalistic drama from a diverse range of contemporary and/or cultural performance traditions. Non-naturalistic performance styles and associated theatrical conventions are explored in the creation, development and presentation of an ensemble performance. Collaboration to create, develop and present ensemble performance is central to this performance. Students use and manipulate dramatic elements, expressive skills and performance styles to enhance performance. They select stagecraft and theatrical conventions as appropriate to the performance. Students also document and evaluate stages involved in the creation, development and presentation of the ensemble performance.

A professional performance that incorporates non-naturalistic performance style/s and production elements selected from the prescribed *VCE Unit 3 Drama Playlist* published annually in the *VCAA Bulletin* will also be analysed.

Descriptions of terms such as naturalism, non-naturalism, stimulus material, dramatic elements, stagecraft, theatrical conventions, expressive skills and performance styles are provided in the Glossary.

Unit 4: Solo performance

This unit focuses on the use of stimulus material and resources from a variety of sources to create and develop character/s within a solo performance. Students complete two solo performances. For a short solo performance they develop practical skills of researching, creating, presenting, documenting and analysing a solo performance work. In the development of a second solo performance, they devise, rehearse and perform an extended solo performance in response to a prescribed structure published by the Victorian Curriculum and Assessment Authority. The processes involved in the creation and presentation of character/s in solo performance are analysed and evaluated.

Economics

Economic decisions taken by individuals, groups, businesses and governments have effects on the welfare of nations and regions; today these effects are increasingly global in their impact. The quality of economic decisions will substantially influence individual, national and global welfare. A major challenge facing societies in the twenty-first century is how to balance further growth of living standards and improvement in the distribution of the world's income and wealth, with protection of the environment and the maintenance of liberal democratic government. A study of economics will help students to become informed global citizens, able to discern economically and socially responsible decisions and to influence others to act likewise.

Economic decisions are about resource use in producing goods and services, and about the distribution of the proceeds of production. To understand the basis for these decisions, and their impact, requires an understanding of basic economic principles and concepts. It also requires an understanding of the influence of political, ethical, environmental and social forces on economic decision-making.

Economic events, issues and controversies are often reported in the media because they are relevant to society. Economic issues frequently influence votes in local, state and national elections. Learning about economics will assist students in their everyday lives as it helps them to be more informed citizens, consumers, workers, voters, producers, savers and investors.

Skills, as well as knowledge, play an important part in the study of economics. In particular, students develop an ability to identify, collect and process data from a range of sources, including electronic media; use the inquiry process to plan an economics investigation, analyse data and form conclusions supported by evidence; use economic reasoning, including cost/benefit analysis, to solve problems which assists them in understanding the

economy, society and environment and to clarify values and attitudes about issues affecting the economy, society and environment.

Unit 1: The Australian economy

The focus of this unit is the study of markets, economic decision-making and issues of importance to the Australian economy and its people in the twenty-first century.

Unit 2: Australia and the global economy

The focus of this unit is the study of Australia's external relationships and economic issues of importance in the global economy in the twenty-first century.

Unit 3: Economic activity and objectives

The focus of this unit is the study of economic activity in Australia and the factors that affect the achievement of the Australian Government's economic objectives.

Unit 4: Economic management

The focus of this unit is the study of the management of the Australian economy, which concentrates on budgetary/fiscal, monetary and microeconomic reform policies.

English / English as a Second Language

The English language is central to the way in which students understand, critique and appreciate their world and to the ways in which they participate socially, economically and culturally in Australian society.

The study of English encourages the development of literate individuals capable of critical and imaginative thinking, aesthetic appreciation and creativity. The mastery of the key knowledge and skills described in this study design underpins effective functioning in the contexts of study and work as well as productive participation in a democratic society in the twenty-first century.

The study design draws on interstate and international models and reflects recent developments in the study of English. Students will continue the learning established through the Victorian Essential Learning Standards (VELS) in the key discipline concepts of texts and language, and the dimensions of reading, writing, speaking and listening.

This study design will assist teachers to implement an English curriculum that is interesting and challenging for students with a wide range of expectations and aspirations. Teachers have the opportunity to select texts which will reflect the needs and interests of their students. The study of texts focuses on creating and analysing texts, understanding and interpreting texts, and moving beyond interpretation to reflection and critical analysis.

Unit 1

The focus of this unit is on the reading of a range of texts, particularly narrative and persuasive texts, in order to comprehend, appreciate and analyse the ways in which texts are constructed and interpreted. Students will develop competence and confidence in creating written, oral and multimodal texts. The term 'set text' refers to texts chosen by the school for the achievement of Outcomes 1 and 2.

Unit 2

The focus of this unit is on reading and responding to an expanded range of text types and genres in order to analyse ways in which they are constructed and interpreted, and on the development of competence and confidence in creating written, oral or multimodal texts. The term 'set text' refers to texts chosen by the school for the achievement of Outcomes 1 and 2.

Unit 3

The focus of this unit is on reading and responding both orally and in writing to a range of texts. Students analyse how the authors of texts create meaning and the different ways in which texts can be interpreted. They develop competence in creating written texts by exploring ideas suggested by their reading within the chosen Context, and the ability to explain choices they have made as authors. A list of prescribed Contexts will be published annually in the *VCAA Bulletin*.

Unit 4

The focus of this unit is on reading and responding in writing to a range of texts in order to analyse their construction and provide an interpretation. Students create written or multimodal texts suggested by their reading within the chosen Context and explain creative choices they have made as authors in relation to form, purpose, language, audience and context.

English Language

Language is central to human life. Learning about language helps us to understand ourselves and the world in which we live. Language is the cornerstone of social cohesion.

This study aims to combine learning about the nature of language in human thought and communication with learning how to use English more effectively and creatively. It is informed by the discipline of linguistics and integrates a systematic exploration of the nature of the English Language. Students develop skills in the description and analysis of a diverse range of spoken and written English texts.

A knowledge of how language functions helps develop skills useful in any field in which attention is paid explicitly to language, such as communications, communication disorders, speech and reading therapy, pre-school and primary education, foreign language and English teaching. These skills also have a profound impact upon and are central to areas such as psychology, cognitive science, computer science, and philosophy.

Unit 1: Language and communication

The focus of this unit is language and its use in communication. The use of language is an essential aspect of human behaviour, the means by which individuals relate to the world, to each other, and to the community of which they are members. This unit focuses on the nature and functions of language itself and the way language is organised so that it provides its users with the means by which they can make sense of their experience and have contact with others. It enables students to explore the informational and expressive functions of language, the nature of language as a highly elaborate system of signs, the development of language in an individual, and the relationship between speech and writing as the dominant modes of use.

Unit 2: Language change

The focus of this unit is language change. Languages are dynamic and change is an inevitable and a continual process. Engaging with texts from the past can show us how all subsystems of the language system are affected – phonetics and phonology, morphology and lexicology, syntax, discourse analysis, and semantics, and how English has altered over the centuries and how it continues to evolve today. This unit explores the concepts of change, especially within Australian English, and aims to give students insight into the what, how and why of these changes. Particular attention is paid to attitudes to language change.

Unit 3: Language in society

The focus of this unit is language in its social setting. Through language we communicate information, ideas, attitudes, prejudices and ideological stances. Language varies according to both the user and its occasion of use. There is a range of attitudes within society to the different varieties of language we use.

Language is a means of societal interaction. It is indicative of power structures both through

the choice of a particular variety of language, and through the way in which that language variety is used in processes of inclusion and exclusion.

Language is also a means of identifying and defining individual and group membership. Through it we indicate how we want others to perceive us. Language marks group boundaries, as it is used to distinguish between 'us' and 'them'.

Unit 4: Texts in their Australian contexts

The focus of this unit is texts in their contexts. Language is always encountered as text and it is in the large range of texts that much of the meaning of a culture, its values, knowledge and ideologies, are constructed. This unit provides a framework for the study of texts by looking at various dimensions of style: the grammatical and discourse structure of language; the choice and meanings of words within texts; how words are combined to convey a message; the purpose in conveying a message; and the particular context in which a message is conveyed. The aim is to describe the interrelationship between words, sentences and text to discover how they construct their message.

By considering the stylistic features used in spoken and written varieties of English, students can gain insight into the effect the speaker or writer is trying to achieve, why the speaker or writer has chosen particular stylistic features, and how the speaker or writer uses language to influence their respective audiences.

English Literature

The study of literature focuses on the enjoyment and appreciation of reading that arises from discussion, debate and the challenge of exploring the meanings of literary texts. Students reflect on their interpretations and those of others.

The study is based on the premise that meaning is derived from the relationship between the text, the context in which it was produced and the experience of life and literature the reader brings to the texts. Accordingly, the study encompasses texts that vary in form and range from past to contemporary social and cultural contexts. Students learn to understand that texts are constructions, to consider the complexity of language and to recognise the influence of contexts and form. The study of literature encourages independent and critical thinking in students' analytical and creative responses to texts, which will assist students in the workforce and in future academic study.

Unit 1

This unit focuses on the ways literary texts represent human experience and the reading practices students develop to deepen their understanding of a text. Students respond to a range of texts personally, critically and creatively. This variety of approaches to reading invites questions about the ideas and concerns of the text. While the emphasis is on students' close engagement with language to explore texts, students also inform their understanding with knowledge of the conventions associated with different forms of text, for example poetry, prose, drama and/or non-print text.

Unit 2

The focus of this unit is on students' critical and creative responses to texts. Students deepen their understanding of their responses to aspects of texts such as the style of narrative, the characters, the language and structure of the text. Students extend their exploration of the ideas and concerns of the text. They understand the ways their own culture and the cultures represented in the text can influence their interpretations and shape different meanings. Students make comparisons between texts and identify some of the relationships that exist through features such as the language, characterisation and ideas.

Unit 3

This unit focuses on the ways writers construct their work and how meaning is created for and by the reader. Students consider how the form of text (such as poetry, prose, drama, non-print or combinations of these) affects meaning and generates different expectations in readers, the ways texts represent views and values and comment on human experience, and

the social, historical and cultural contexts of literary works.

Unit 4

This unit focuses on students' creative and critical responses to texts. Students consider the context of their responses to texts as well as the concerns, the style of the language and the point of view in their re-created or adapted work.

In their responses, students develop an interpretation of a text and learn to synthesise the insights gained by their engagement with various aspects of a text into a cogent, substantiated response.

Environmental Science

Environmental Science provides the opportunity for students to understand the structure, function and diversity of natural ecosystems on this planet and evaluate the impact of human activities on them. Students examine strategies to maintain and protect the ecological health of the environment while meeting the needs and desires of human populations.

Environmental Science investigates the interactions between natural and human systems. This study examines the application of environmental science to ecologically sustainable development and environmental management. Students should understand the values and attitudes that underpin environmental decisions and reflect on effective ways for modifying behaviour of individuals and groups for positive environmental outcomes.

While undertaking this study, students will develop skills in practical scientific investigations, environmental fieldwork techniques, report writing, research and analysis.

Unit 1: The environment

This unit focuses on the environment and its components. The function of ecosystems and the interactions in and between the ecological components are investigated. The unit presents opportunities to consider the effects of natural and human-induced changes in ecosystems.

Unit 2: Monitoring the environment

This unit focuses on the characteristics of environmental indicators and their use in monitoring programmes. Environmental indicator data will be defined, collected and interpreted.

Unit 3: Ecological issues: energy and biodiversity

This unit focuses on two major ecological issues which provide challenges for the present and the future. The consequences on the atmosphere of natural and enhanced greenhouse effects, and issues of biodiversity and its significance in sustaining ecological integrity, will be examined.

Unit 4: Ecological sustainability

This unit focuses on pollution and its relationship to the health of humans and the environment. It advances further understanding of managing the environment to ensure development meets human needs while maintaining ecological integrity of the environment.

Food and Technology

Food and Technology is engaging and challenging. It enables students to develop a theoretical understanding of the relationship between food and technology, and practical skills in the application of this understanding.

The food sector is dynamic, diverse and creative. Innovative food products are continually being introduced into the marketplace in response to changing social, economic and environmental needs of society. Technology plays an important role in food product development and the way food is produced, processed, packaged and marketed.

An understanding of the links between food, food processing, nutrition, health and well-being is a high priority in contemporary society. The study of Food and Technology challenges students to make these links and provides them with the opportunities to acquire knowledge and skills to make informed choices when selecting, storing, purchasing, preparing and consuming foods that will contribute to a healthy lifestyle.

Through the study of Food and Technology, students will develop knowledge of the functional, sensory, physical and chemical properties of food and will be able to apply this knowledge when using food in a practical situation. They will develop and apply the knowledge and skills for safe and hygienic work practices and food preparation techniques. They will use the design process, critical thinking and problem-solving skills to develop food products to suit specific situations or to meet the needs of individual consumers and their lifestyles. In this process, they will develop independent and cooperative learning skills.

The study may also provide a foundation for exciting pathways to food science and technology, consumer science, home economics, education, the hospitality and food manufacturing industries, and nutrition and health studies.

Unit 1: Properties of food

In this unit students are introduced to the diverse nature of food, how to prepare it and how to store it for the best quality in terms of safety, health and aesthetics. Students study safe and hygienic food handling practices and apply these practices in the preparation of food. Food storage practices that maximise quality of raw and cooked food are also investigated.

Students discover the links between classification of foods and their properties and how their enjoyment of food is associated with different cooking methods and properties of foods. They examine changes in properties of food when different preparation and processing techniques are used. Students apply this knowledge when preparing food.

Unit 2: Planning and preparation of food

This unit provides students with the opportunity to investigate the best methods and tools and equipment to use for optimum results, and what to prepare for a range of situations. Students research, analyse and apply the most suitable food preparation and cooking methods to optimise the sensory, physical and chemical properties of food.

Students work both independently and as a member of a team to research and implement solutions to a design brief, and to respond to exciting challenges of preparing food for a range of contexts. These contexts include nutritional considerations, cultural beliefs, and resource access and availabilities.

Unit 3: Food preparation, processing and food controls

This unit requires students to analyse the functions of the natural components of key foods and apply this information in the preparation of foods. Students will investigate cooking techniques and justify the use of the best techniques for key foods. They develop an understanding of food processing techniques to prevent spoilage in industrial and domestic settings, and will also preserve food using some of these techniques.

Students develop an understanding of food safety in Australia by investigating the causes of food poisoning and food spoilage, and the relevant regulations. Students apply safe work practices while preparing food.

Students write a design plan developed from a design brief that they devise. In the design plan, they will apply their knowledge about key foods, properties of food, tools, equipment, cooking techniques and preservation techniques best suited to a particular context. They make decisions and choices related to their understanding of the brief. In developing this plan, students establish a timeline to complete the set of food items to meet the requirements of the brief in Unit.

Unit 4: Food product development and emerging trends

In this unit students work independently to complete the challenge of implementation of the design plan they established in Unit 3. In completing this task, students apply food safety and hygiene guidelines and evaluate the product planning and processes in the plan.

Students examine food product development, and research and analyse factors that have contributed to product development. They investigate the process of product development, including packaging, packaging systems and marketing.

Students investigate emerging trends in product development, including societal pressures to improve health, technological developments, and environmental considerations.

Geography

Geography is the study of where geographical features are located and why they are there, and what makes one place different from another, and how and why these differences matter. It looks at the interaction between human activities and natural processes, and develops understanding of the distribution of human and natural phenomena on or near the surface of the Earth from a spatial perspective.

The purpose of this study is to develop in students an ability to see meaning in the arrangement of natural and human phenomena in space; to see and understand the interrelationships between people, places and environments; and to use geographic skills and apply spatial perspectives to describe and interpret patterns on the surface of the Earth and the processes that created them.

This study investigates a diversity of themes, environments and places at different scales (local, regional, national, international and global) and in different contexts, particularly in Australia. It explores the patterns and processes of physical geography and their interaction with aspects of human geography. Geographers use a number of spatial concepts as tools to help them to investigate, interpret and explain these patterns. The spatial concepts provide a unique conceptual structure and framework of ideas for geographic investigations of phenomena.

This study design focuses on the following spatial concepts: location, scale, distance, distribution, region and movement, spatial change over time, spatial association and spatial interaction. These spatial concepts are all interconnected and to some degree overlap.

The study of Geography addresses the following questions: What is there? Where is it? Why is it there? What are the effects of it being there? How is it changing over time? Should it be like this? What will it be like in the future?

Through studying Geography, students develop knowledge and skills that enable them to understand the complex interactions of their world from a spatial perspective. They learn to participate effectively as global citizens in the sustainable use and management of the world's resources.

Unit 1: Natural environments

This unit investigates the geographic characteristics of natural environments and landforms and the natural processes that shape and change the Earth's surface. It investigates how the interactions between natural processes and human activities can also change natural environments.

The world's physical environments are composed of four natural systems: atmosphere, biosphere, lithosphere, hydrosphere, which are fundamental to the operation of all interactions within the environment. There are few places in the world where only natural processes operate.

Human activities interact with natural processes, each affecting the other. The nature of change caused by the interaction between natural processes and human activities varies at a range of scales, over space and over time.

Students must investigate **at least two** natural environments in each area of study. The natural environments selected for investigation may be the same in each area of study. Each environment selected for investigation must focus on physical geography at two different scales.

Unit 2: Human environments

This unit investigates the characteristics of rural and urban environments which are developed by human activities and their interactions with natural environments. Rural and urban environments vary significantly from place to place and across a variety of scales. Rural and urban environments are significant because they are the locations where people live. Their presence creates settlements which vary in size and complexity from individual farm houses to small villages, regional towns, large metropolitan cities and mega cities.

Rural environments are those produced by human activities such as farming, forestry, tourism, mining, fishing and rural settlements. Urban environments are those produced by human activities created by housing, work and leisure pursuits. The nature of change in human environments varies across a range of scales over space and over time.

Rural and urban environments are dynamic. They can be changed in the long or short term by advances in technology, individual and organisational decisions, as well as by natural and human processes and events. Decisions that affect the management and the sustainability of rural and urban environments and the distribution of rural and urban activities are made by governments, organisations and individuals.

Students must investigate at least two human environments in each area of study. The environments selected for investigation may be the same in each area of study, but one of the environments must be a rural environment and one an urban environment; one must be from Australia and one must be from another country. Each environment selected for investigation must focus on human geography at two different scales.

Unit 3: Regional resources

This unit investigates the characteristics of resources and the concept of region. A resource is anything which occurs naturally or is created by humans provided that people use it to satisfy a need or want. Resources found within regions mean different things to different people over place and time. A study of resources is about the processes and relationships operating in the past, in the present, and those which will operate in the future. Regions are areas of various scales that have characteristics and features that distinguish them from other areas according to the elements used to define them. The use and management of resources is dynamic and changes spatially over time in response to the interactions between human activities, natural processes and the legislative processes that humans put into place. Social, historical, environmental, economic and political factors can be used to predict and plan for future policies and strategies to ensure the sustainability of the available resources.

Governments and other organisations often use the concept of region for planning purposes when determining allocation of resources and development of policies. Although the process of globalisation is influencing the world at a rapid rate, a regional perspective may give identity and help to make sense of such processes.

The availability and utilisation of water resources influences settlement patterns, infrastructure development and decision making in many Australian regions. Problems of supply and debates about the water resources of rural and urban communities mirror processes that are happening elsewhere on the Earth. There are competing demands for water resources within and between regions at local, national and international scales.

Students must investigate a regional resource and a local resource in Australia. The regional resource will be water in the Murray-Darling Basin region. Students will use fieldwork to investigate a local resource.

Unit 4: Global perspectives

This unit investigates the geographic characteristics of global phenomena and responses to them. Global phenomena are major natural or human events, processes or activities. Such phenomena are distributed globally and possess the capacity to affect the globe or significant parts of the globe and require more than a local or national response.

Human population studies are significant to understanding the challenges facing our globalised world. Spatial variations in the distribution, composition and growth of human populations are related to the nature of places. A global perspective is a viewpoint or policy designed to guide future action by people or organisations to address the effects of global phenomena. Phenomena such as El Niño, migration, rapid communications technology, earthquake damage, genetically modified crops or globally changing patterns of investment and industrialisation, shared ocean and atmosphere resources, pandemics and other 'borderless' phenomena play important roles in shaping community, environments and landscape change.

Governments, organisations, groups and individuals respond to global phenomena in different ways. The type of response is affected by social, economic, historical and political considerations, resource access and distribution, and the nature and scale of the event or process. Policy developed to deal with a global phenomena and its effects results in the formation of a global perspective. This unit investigates the distribution patterns of selected global phenomena. It considers the causes, dimensions and impact of global changes and analyses policies and strategies, including those that promote sustainability, to enable a better world in the future.

Students must investigate two global phenomena in each area of study, one of which must be human population.

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. Students 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.

Health is a dynamic quality that is influenced by a complex interrelationship between individuals and their physical, social, economic and political environments. This interrelationship is reflected in a social view of health which sees health as being created in the settings where people live and work. It recognises the need for personal skills development, the importance of empowering communities to take action to promote health, the creation of social and physical environments that are supportive of health, an awareness of the impacts on health of public policies and the need for health services to be oriented towards the prevention of ill health and health promotion.

Development is about change and is a lifelong process that begins at conception and continues until we die. Developmental changes are cumulative; development that occurs in the future is dependent upon development occurring in the past.

By understanding development and the inherited factors that determine development and the environmental influences that shape development, students are better equipped to critically

evaluate policies and programmes designed to promote health and development and understand choices that are consistent with better health outcomes.

The study of Health and Human Development is also based on the premise that health and development needs to be promoted at an individual level, and within group and community settings at national and international levels to truly maximise developmental potential. This underpins the structure of the four units of Health and Human Development.

Unit 1: Youth health and development

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 inherited and environmental factors that influence the physical, social, emotional and intellectual changes that occur at this stage of life.

Unit 2: Individual and community health and development

In this unit there is a focus on 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: Nutrition, health and development

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. Nutrition is an important determinant of optimal health and developmental outcomes and the evidence that supports food intake as a protective factor against a number of diseases across the lifespan is explored. Government and non-government initiatives designed to promote health and development are also considered.

Unit 4: Global health and development

This unit focuses on the developmental changes that occur as individuals move through the lifespan as well as an exploration of inherited factors that determine developmental potential. 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.

History – Twentieth Century, Australian, Revolutions

History is the practice of understanding and making meaning of the past. It is also the study of the problems of establishing and representing that meaning. It is a synthesising discipline which draws upon most elements of knowledge and human experience. Students learn about their historical past, their shared history and the people, ideas and events that have created present societies and cultures.

The study builds a conceptual and historical framework within which students can develop an understanding of the issues of their own time and place. It seeks to extend students' cultural, economic, social and political understanding while developing analytical skills and using imagination.

Historical understanding is communicated through written, oral and visual forms. The analysis of written documentary evidence such as letters, diaries, court proceedings and government records has long been the foundation of the study. Visual evidence, however, often pre-dates written material, for example rock art, mosaics, and scrolls. More recently, there have been many film and television documentaries presenting and interpreting historical events. It is therefore important in the study of history for students to develop the skills necessary to analyse visual, oral and written records.

The study of history draws links between contemporary society and its history, in terms of its social and political institutions, and language. An understanding of the link between accounts of the past, and the values and interests of the time in which the accounts were produced, is also a feature of the study of history.

VCE History is relevant to students with a wide range of expectations, including those who wish to pursue formal study at tertiary level, as well as providing valuable knowledge and skills for an understanding of the underpinnings of contemporary society.

Unit 1: Twentieth century history 1900–1945

The first half of the twentieth century was marked by significant change. In this unit students consider the way that societies responded to these changes and how they affected people's lives.

Unit 2: Twentieth century history 1945–2000

This unit considers some of the major themes and principal events of post–World War II history, and the ways in which individuals and communities responded to the political, economic, social and technological developments in domestic, regional and international settings.

Unit 3: Australian history – imagining Australia

This unit focuses on the European experience in Australia from the early years of the Port Phillip District (later Victoria) through the nineteenth century and up to the eve of World War I. Students are introduced to the visions and ideas which underpinned colonial society and will examine the ways in which they changed over the colonial period. The latter part of the unit focuses on the nature of Australian society around the turn of the twentieth century.

Unit 4: Australian history

This unit continues the exploration of the ideas and visions underpinning Australian society by offering students the opportunity to examine a time when three visions were under threat. The emphasis is on the ways in which Australians responded to particular threats and the impact of their experiences on change and social cohesion. Students will also study changing Australian attitudes in relation to a number of issues that have been debated in the latter decades of the twentieth century.

Units 3 and 4: Revolutions

Revolutions are the great disjuncture of modern times and mark deliberate attempts at new directions. They share the common aim of breaking with the past by destroying the regimes and societies that engender them and embarking on a programme of political and social transformation. As processes of dramatically accelerated social change, revolutions have a profound impact on the country in which they occur, as well as important international repercussions.

Because revolutions involve destruction and construction, dispossession and liberation, they polarise society and unleash civil war and counter-revolution, making the survival and

consolidation of the revolution the principal concern of the revolutionary state. In defence of the revolution, under attack from within and without, revolutionary governments often deploy armed force and institute policies of terror and repression. The process of revolution concludes when a point of stability has been reached and a viable revolutionary settlement made.

Revolutions in history have been reconsidered and debated by historians. The study of a revolution should consider differing perspectives and the reasons why different groups have made different judgments of the history of the revolution. The focus of this will be The French Revolution and The Russian Revolution.

Revolutionary ideas, leaders, movements and events

The periods for this area of study are:

- French Revolution 1781 to 4 August 1789 (Necker's *Compte Rendu* to the 4 August 1789)
- Russian Revolution 1905 to October 1917 (Bloody Sunday to the Bolshevik Revolution)

Historians have put forward different theories about the causes of revolution; for example, inadequate response to structural change, political divisions, the failure of rising expectations, the loss of authority, the erosion of public confidence in the old order. Questions have been raised such as: Why did social tensions and ideological conflicts increase in the pre-revolutionary period? Why could social tensions and ideological conflicts not be contained or constrained within the traditional order? What events or circumstances eroded confidence in the government or weakened the capacity of the ruling class to meet challenges to its authority?

Historians place differing emphasis on the role of ideas, leaders and movements in the development of the revolution. Debate occurs about the role of the work of the Philosophes in the French Revolution and the role of Marxism in the Russian Revolution. Similar debate occurs around the role of various individuals such as Samuel Adams, Vladimir Lenin and Mao Zedong in bringing about the success or failure of the revolution. Other historians focus more on circumstances and longer-term developments as the main contributors to revolution and determinants of the course it would take.

Industry and Enterprise

The central theme of Industry and Enterprise is work and its place in Australian industry and society. The study recognises 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. A key feature of the study is the requirement that students undertake work outside the classroom in order to develop a range of lifelong and work-related skills.

Throughout this study, the term lifelong and work-related skills is used to refer to a range of skills and competencies seen as being important for entry-level employees to develop. Lifelong and work-related skills include, but are not limited to, key competencies, employability skills and enterprise skills.

For the purposes of this study, work is considered to be an activity involving productive effort and may be in the context of paid or unpaid employment or student-initiated enterprise. Industry includes a broad range of business or social organisations involved in the same type of productive activity. Enterprise involves creating and maintaining a project, and need not necessarily involve profit making. It encourages the recognition of a significant and innovative opportunity, the appropriate management of risk-taking and the mobilisation of resources to enable the successful completion of a project.

Unit 1: Workplace participation

This unit introduces students to the range of settings in which work occurs in Australia. In order to prepare for effective participation in the workplace, emphasis is placed on the skills and competencies required for effective and rewarding participation in the workplace. This

unit also examines the changing nature of work, the concept of career development and lifelong learning. Future career pathways and occupations are investigated. In particular, work placement is undertaken (Outcome 2), and work-related issues investigated in a selected workplace. The development of lifelong and work-related skills is an integral part of this unit.

Unit 2: Enterprise and leadership in Australian industry

This unit focuses on work in an industry setting. Exploration of the changing nature of work at a broader industry level is encouraged. Issues to be examined include the importance of enterprise, leadership and innovation in industry, the growth and decline of industries in Australia, major stakeholders in industry, entry-level skills and career paths within industries. Case studies explore some of the challenges currently faced by workplaces in selected industries. These challenges include globalisation, technological change, restructuring and enterprise and innovation. The application of enterprise and leadership in the workplace is explored and further developed through work placement (Outcome 2). The development of lifelong and work-related skills is an integral part of this unit.

Unit 3: Enterprise culture in Australian industry

The future of Australian industry depends on the development of a successful enterprise culture. This unit investigates the concept of enterprise culture and the role of leadership and teamwork in shaping attitudes, skills and behaviours within an enterprise. These concepts are explored and further developed through work placement (Outcome 1). This unit also examines the role and impact of innovation, quality, technology and workplace flexibility in creating cultural change in Australian industry.

Unit 4: Change in Australian industry

This unit investigates how pressures and opportunities for change and enterprising responses are transforming the Australian workplace. It focuses on evaluating the importance of training and lifelong learning and employability skills within this context of change.

Information Technology

This study focuses on the processing of data and the management of information and information systems to meet a range of individual and societal purposes.

The rapid pace of development in information and communications technology (ICT) is having a major influence on virtually all aspects of society. Not only does ICT provide the capacity to change how tasks and activities are undertaken, but it also creates new opportunities in work, study, recreation, and in relationships. Social relations and cultural values influence the way ICT is used.

While it is important that students extend their use of ICT as a tool to assist with work, study, recreation and in relationships (which builds on their compulsory education experiences), the study of Information Technology focuses on the capacities, scope and limitations of hardware and software, and their interactions to carry out specialised applications.

With appropriate knowledge and skills, students will be equipped to make use of ICT and make informed personal and workplace choices about future developments and directions in this exciting and challenging field. Innovative approaches to the potential uses of ICT are developed, and students are encouraged to orient themselves towards the future, with an awareness of the implications of these uses.

The study of Information Technology may provide pathways to further studies in IT and to careers in ICT-based areas. It may also prepare students for programmes that require either an IT-related subject or for a vast range of careers that require efficient and effective use of ICT.

Structure

The study is made up of six units:

Unit 1: IT in action

Unit 2: IT pathways

Units 3 and 4: IT applications

Units 3 and 4: Software development

Unit 1: IT in action

This unit focuses on how individuals use, and can be affected by, information and communications technology (ICT) in their daily lives. Students acquire and apply a range of knowledge and skills to create information that persuades, educates or entertains. They also explore how their lives are affected by ICT and strategies for influencing how ICT is applied. Students develop an understanding of the role technology plays in inputting, processing, storing and communicating data and information.

In each outcome of this unit students use software to create solutions and information products. For Outcomes 1 and 3, students use a software tool selected from these types of software: web authoring and multimedia authoring. Additional types of software can be used, such as image editing software, for example, Macromedia Flash and Adobe PhotoShop, but they are not mandatory. For Outcome 2, students use database management software to solve information problems.

Unit 2: IT pathways

This unit focuses on how individuals and organisations, such as sporting clubs, charitable institutions, small businesses and government agencies use ICT. Students acquire and apply a range of knowledge and skills to create solutions and information products that meet personal and clients' needs. They also examine how networked information systems are used within organisations.

Students develop and apply knowledge and skills in using two different software tools. One tool must be a programming or scripting language that enables students to manipulate data, for example, Javascript, Actionscript, Visual Basic, Java, php. The other software tool should be selected from these types of software: web authoring and multimedia authoring, and, where appropriate, be supported by image editing software, such as Macromedia Flash and Adobe PhotoShop. Students also explore career pathways that involve using knowledge and skills associated with programming or scripting languages.

Working collaboratively in teams is an important and effective problem-solving strategy, and this strategy is applied when students solve information problems for clients in the community.

In each outcome of this unit, students use software tools. For Outcome 1, the software tool should be a programming or scripting language. For Outcome 2, students use software that supports the creation and presentation of animated images, such as multimedia authoring and web authoring. Image editing software may be used in conjunction with these software types. For Outcome 3, students use one or both of the software tools studied for this unit.

Units 3 and 4: IT applications

Unit 3: IT applications

Units 3 and 4 are designed to be taken as a sequence. In Unit 3, students use web authoring and database management software to solve information problems. In Unit 4, they use web authoring or multimedia authoring software as well as spreadsheet software to solve information problems. Additional software can be used to support the development of solutions and information products, for example, image editing software, such as Macromedia Flash and Adobe PhotoShop.

Unit 3 focuses on how individuals or organisations use ICT to solve information problems and to participate actively in a society where use of ICT is commonplace. Students acquire and apply knowledge and skills in solving information problems to assist in decision-making and in managing tasks and timelines. The solutions and information products should meet the

specific needs of organisations such as sporting clubs, newsagencies, charities, or the needs of individuals. Students also explore how the capabilities of networked information systems support teams of workers or learners to solve problems and share knowledge.

For Outcome 1 of this unit, students must use database management software to solve information problems, and for Outcome 2, students use web authoring software to create prototypes of websites.

Unit 4: IT applications

This unit focuses on how ICT is used by organisations to solve ongoing information problems and in the strategies to protect the integrity of data and security of information. Students develop and acquire knowledge and skills in creating solutions and information products using spreadsheet software that can be re-used in the future with new sets of data. When solving information problems, students apply all of the problem-solving stages: analysis, design, development, testing, documentation, implementation and evaluation. Students apply their ICT knowledge and skills to record their decision-making strategies when solving information problems and to reflect on the effectiveness of these strategies.

In this unit students explore how organisations manage the storage, communication and disposal of data and information in order to minimise threats to the integrity of data and security of information, and to optimise efficient information handling.

Students are required to use two types of software for Outcome 1: spreadsheet and web authoring or multimedia authoring.

Units 3 and 4: Software development

Unit 3: Software development

Units 3 and 4 are designed to be taken as a sequence. Unit 3 focuses on the techniques and procedures for determining the ability of networked information systems to meet organisational needs and on how the development of purpose-designed software, using a programming language, helps fulfill these needs. Students explore the roles and functions of networked information systems, and the types of networks. They apply three phases of the waterfall model of the systems development life cycle (SDLC): analysis, design and development. They use this concept as the methodology for making changes to networked information systems.

For Outcome 1 in this unit, students analyse the operations of networked information systems, and explore design options in order to produce the physical design specifications for modified or new networked information systems. In Outcome 2, the development phase of the SDLC is realised by students designing and coding software modules, using a programming language. Students are not expected to fulfill entire software design specifications; only modules need to be developed. Typically the stages of software development involve analysing, designing, developing, testing, documenting, implementing and evaluating. In this unit students are required to engage in the stages of designing, developing and testing. Students also explore how the development of programmes is influenced by legal obligations and ethical considerations. In Unit 4 students are required to undertake all stages of software development.

The programming language selected will be studied for both Unit 3 and Unit 4. The language must be a general-purpose language.

Unit 4: Software development

This unit focuses on techniques, procedures and strategies to develop, implement and evaluate proposed networked information systems. Students explore the technical, human, procedural, economic and management factors that need to be considered when undertaking

these phases of the systems development life cycle (SDLC). The development phase is realised through the creation of software solutions using the programming language studied in Unit 3.

For Outcome 1 of this unit students continue to study the programming language selected in Unit 3. They are required to engage in all stages of software development: analysis, design, development, testing, documentation, implementation and evaluation. Details of information system objectives and the needs of the users are provided in design briefs. For Outcome 2, students continue their study of the SDLC by examining in detail the phases of development, implementation and evaluation.

International Politics

In the twenty-first century, political decisions and actions taken by individuals, groups, organisations and governments are increasingly global in their impact. International Politics will enable students to understand and reflect on contemporary national and international political issues, problems and events, and the forces that shape them. The study offers students the opportunity to engage with key political, social and economic issues, to become more informed citizens, voters and participants in their local, national and international communities.

The study includes the development of a conceptual framework within which students develop an understanding of the exercise of national and international political power. Consideration is given to the values and motivations that drive the exercise of political power, and the ways in which this power can benefit or undermine the welfare of individuals, groups and states.

Students will develop the knowledge and skills to identify the influences and events that shape national and international relationships. They investigate and analyse information from a range of sources, to clarify and inform their conclusions about issues which affect their lives, and which have ramifications for the lives of future generations.

The study of International Politics prepares students for further formal study at tertiary level or in vocational education and training settings, as well as broadens students' knowledge of, and ability to participate in, key global issues.

Structure

The study is made up of six units:

Unit 1: Politics, power and people

Unit 2: The global picture

Units 3 and 4: National politics

Unit 3: Democracy in the making

Unit 4: The challenge of power

Units 3 and 4: International studies

Unit 3: Global issues and conflicts

Unit 4: International relations

Each unit deals with specific content and is designed to enable students to achieve a set of outcomes. Each outcome is described in terms of key knowledge and skills.

Unit 1: Politics, power and people

This unit introduces students to the study of politics by considering key concepts and ideas including representation, citizenship, power and democracy. Students analyse the exercise of political power by comparing a democratic with a non-democratic system. Consideration is given to mechanisms that legitimise the exercise of political power and the ways in which this legitimacy can be undermined.

Students consider the ideologies that underpin political structures and interactions, and the

ways in which ideologies affect the exercise of political power. Students also consider the nature and context of leadership through the study of a significant post-World War II political leader.

Unit 2: The global picture

This unit focuses on the nature of contemporary international relations and the events that shaped them. Students develop an understanding of key terms and concepts, and consider factors which influence international relationships and the role of states. Students also investigate the way a selected state (or group of states) is able to exercise power internationally and a contemporary international conflict or area of instability.

Units 3 and 4: National politics

National politics offers students the opportunity to critically examine the Australian political system and compare the political systems of Australia and the United States. Students examine the nature of the two systems and the key domestic and foreign policy issues and challenges facing them.

Unit 3: Democracy in the making

Central to politics is the exercise of power by individuals, groups and institutions. This unit provides an overview of Australia's 'Washminster' system of government with its influences from the United Kingdom's and the United States' systems of government. Students undertake a comparative study of the political systems of Australia and the United States by considering values, ideologies, structures and institutions. This comparative study provides a context for Area of Study 2, which focuses on aspects of the Australian system that could be reformed to better fulfill democratic values. Students explore possible reforms to the Constitution, parliament, the electoral system, the federal system and the relationship between the three branches of government.

Unit 4: The challenge of power

Elections provide political parties with the opportunity to articulate policies to the electorate. Despite the fact that governments may be given an electoral mandate to implement policy, the realities of politics make policy-making a difficult and uncertain process. This unit considers the influences on Australian federal policy-making and implementation. It also considers contemporary challenges to Australian domestic and foreign policy. In terms of the policy-making process, foreign policy is unique. In contrast to domestic policy, little needs to be legitimised through legislation. Students consider the various influences on federal policy-making, including the executive and legislative branches, the bureaucracy, public opinion, the media, social movements and interest groups. Students investigate a specific Australian domestic policy issue and the ways in which it is presented by the media. Students also analyse the key elements of Australia's foreign policy and factors which affect its formulation and implementation.

Units 3 and 4: International studies

International studies explores contemporary international issues.

Unit 3: Global issues and conflict

This unit investigates recent global politics and the nature of conflict since the end of the Cold War. The unit begins with an examination of the concepts of globalisation and internationalism and the increasing interdependence of people and societies across a range of economic, cultural and security matters. Students explore increasingly complex notions of national interest, sovereignty, autonomy and independence. They undertake a study of the nature of conflict in a post-Cold War world no longer divided into two ideological blocs. They examine the changed nature of the conflicts based upon tensions which may be religious, ethnic, economic or nationalist. Many of these conflicts have been fought within the new context of global terrorist networks.

Unit 4: International relations

While internationalism and globalisation have had a significant impact on the Asia-Pacific region, this unit focuses primarily on the interactions between states which remain the

dominant form of political organisation. The unit begins with a study of the concepts of national interest and power and the way states use power in the Asia-Pacific region. Australia's position in the region, and the world, and the way in which it has asserted its national interest is then investigated.

Legal Studies

Legal Studies provides students with an analytical evaluation of the processes of law-making and the methods of dispute resolution. Students are able to develop an understanding of the impact our legal system has upon the lives of citizens and the implications of legal decisions on the Australian society. This study will also assist in the development of students' knowledge of their basic legal rights and responsibilities.

The course provides an insight into the legal heritage which has shaped, and continues to shape, the development of Australian society. Students are encouraged to examine the dynamic nature of our lawmaking institutions and procedures, and explore how our legal system endeavours to be all inclusive, thus enabling our law to reflect the changing values of our society.

Students are encouraged to analyse the traditional and contemporary workings of the Australian legal system. By comparing elements of this system with international structures and procedures, students are able to gain an appreciation of the Australian system and its capacity to achieve and maintain social cohesion.

Skills, as well as knowledge, play an important part in the study of Legal Studies. In particular, students develop an ability to identify, collect and process data from a range of sources; use the inquiry process to develop legal reasoning; apply legal reasoning to real or hypothetical cases and develop informed opinions.

Unit 1: Criminal law and justice

This unit explores the distinction between legal and non-legal rules, the Victorian court hierarchy, and the process of making laws through parliament. It focuses on the role of police, their powers of investigation, the procedures of a criminal trial and an examination of possible sanctions that are available to the criminal courts. In addition, students explore the concepts of fairness and justice within the criminal justice system.

Unit 2: Civil law and the law in focus

This unit focuses on the effective resolution of civil disputes. It looks at the processes and procedures involved in civil litigation and the possible defences to civil claims within our legal system available to enforce the civil rights of our citizens. As well as the judicial procedure to resolve civil disputes, the unit also investigates the alternative avenues of dispute resolution and their effectiveness. This unit provides students with the opportunity to explore specific areas of law and to analyse contemporary legal issues.

Unit 3: Law-making

The purpose of this unit is to enable students to develop an understanding of the institutions that determine laws and the processes by which laws are made. It considers reasons why laws are necessary and the impact of the Commonwealth Constitution on the operation of the legal system. Students undertake an evaluation of the strengths and weaknesses of the law-making bodies and the processes used to influence change and reform.

Unit 4: Dispute resolution

This unit explores the function and jurisdiction of the courts, tribunals and alternative avenues of dispute resolution with a view to comparing and evaluating the operation of the various dispute resolution methods. Students develop an understanding of criminal and civil pre-trial and trial processes and procedures which operate within the Victorian legal system. The current operation of the jury system in criminal and civil trials will be examined and students will also review the operation of the adversary system, giving consideration to its strengths

and weaknesses. Students will compare features of the adversary and inquisitorial systems of dispute resolution. In this unit students evaluate the effective operation of the Victorian legal system and make recommendations for possible improvement and reform.

LOTE – German

The study of a language other than English contributes to the overall education of students, most particularly in the area of communication, but also in the areas of cross-cultural understanding, intercultural learning, cognitive development, literacy and general knowledge. It provides access to the culture of communities which use the language and promotes understanding of different attitudes and values within the wider Australian community and beyond.

The ability to communicate in another language, in conjunction with other skills, may provide opportunities for employment in the fields of interpreting, social services, ethnic affairs, the tourism and hospitality industries, international relations, the arts, commerce, technology, science, education etc.

Students demonstrate the achievement of the outcomes based on progressive development of skills in listening, speaking, reading and writing through activities and tasks organised around the areas of study. The areas of study in Units 1–4 focus on the areas of study for language, which are made up of the themes and topics, text types, kinds of writing, vocabulary and grammar. They are common to all four units of the study and are published in the study design. They are tailored to the specific qualities of the language being studied.

The three outcomes for Unit 1 are:

Outcome 1

On completion of this unit the student should be able to establish and maintain a spoken or written exchange related to personal areas of experience.

Outcome 2

On completion of this unit the student should be able to listen to, read and obtain information from spoken and written texts.

Outcome 3

On completion of this unit the student should be able to produce a personal response to a text focusing on real or imaginary experience.

The three outcomes for Unit 2 are:

Outcome 1

On completion of this unit the student should be able to participate in a spoken or written exchange related to making arrangements and completing transactions.

Outcome 2

On completion of this unit the student should be able to listen to, read, and extract and use information and ideas from spoken and written texts.

Outcome 3

On completion of this unit the student should be able to give expression to real or imaginary experience in spoken or written form.

The three outcomes for Unit 3 are:

Outcome 1

On completion of this unit the student should be able to express ideas through the production of original texts.

Outcome 2

On completion of this unit the student should be able to analyse and use information from spoken texts.

Outcome 3

On completion of this unit the student should be able to exchange information, opinions and experiences.

The two outcomes for Unit 4 are:**Outcome 1**

On completion of this unit the student should be able to analyse and use information from written texts.

Outcome 2

On completion of this unit the student should be able to respond critically to spoken and written texts which reflect aspects of the language and culture of German-speaking communities.

LOTE – Japanese

The study of a language other than English contributes to the overall education of students, most particularly in the area of communication, but also in the areas of cross-cultural understanding, intercultural learning, cognitive development, literacy and general knowledge. It provides access to the culture of communities which use the language and promotes understanding of different attitudes and values within the wider Australian community and beyond.

The ability to communicate in another language, in conjunction with other skills, may provide opportunities for employment in the fields of interpreting, social services, ethnic affairs, the tourism and hospitality industries, international relations, the arts, commerce, technology, science, education etc.

Students demonstrate the achievement of the outcomes based on progressive development of skills in listening, speaking, reading and writing through activities and tasks organised around the areas of study. The areas of study in Units 1–4 focus on the areas of study for language, which are made up of the themes and topics, text types, kinds of writing, vocabulary and grammar. They are common to all four units of the study and are published in the study design. They are tailored to the specific qualities of the language being studied.

The three outcomes for Unit 1 are:**Outcome 1**

On completion of this unit the student should be able to establish and maintain a spoken or written exchange related to personal areas of experience.

Outcome 2

On completion of this unit the student should be able to listen to, read and obtain information from spoken and written texts.

Outcome 3

On completion of this unit the student should be able to produce a personal response to a text focusing on real or imaginary experience.

The three outcomes for Unit 2 are:**Outcome 1**

On completion of this unit the student should be able to participate in a spoken or written exchange related to making arrangements and completing transactions.

Outcome 2

On completion of this unit the student should be able to listen to, read, and extract and use information and ideas from spoken and written texts.

Outcome 3

On completion of this unit the student should be able to give expression to real or imaginary experience in spoken or written form.

The three outcomes for Unit 3 are:**Outcome 1**

On completion of this unit the student should be able to express ideas through the production of original texts.

Outcome 2

On completion of this unit the student should be able to analyse and use information from spoken texts.

Outcome 3

On completion of this unit the student should be able to exchange information, opinions and experiences.

The two outcomes for Unit 4 are:**Outcome 1**

On completion of this unit the student should be able to analyse and use information from written texts.

Outcome 2

On completion of this unit the student should be able to respond critically to spoken and written texts which reflect aspects of the language and culture of Japanese-speaking communities.

Mathematics

(Please read in conjunction with diagram page 76)

Foundation 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 precise. It also provides a means by which people can understand and manage their environment. Essential mathematical activities include calculating and computing, abstracting, conjecturing, proving, applying, investigating, modeling, and problem posing and solving.

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 a technological society, and confidence in making effecting use of mathematical ideas, techniques and processes.

Entry

There are no prerequisites for entry to Foundation Mathematics Units 1 and 2.

Units 1 and 2

Foundation Mathematics provides for the continuing mathematical development of students entering VCE, who need mathematical skills to support their other VCE subjects, including VET studies, and who do not intend to undertake Unit 3 and 4 studies in VCE Mathematics in the following year. Provision of this course is intended to complement General Mathematics and Mathematical Methods. It is specifically designed for those students who are not provided for in these two courses. Students completing this course would need to undertake further mathematical study in order to attempt Further Mathematics Units 3 and 4.

In Foundation Mathematics there is a strong emphasis on using mathematics in practical contexts relating to everyday life, recreation, work and study. Students are encouraged to use appropriate technology in all areas of their study. These units will be especially useful for

students undertaking VET studies.

The areas of study for Units 1 and 2 of Foundation Mathematics are 'Space, shape and design', 'Patterns and number', 'Handling data' and 'Measurement'.

At the end of Unit 1, students will be expected to have covered material equivalent to two areas of study. All areas of study will be completed over the two units. Unit 2 can be used to complement Unit 1 in development of the course material. Some courses may be based on the completion of an area of study in its entirety before proceeding to other areas of study. Other courses may consist of an ongoing treatment of all areas of study throughout Units 1 and 2. It is likely that a contextual approach will lead to the development of implementations that draw on material from all areas of study in each semester.

Further 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 precise. It also provides a means by which people can understand and manage their environment. Essential mathematical activities include calculating and computing, abstracting, conjecturing, proving, applying, investigating, modeling, and problem posing and solving.

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 a technological society, and confidence in making effecting use of mathematical ideas, techniques and processes.

Entry

The assumed knowledge and skills for Further Mathematics Units 3 and 4 are drawn from General Mathematics Units 1 and 2. Students who have done only Mathematical Methods Units 1 and 2 or only Mathematical Methods Computer Algebra System (CAS) Units 1 and 2 will also have had access to knowledge and skills to undertake Further Mathematics.

Units 3 and 4: Further Mathematics

Further Mathematics consists of a compulsory core area of study 'Data analysis' and then a selection of three from six modules in the 'Applications' area of study. Unit 3 comprises the 'Data analysis' area of study which incorporates a statistical application task, and one of the selected modules from the 'Applications' area of study. Unit 4 comprises the two other selected modules from the 'Applications' area of study.

Assumed knowledge and skills for the 'Data analysis' area of study are contained in the topics: Univariate data, Bivariate data, Linear graphs and modeling, and Linear relations and equations from General Mathematics Units 1 and 2.

The appropriate use of technology to support and develop the teaching and learning of mathematics is to be incorporated throughout the units. This will include the use of some of the following technologies for various areas of study or topics: graphics calculators, spreadsheets, graphing packages, statistical analysis systems, dynamic geometry systems, and computer algebra systems. In particular, students are encouraged to use graphics calculators, spreadsheets or statistical software in 'Data analysis', dynamic geometry systems in 'Geometry and trigonometry' and graphics calculators, graphing packages or computer algebra systems in the remaining areas of study, both in the learning of new material and the application of this material in a variety of different contexts.

There are two areas of study:

1. Data analysis – core material
2. Applications – module material:
 - Module 1: Number patterns
 - Module 2: Geometry and trigonometry
 - Module 3: Graphs and relations

Module 4: Business-related mathematics
Module 5: Networks and decision mathematics
Module 6: Matrices

General 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 precise. It also provides a means by which people can understand and manage their environment. Essential mathematical activities include calculating and computing, abstracting, conjecturing, proving, applying, investigating, modeling, and problem posing and solving.

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 a technological society, and confidence in making effecting use of mathematical ideas, techniques and processes.

Entry

There are no prerequisites for entry to General Mathematics Units 1 and 2.

Units 1 and 2

General Mathematics provides courses of study for a broad range of students and may be implemented in a number of ways. Some students will not study Mathematics beyond Units 1 and 2, while others will intend to study Further Mathematics Units 3 and 4. Others will also be studying Mathematics Methods Units 1 and 2 or Mathematics Methods Computer Algebra System (CAS) Units 1 and 2 and intend to study Mathematical Methods Units 3 and 4, or Mathematical Methods (CAS) Units 3 and 4 and, in some cases, Specialist Mathematics Units 3 and 4 as well.

The areas of study for Unit 1 and Unit 2 of General Mathematics are 'Arithmetic', 'Data analysis and simulation', 'Algebra', 'Graphs of linear and non-linear relations', 'Decision and business mathematics' and 'Geometry and trigonometry'.

Units 1 and 2 are to be constructed to suit the range of students entering the study by selecting material from the six areas of study using the following rules:

- for each unit, material covers four or more topics selected from at least three different areas of study;
- courses intended to provide preparation for study at the Units 3 and 4 level should include selection of material from areas of study which provide a suitable background for these studies;
- selected material from an area of study provide a clear progression in key knowledge and key skills from Unit 1 to Unit 2.

The appropriate use of technology to support and develop the teaching and learning of mathematics is to be incorporated throughout the course. This will include the use of some of the following technologies for various areas of study or topics: graphics calculators, spreadsheets, graphing packages, dynamic geometry systems, statistical analysis systems, and computer algebra systems.

At Kambrya College students choosing General Maths at Year 11 (Units 1 & 2) may be able to choose between a General stream and a Specialist stream. Please indicate which of these you prefer to study on the Subject Selection form.

Mathematical Methods (CAS)

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 precise. It also provides a means by which people can

understand and manage their environment. Essential mathematical activities include calculating and computing, abstracting, conjecturing, proving, applying, investigating, modeling, and problem posing and solving.

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 a technological society, and confidence in making effective use of mathematical ideas, techniques and processes.

Entry

There are no prerequisites for entry to Mathematical Methods Units 1 and 2. However, students attempting Mathematical Methods are expected to have a sound background in number, algebra, function, and probability. Some additional preparatory work will be advisable for any student who is undertaking Unit 2 without completing Unit 1.

Mathematical Methods Units 1 and 2 contain assumed knowledge and skills for Mathematical Methods Units 3 and 4. Students must undertake Unit 3 prior to undertaking Unit 4.

Units 1 and 2: Mathematical Methods (CAS)

Mathematical Methods Units 1 and 2 are designed as preparation for Mathematical Methods Units 3 and 4.

The areas of study for Unit 1 are 'Functions and graphs', 'Algebra', 'Rates of change and calculus' and 'Probability'. At the end of Unit 1, students will be expected to have covered the material outlined in each area of study, with the exception of 'Algebra' which should be seen as extending across Units 1 and 2. This material should be presented so that there is a balanced and progressive development of skills and knowledge from each of the four areas of study with connections among and across the areas of study being developed consistently throughout both Unit 1 and Unit 2.

Students are expected to be able to apply techniques, routines and processes involving arithmetic, algebraic manipulation, equation solving, graph sketching, differentiation and integration with and without the use of technology, as applicable. Students should have facility with relevant mental and by hand approaches in simple cases.

The appropriate use of technology to support and develop the teaching and learning of mathematics is to be incorporated throughout the unit. Students are encouraged to use graphics calculators, spreadsheets, statistical software, graphing packages or computer algebra systems as applicable across the areas of study, both in the learning of new material and the application of this material in a variety of different contexts.

Familiarity with determining the equation of a straight line from combinations of sufficient information about points on the line or the gradient of the line and familiarity with pythagoras theorem and its application to finding the distance between two points is assumed. Students should also be familiar with quadratic and exponential functions, algebra and graphs, and basic concepts of probability.

The areas of study for Unit 2 are 'Functions and graphs', 'Algebra', 'Rates of change and calculus', and 'Probability'. At the end of Unit 2, students will be expected to have covered the material outlined in each area of study. Material from the 'Functions and graphs', 'Algebra', 'Rates of change and calculus', and 'Probability' areas of study should be organised so that there is a clear progression of knowledge and skills from Unit 1 to Unit 2 in each area of study.

Students are expected to be able to apply techniques, routines and processes involving rational and real arithmetic, algebraic manipulation, equation solving, graph sketching, differentiation and integration with and without the use of technology, as applicable. Students should be familiar with relevant mental and by hand approaches in simple cases.

The appropriate use of technology to support and develop the teaching and learning of mathematics, and in related assessments, is to be incorporated throughout the unit. Students are encouraged to use graphics calculators, spreadsheets, statistical software, graphing

packages or computer algebra systems as applicable across the areas of study both in the learning of new material and the application of this material in a variety of different contexts.

Units 3 and 4: Mathematical Methods (CAS)

Mathematical Methods Units 3 and 4 consists of the following areas of study: 'Functions and graphs', 'Calculus', 'Algebra' and 'Probability' which must be covered in progression from Unit 3 to Unit 4, with an appropriate selection of content for each of Unit 3 and Unit 4. Assumed knowledge and skills for Mathematical Methods Units 3 and 4 are contained in Mathematical Methods Units 1 and 2, and these will be drawn on, as applicable in the development of related content from the areas of study, and key knowledge and skills for the outcomes of Mathematical Methods Units 3 and 4.

In Unit 3, a study of Mathematical Methods would typically include a selection of content from the areas of study 'Functions and graphs', 'Algebra' and applications of derivatives and differentiation to identifying and analysing key features of the functions described in these areas of study and their graphs. In Unit 4, this selection would typically consist of remaining content from the areas of study: 'Functions and graphs', 'Calculus', 'Algebra' and the study of random variables and discrete and continuous probability distributions and their application. For Unit 4, the content from the 'Calculus' area of study would be likely to 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 simple applications of this content.

The selection of content from the areas of study should be constructed so that there is a development in the complexity and sophistication of problem types and mathematical processes used (modeling, transformations, graph sketching and equation solving) in application to contexts related to these areas of study. There should be a clear progression of knowledge and skills from Unit 3 to Unit 4 in each area of study.

Students are expected to be able to apply techniques, routines and processes involving rational and real arithmetic, algebraic manipulation, equation solving, graph sketching, differentiation and integration with and without the use of technology, as applicable. Students should be familiar with relevant mental and by hand approaches in simple cases.

The appropriate use of technology to support and develop the teaching and learning of mathematics, and in related assessments, is to be incorporated throughout the units. This will include the use of some of the following technologies for various areas of study or topics: graphics calculators, spreadsheets, graphing packages, statistical analysis systems, and computer algebra systems. Students are encouraged to use graphics calculators, spreadsheets, statistical software, graphing packages or computer algebra systems as applicable across the areas of study.

Specialist 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 precise. It also provides a means by which people can understand and manage their environment. Essential mathematical activities include calculating and computing, abstracting, conjecturing, proving, applying, investigating, modeling, and problem posing and solving.

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 a technological society, and confidence in making effecting use of mathematical ideas, techniques and processes.

Entry

Enrolment in Specialist Mathematics Units 3 and 4 assumes a current enrolment in, or previous completion of, Mathematical Methods Units 3 and 4 or Mathematical Methods Computer Algebra System (CAS) Units 3 and 4.

Units 3 and 4: Specialist Mathematics

Specialist Mathematics consists of the following areas of study: 'Functions, relations and graphs', 'Algebra', 'Calculus', 'Vectors' and 'Mechanics'. The development of course content should highlight mathematical structure and proof. All of this material must be covered in progression from Unit 3 to Unit 4, with an appropriate selection of content for each of Unit 3 and Unit 4. The selection of materials for Unit 3 and Unit 4 should be constructed so that there is a balanced and progressive development of knowledge and skills with connections among the areas of study being developed as appropriate across Unit 3 and Unit 4. Specialist Mathematics Units 3 and 4 assumes concurrent or previous study of Mathematical Methods Units 3 and 4 or Mathematical Methods (CAS) Units 3 and 4. They contain assumed knowledge and skills for Specialist Mathematics, which will be drawn on as applicable in the development of content from the areas of study and key knowledge and skills for the outcomes.

In Unit 3 a study of Specialist Mathematics would typically include content from 'Functions, relations and graphs' and a selection of material from the 'Algebra', 'Calculus' and 'Vectors' areas of study. In Unit 4 this selection would typically consist of the remaining content from the 'Algebra', 'Calculus', and 'Vectors' areas of study and the content from the 'Mechanics' area of study.

Students are expected to be able to apply techniques, routines and processes, involving rational, real and complex arithmetic, algebraic manipulation, diagrams and geometric constructions, solving equations, graph sketching, differentiation and integration related to the areas of study, as applicable, both with and without the use of technology. The appropriate use of technology to support and develop the teaching and learning of mathematics is to be incorporated throughout the units. This will include the use of some of the following technologies for various areas of study or topics: graphics calculators, spreadsheets, graphing packages, dynamic geometry systems and computer algebra systems. In particular, students are encouraged to use graphics calculators and other technologies both in the learning of new material and the application of this material in a variety of different contexts.

Familiarity with sequence and series notation and related simple applications, the use of sine and cosine rules in non-right-angled triangles and the following mathematics is assumed:

- the solution of triangles in two-dimensional situations;
- the sum of the interior angles of a triangle is 180° ;
- the sum of the exterior angles of a convex polygon is 360° ;
- corresponding angles of lines cut by a transversal are equal if, and only if, the lines are parallel;
- alternate angles of lines cut by a transversal are equal if, and only if, the lines are parallel;
- opposite angles of a parallelogram are equal;
- opposite sides of a parallelogram are equal in length;
- the base angles of an isosceles triangle are equal;
- the line joining the vertex to the midpoint of the base of an isosceles triangle is perpendicular to the base;
- the perpendicular bisector of the base of an isosceles triangle passes through the opposite vertex;
- the angle subtended by an arc at the centre of a circle is twice the angle subtended by the same arc at the circumference;
- the angle in a semicircle is a right angle;
- angles in the same segment of a circle are equal;
- the sum of the opposite angles of a cyclic quadrilateral is 180° ;
- an exterior angle of a cyclic quadrilateral and the interior opposite angle are equal;
- the two tangents to a circle from an exterior point are equal in length;
- a tangent to a circle is perpendicular to the radius to the point of contact;
- the angle between a tangent to a circle and a chord through the point of contact is equal

to the angle in the alternate segment.

Media

VCE Media provides students with the opportunity to develop critical and creative knowledge and skills. Media texts, technologies and processes are considered from various perspectives including their structure and features, their industry production and distribution context, audience reception and the impact of media in society. This aspect of the study is integrated with the individual and collaborative design and production of media representations and products.

The media have a significant impact on people's lives. They influence the way people spend their time, help shape the way they perceive themselves and others, and play a crucial role in the creation of personal, social, cultural and national identity. The media entertain, educate, inform and provide channels of communication. This takes place within the broader context of industrial organisation, political and market structures, professional practices, creative processes, traditional and contemporary technologies, statutory regulation and the need to attract and maintain audiences. All these considerations determine the nature of media products.

Media products are representations of social, personal and cultural reality. The media represent the world in a way which is different from direct experience. These representations have been constructed through a process of selection, using codes and conventions. From this perspective media products can be examined as the expression of creative ideas, specific symbolic languages and the ways in which the media comment on culture and values and reflect the society in which they were created.

The study of media includes:

- media forms including
 - audiovisual media (film, television, radio, video, photography)
 - print-based media (newspapers, magazines and related publications)
 - digital media technologies (the Internet, computer games and interactive multimedia)
- media and cross media processes and developments such as advertising, news and current affairs production, popular music, popular culture, cyberculture and virtual worlds, convergence and hybridisation, information dissemination and retrieval technologies
- the media and its interrelationship with society and culture.

The Media study is relevant to students with a wide range of expectations, including those who wish to pursue further formal study at tertiary level or in vocational education and training settings, as well as providing valuable knowledge and skills for participation in contemporary society.

Whilst Kambrya has a supply of digital cameras and film cameras for student use, access can be limited at times. Students who have their own equipment and are able to use this for their projects both inside and outside school hours are encouraged to do so for their own advantage.

Unit 1

The purpose of this unit is to enable students to develop an understanding of the relationship between the media, technology and the representations present in media

forms. The unit involves the study of the implications of media technology for the individual 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, and the creative and cultural implications of new media technologies.

Unit 2

This unit will enable students to develop their understanding of the specialist production stages and roles within the collaborative organisation of media production. Students develop practical skills through undertaking assigned roles during their participation in specific stages of a media production and analyse issues concerning the stages and roles in the media production process. Students also 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

This unit provides students with opportunities to develop their understanding of production and story elements and to recognise the role and significance of narrative organisation in fictional film, radio or television programmes. In this context students also consider how production and story elements structure narratives to engage an audience. Students also develop practical skills through undertaking exercises related to aspects of the design and production process. They design a media production for a specific media form with the relevant specifications presented as a written planning document with visual representations.

Unit 4

This unit allows students to further develop practical skills in the production of media products and to realise a production design. Organisational and creative skills are refined and applied throughout this process. In this unit students also analyse the ways in which media texts are shaped by social values and the influence of social values in the representations and structure of a media text. The role and influence of the media is also critically analysed in this unit.

Music

VCE Music offers students opportunities to approach the study of music as a performer, as a creator of music works or arrangements and as a person who studies music works from diverse cultural and historical traditions. Students can specialise in one or more approaches to the study of music, depending on their VCE program overall and the post-VCE pathways they may be interested in following. Through a study of the music of others and experimentation in their own music making, students are able to demonstrate and discuss meaning in music. Each unit of Music includes:

- music making: the study of ways of making music through developing skills in playing one or a number of instruments or singing, performing in solo and group contexts, composing, arranging and/or improvising;
- listening and aural perception: developing skills in listening, aural comprehension and making a critical response to music by analysing the characteristics of music of a wide range of styles and geographical locations;
- music language: the elements of music, compositional devices, and ways of preserving a record of works; and

- the study of music works and approaches to music making in diverse historical and cultural contexts: researching and considering information and scenarios surrounding the creation of musical compositions and performances, and perceiving and understanding trends and patterns in the way music styles emerge from different cultures, geographical locations and eras.

Structure

The study includes ten units:

- Music Performance Units 1 and 2
- Music Group performance Units 3 and 4
- Music Solo performance Units 3 and 4
- Music Styles Units 1, 2, 3 and 4

Students may enrol in all units or select specific combinations of units that cater for their interests and intended pathways. Examples of combinations of units appropriate for specific groups of students are listed in the study design.

Entry

There are no prerequisites for entry to Units 1, 2 and 3. Students must undertake Unit 3 prior to undertaking Unit 4. Units 1 to 4 are designed to a standard equivalent to the final two years of secondary education. All VCE studies are benchmarked against comparable national and international curriculum. To undertake Units 3 and 4 Music Group performance or Music Solo performance, students should have about three years experience prior to Year 11 on a musical instrument or in voice.

Units 1–4: Music Performance

Music Performance develops intellectual, aesthetic and cultural understanding of the value and importance of music in solo and group settings. As soloists and members of groups, students develop skills in preparing programs of works. They learn about and apply musicianship as they create music and interpret and analyse solo and ensemble works in a range of styles.

In the performance of music, students develop their skills on a main instrument or voice. They research and apply in performance relevant knowledge of performing, the rich heritage of music, theory of music and sociocultural influences on the music studied. Students experiment with interpretation and strike an appropriate balance, considering historical performance conventions, contemporary performance conventions and personal interpretation as they perform a wide range of styles and characters in music.

Details on the selection of instrument or voice and on the selection of works for study are described in the *VCE Music Study Design*.

Units 1 and 2

Music Performance Units 1 and 2 allow students to elect to focus more on either group performance or solo performance or to develop skills in both contexts in an evenly weighted course of study.

Unit 1: Music Performance

This unit focuses on performance in solo and group contexts, studying approaches to performance and performing, and developing skills in aural comprehension. Students present a solo and a group performance, demonstrate prepared technical work and perform previously unseen music.

Outcome 1

On completion of this unit the student should be able to perform a program/s of contrasting solo and group works, selected solo technical work and work that demonstrates unprepared performance skills.

Outcome 2

On completion of this unit the student should be able to analyse and evaluate selected influences on works being prepared for performance and approaches that can be used to

optimise performance of those works.

Outcome 3

On completion of this unit the student should be able to describe how instruments are used in combination using selected elements of music, and recognise, sing and write scales, intervals, chords and rhythms, using conventions in music notation.

Unit 2: Music Performance

This unit further develops skills in practical music and performance in solo and group contexts.

Students present a prepared program/s of solo and group works, demonstrate prepared technical work, perform previously unseen music and develop skills in aural comprehension.

Selected works are analysed to enhance performance interpretation and to understand their context, influences, characteristics and styles. This unit also focuses on music language that is relevant to performance and used to analyse, compose or improvise music.

Outcome 1

On completion of this unit the student should be able to demonstrate developing performance and presentation skills in performing a program of contrasting solo and group works, selected solo technical work and work that demonstrates unprepared performance.

Outcome 2

On completion of this unit the student should be able to discuss the contextual issues and describe the characteristics and styles represented in the works, the structure of the works, and expressive features relevant to performance of works selected for performance or other works in a similar style.

Outcome 3

On completion of this unit the student should be able to recognise, sing and write scales, intervals and chords; transcribe rhythms and melodies; use conventions in music notation; and describe how instruments are used in combination.

Outcome 4

On completion of this unit the student should be able to devise a composition or improvisation that uses music language drawn from analysis of selected works being prepared for performance.

Units 3 and 4: Music Group performance

Students who elect Music Group performance Units 3 and 4 choose any instrument/s to practise and perform in a group context a range of styles demonstrating both authentic and individual interpretation. Students are assessed individually on their contribution to the group's performance. Units 3 and 4 Music Group performance focuses on performing as a member of a group. Technical, creative and interpretation skills are developed for the presentation of a performance of music in a range of styles.

Unit 3: Music Group performance

This unit focuses on developing performance skills in interpreting styles and applying a range of technical and artistic techniques to present a program of works in an ensemble context. The unit aims to develop aural perception and critical listening skills used by ensemble performers to prepare and present performances of music in a range of styles. The unit also analyses strategies and techniques for preparing and presenting ensemble performances.

Outcome 1

On completion of this unit the student should be able to present and perform works from a range of musical styles with technical accuracy and control, and offer creative interpretations demonstrating stylistic awareness in an ensemble context.

Outcome 2

On completion of this unit the student should be able to analyse a variety of elements affecting their ensemble performances and selectively implement strategies to develop

and present effective performances.

Outcome 3

On completion of this unit the student should be able to recognise and describe the structure and sound of selected characteristics of music.

Unit 4: Music Group performance

This unit focuses on further developing and refining performance skills in interpreting styles and applying a range of technical and artistic techniques to present a program of works in an ensemble context. Aural comprehension and critical listening skills used by ensemble performers to prepare and present performances of music in a range of styles are also further developed. Students study part-writing or improvisation techniques and create either an arrangement or an improvisation.

Outcome 1

On completion of this unit the student should be able to present and perform works in an ensemble context demonstrating technical accuracy and control, and creative interpretation across a range of styles.

Outcome 2

On completion of this unit the student should be able to use part-writing techniques to create an arrangement or prepare and present an improvisation, and analyse the techniques and ideas used in creating the arrangement or improvisation.

Outcome 3

On completion of this unit the student should be able to describe and evaluate the structure and sound of selected characteristics of music.

Units 3 and 4: Music Solo performance

Students who select Music Solo performance are primarily concerned with recreating music represented as published notated solo works. Units 3 and 4 Music Solo performance focus on the preparation and presentation of performances in solo and ensemble contexts, demonstrating through performance an understanding of interpretation and authenticity.

Unit 3: Music Solo performance

This unit focuses on the preparation and presentation of solo works. Students use performance techniques to develop understanding of interpretation of a range of styles. Music performance skills are broadened by ensemble performance, solo technical work and unprepared performance. Music language knowledge, aural comprehension skills and understanding of the structure and characteristics of an ensemble work are also developed.

Outcome 1

On completion of this unit the student should be able to interpret and perform, accurately and artistically, selected solo works in a range of styles and/or characters.

Outcome 2

On completion of this unit the student should be able to perform a study, technical work and exercises on their main instrument, which will enhance the performance of the selected solo and/or ensemble works, and works that demonstrate unprepared performance skills.

Outcome 3

On completion of this unit the student should be able to contribute to interpretation in a performance of a prepared ensemble program.

Outcome 4

On completion of this unit the student should be able to write and describe selected characteristics of music and analyse similarities and differences between interpretations in performance of excerpts from ensemble works.

Unit 4: Music Solo performance

This unit focuses on the preparation and presentation of a solo program of works, demonstrating through performance an understanding of interpretation. Music performance skills are extended by development of technical work in ensemble

performance and unprepared performance skills, and studies in aural comprehension. Understanding and recognition of musical characteristics of an ensemble work are further developed.

Outcome 1

On completion of this unit the student should be able to interpret and perform accurately, artistically and in ways that project musical intentions, selected solo works in a range of styles and/or characters.

Outcome 2

On completion of this unit the student should be able to perform technical work and exercises on their main instrument, which will enhance the performance of the selected solo and/or ensemble works, and works that demonstrate unprepared performance skills.

Outcome 3

On completion of this unit the student should be able to contribute to interpretation in a performance of a prepared ensemble program.

Outcome 4

On completion of this unit the student should be able to write and describe selected characteristics of music, and analyse similarities and differences between interpretations in performance of excerpts from ensemble works.

Units 1–4: Music Styles

In VCE Music Styles Units 1–4, students listen, analyse and respond critically and creatively to music from a range of geographical, social and cultural contexts. Students use a range of practices, including those associated with listening, analysis and creativity, to develop their understanding of ways music can be designed, created and performed.

Through consideration of the elements of music and compositional devices, students develop understandings about the characteristics of works. They make critical responses to specific aspects of works through subjective responses which are justified by objective, analytical information from the music.

Music making in these units focuses on using a range of creative processes to compose, arrange and/or improvise responses to works by other music creators, and to create short original works.

Details on the selection of works for study are described in the *VCE Music Study Design*.

Unit 1: Music Styles

This unit focuses on a broad survey of music from different styles, traditions, times and places. Students will analyse a range of works, including music from a non-western style or tradition. They will learn about the characteristics of the elements of music and consider ways that music creators use elements of music and compositional devices to make works. Students will compose, arrange and/or improvise brief creative exercises in response to the practices of other composers.

Outcome 1

On completion of this unit the student should be able to describe characteristics of selected music in a range of music styles through aural analysis.

Outcome 2

On completion of this unit the student should be able to identify and discuss characteristics and context of selected works in three different music styles and/or traditions.

Outcome 3

On completion of this unit the student should be able to compose, arrange and/or improvise musical exercises in response to ways other music creators have used elements of music and compositional devices.

Unit 2: Music Styles

This unit focuses on ways that music is used in multidisciplinary art works that combine music and non-musical elements. These works are in many different forms and are represented in diverse historical and cultural contexts. In many of these works, music is

used to create effects and elicit responses, often being used to advance a narrative, provide commentary on a narrative or to communicate a mood or feeling. Students analyse ways that music can be used to create effects or elicit responses, both as discrete works and in works that combine music and other elements. They also create music for an art work that combines music and other elements. The form of this work is selected by the student.

Outcome 1

On completion of this unit the student should be able to analyse ways in which elements of music and compositional devices are used to create effects and elicit responses.

Outcome 2

On completion of this unit the student should be able to describe treatment of elements of music and use of compositional devices in works that combine music and non-musical features.

Outcome 3

On completion of this unit the student should be able to create music for an art work that combines music and non-musical features.

Unit 3: Music Styles

This unit focuses on the study of works from at least two different music styles and traditions, including a work or collection of minor works, by an Australian composer. Students develop understanding of similarities and differences in the practice of music creators from different times and/or places. They develop skills in making critical responses to works from different music styles and traditions, including skills in identifying different approaches to using the compositional devices of contrast, repetition and variation. Students develop knowledge about the characteristics of the style of selected works and understanding of the ways that contextual issues can influence works. They make creative responses based on ways of treating elements of music and using compositional devices.

Outcome 1

On completion of this unit the student should be able to make critical responses to music in a range of styles and instrumental and vocal combinations.

Outcome 2

On completion of this unit the student should be able to discuss the organisation and context of works in differing music styles.

Outcome 3

On completion of this unit the student should be able to make creative responses and describe the process used to create the responses.

Unit 4: Music Styles

This unit focuses on a study of music excerpts from a range of styles and traditions. Students listen and make critical responses to works and analyse the organisation and context of works. They also use creative processes to compose, arrange and/or improvise a short work.

Outcome 1

On completion of this unit the student should be able to make critical responses to music in a range of styles and instrumental and vocal combinations.

Outcome 2

On completion of this unit the student should be able to analyse the treatment of elements of music and use of compositional devices in the works selected for study, evaluate contextual issues associated with the works, and compare the use of repetition and variation in the works.

Outcome 3

On completion of this unit the student should be able to create a short work that includes at least one compositional device of contrast, repetition and/or variation, and explain the creative processes used.

Outdoor and Environmental Studies

Outdoor and Environmental Studies is a study of the ways humans interact with and relate to natural environments. The study is directed towards enabling students to make critically informed comment on questions of environmental sustainability and to understand the importance of environmental health, particularly in local contexts.

In this study both passive and active outdoor activities provide the means for students to develop experiential knowledge of natural environments. Such knowledge is then enhanced through theoretical study of natural environments from perspectives of environmental history, ecology and the social studies of human–nature relationships. The blend of direct practical experience of natural environments with other more theoretical ways of knowing, enables informed understanding of human–nature relationships.

Human relationships with the natural environment, different understandings of nature and motivations for interacting with natural environments are considered. The study also focuses on human impacts on natural environments and nature’s impact on humans, with a particular focus on outdoor recreation. Ecological, historical and social contexts of relationships between humans and natural environments are investigated as well as use of natural environments and the need to balance outdoor experiences and conservation.

Outdoor and Environmental Studies is relevant to students with a wide range of expectations, including those who wish to pursue further formal study at tertiary level or in vocational education and training settings, as well as providing valuable knowledge and skills for participation in contemporary society.

At Kambrya College, Units 3 & 4 will only be offered to Year 11 students to minimise disruption from the practical activities to their other studies in Year 12. Please see Ms B Roff for more information.

Unit 3: Relationships with natural environments

The focus of this unit is the ecological, historical and social context of relationships between humans and natural environments in Australia. The impact of these relationships on natural environments is examined by reflecting on the changing nature of human interactions and relationships with, and perceptions of, the natural environment in Australia since human habitation.

The unit also considers the impact of these natural environments on humans as expressed through contemporary relationships, the media and behaviour in the outdoors. The dynamic nature of relationships between humans and their environment and the factors involved in shaping these relationships are also examined.

Unit 4: The future of human–nature interactions

This unit focuses on the sustainable use and management of natural environments. It examines the contemporary state of environments in Australia, considers the importance of the maintenance of natural environments and examines the capacity of the natural environment to support the future needs of the world’s human population.

The emphasis in this unit is on the need to develop a balance between human needs and the conservation of natural environments. Students consider the skills needed to be environmentally responsible citizens in the context of their lives. They investigate current policies and management strategies for achieving and maintaining healthy environments, and the actions that can be undertaken to achieve and maintain healthy and sustainable environments in contemporary Australian society.

Philosophy

Philosophy provides students with the opportunity to read and understand some of the powerful ideas that have shaped our culture. This course introduces students to methods of philosophical argument and analysis, and their application to contemporary issues. The study also focuses on philosophers and philosophical ideas at different stages in history.

Philosophy grapples with some of the most profound questions, such as: What is the nature of reality? Is it possible to attain absolute certainty about anything? Are right and wrong simply matters of culture? Is it rational to have religious beliefs?

Doing philosophy is about developing the ability to clarify concepts, analyse problems and construct reasonable, coherent arguments. Philosophy is intellectually challenging. The learning established in the Victorian Essential Learning Standards (VELS) in the domains of the Humanities and Thinking Processes provides a strong foundation for VCE Philosophy.

Importantly, philosophy demands independent thinking, and develops independent reasoning skills which are highly transferable. Studies in philosophy complement courses across the VCE, interrogating underlying premises and connections between related fields. The key knowledge and skills fostered by philosophy also provide excellent preparation for any future career, whether in science or law, business or the arts. Experts in any field will inevitably confront philosophical questions.

VCE Philosophy is a challenging and stimulating study which nurtures curiosity, problem-solving skills, open-mindedness and intellectual rigour, and equips students with the rational discernment to analyse and contribute to a range of twenty-first century debates.

Entry

There are no prerequisites for entry to Units 1, 2 and 3. Students must undertake Unit 3 prior to undertaking Unit 4.

Unit 1: Existence, knowledge and reasoning

What is the nature of reality? How can we achieve certain knowledge? These are some of the questions which 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 problems through active, guided investigation, and critical discussion of two key areas of philosophy: epistemology and metaphysics. The emphasis is on philosophical inquiry – ‘doing philosophy’ – and hence the study and practice of the distinctive nature of philosophical thinking, including techniques of logic, are central to this unit. As students learn to think philosophically, appropriate examples of philosophical viewpoints and arguments, both contemporary and historical, should be 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.

Unit 2: Ethics and philosophical investigation

This unit engages students in philosophical investigation and critical discussion of two key areas of philosophy, developing their abilities to analyse the reasoning of others and to formulate logical responses to philosophical questions. Students apply philosophical methods as they analyse problems, develop independent ideas, and explain and defend their views in philosophical exchanges with others, evaluating viewpoints and arguments. Students also apply their skills of reasoning to philosophical analysis of contemporary debates. Students explore basic principles of morality, assessing ethical arguments according to standards of logic and consistency, and uncovering the assumptions about values which underpin ethical viewpoints. There is broad scope to apply philosophical methods to everyday, personal ethical dilemmas as well as to issues debated in the media, including the most significant challenges faced by contemporary societies.

The second area of study focuses on another significant topic in philosophy, to be chosen from Aesthetics, Philosophy of religion, Political philosophy or Other traditions of thought.

Unit 3: The good life

This unit considers the perennial question of what it is for a human to live well. What is the nature of happiness? What is the role of pleasure in the good life? What does the good life have to do with being morally decent to other people? The areas of study cover two different periods in which questions such as these have been at the forefront of discussion. Texts by both ancient and modern philosophers have had a significant impact on contemporary western ideas about the good life. Students critically compare the viewpoints and arguments in set texts from both these periods to their own views on how we should live, to contemporary

experience, and to ideas about the good life presented in a range of other sources.

Unit 4: Mind, science and knowledge

This unit explores two areas of contemporary philosophical debate and their historical development. It involves the study and evaluation of viewpoints and arguments in these debates that occur in the set texts, and the relationship between the contemporary and historical arguments. The first area of study looks at a topic from metaphysics: What is the mind? The second considers a topic from epistemology: Does science provide us with knowledge? Since it is by using our minds as well as our senses that we are capable of acquiring knowledge, and since philosophy suggests that what we can know will influence what we think the mind is, these two questions are interrelated.

Physical Education

Physical Education examines the biological, physiological, psychological, social and cultural influences on performance and participation in physical activity. Physical Education focuses on the complex interrelationship between motor learning and psychological, biomechanical, physiological and sociological factors that influence physical performances, together with the wider social attitudes to and understanding of physical activity.

A theoretical and practical approach towards physical activity is taken in this study. It provides the means by which theory and practice are integrated. Participation in physical activity and development of performance skills provide opportunities for students to reflect on factors that affect performance and participation in physical activity, as well as improve their own performance.

This study design is relevant to students with a wide range of expectations, including those who wish to pursue further formal study at tertiary level or in vocational education and training settings. The study prepares students for such fields as human movement, nursing or physiotherapy, as well as providing valuable knowledge and skills for participating in their own sporting and physical activity pursuits.

Unit 1: Learning and improving skill

This unit looks at a range of factors that influence learning and improving physical skills and the role of the coach in making this happen. The ways in which a coach influences his or her athletes can have a significant effect on their performance, and the methods and approaches that the coach puts into practice will impact on the individual athlete in different ways. By studying various sports psychology concepts such as arousal and anxiety, and the effects these can have on performance, students will be able to apply these psychological principles to the sporting arena.

Students will also focus on general principles that are common to analysing physical performance and learning physical skills, and the biomechanical principles of movement involved in these skills. The unit approaches the biomechanics of physical skills from the perspective of improving physical performance. Students use practical activities to enhance the theoretical understanding of factors involved in learning and improving skill.

Unit 2: The active body

This unit introduces the students to an understanding of physical activity, including the relationships between body systems and physical activity, the place of physical activity in contributing to well being in students' own lives as well as within the wider community, and the classification of physical activity in terms of type and experience. Such knowledge is important to student understanding and is best delivered through a variety of practical activities.

The students will look at a range of factors that influence performance in physical activity. It is recognised that regular participation in physical activity is important for the health of individuals and the community. Students will investigate how the patterns of physical activity vary across the lifespan, including the physical, social and emotional benefits of participation in physical activity. A theoretical model, the Stages of Change, will be used to understand engagement

with physical activity.

Unit 3: Physiological and participatory perspectives of physical activity

This unit introduces students to an understanding of physical activity from a physiological perspective. In particular, the contribution of energy systems to performance in physical activity is explored, as well as the health benefits to be gained from participation in regular physical activity. The underlying physiological requirements of an activity being used for health or for fitness are the same.

There are many factors that influence an individual to initially begin and then continue on with some form of regular physical activity. In this unit, students study and apply various models to identify strategies that will be effective in promoting participation in some form of regular activity.

Unit 4: Enhancing physical performance

Improvements in physical performance, in particular fitness, depend on the ability of the individual or coach to acquire, apply and evaluate knowledge and understanding about training. Exercise physiology is concerned with individual responses and adaptations through exercise. Students experience a variety of practical activities involving a range of training methods and fitness activities. Students learn to accurately assess the particular energy and fitness needs of the sport or activity for which the athlete is training, through analysis of data collected from a game or activity.

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 understand our place in the Universe.

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 wide range of expectations, including students who are aiming for medical, engineering, technological and science-based careers.

Structure

The study is made up of four units. Each unit contains two prescribed areas of study and a third area of study to be selected from the list of detailed studies.

Unit 1: two prescribed areas of study: Wave-like properties of light; Nuclear and radioactivity physics; and a third area of study to be chosen from one of three detailed studies: Astronomy, Medical physics, or Energy from the nucleus.

Unit 2: two prescribed areas of study: Movement; Electricity; and a third area of study to be chosen from one of three detailed studies: Astrophysics, Investigations: Aerospace, or Investigations: Alternative energy sources.

Unit 3: two prescribed areas of study: Motion in one and two dimensions; Electronics and photonics; and a third area of study to be chosen from one of three detailed studies: Einstein's special relativity, Investigating materials and their use in structures, or Further electronics.

Unit 4: two prescribed areas of study: Electric power, Interactions of light and matter; and a third area of study to be chosen from one of three detailed studies: Synchrotron and its applications, Photonics, or Sound.

Psychology

Psychology is the study of the nature and development of mind and behaviour in both humans and animals, including the biological structures and processes that underpin and sustain both. Students can develop an understanding of themselves and their relationships with others and their society through the study of psychology.

Psychology includes the study of human behaviour from biological, cognitive and social perspectives. A variety of thinking and research approaches used in psychology are introduced to provide a broad perspective of psychology as a science. Ethical principles are introduced and incorporated into the research investigations students undertake.

Unit 1

This unit introduces students to the scientific study of psychology as the investigation into human behaviour and the mental processes that determine it; including perception, cognition and emotion. Students learn about the use of theories, models and controlled observations to describe and explain human behaviour.

The focus of this unit is an introduction to the scientific foundation of psychology. In this context, human behaviour is examined in social situations where certain behaviours are seen to be a consequence of environmental processes. Individual development of cognitive and perceptual abilities is also explored.

Unit 2

In this unit students learn about different methods and models that describe and explain human behaviour.

This unit focuses on internal physical, chemical and biological processes that inform behaviour. This context is based on the understanding of neuronal structures and the nervous system at the basic level.

Methods of studying the differences in behaviour between people are evaluated.

The study of individual behaviour in social situations is explored where behaviours can be influenced by attitudes resulting from environmental influences. Measurement tools applied to studies of attitude are investigated.

Unit 3

This unit focuses on the brain and the nervous system as a whole structure and investigates their role in affecting human behaviour. Brain research methods are examined and different approaches of psychology are integrated in a study of visual perception and states of consciousness. These approaches are used to explain behaviour in terms of internal physical and biological processes.

Research methods are integrated within the different approaches to psychology and students learn to make evaluations of the appropriateness of each model. Research studies are used to illustrate the application of statistical measures to the development of models and theories of psychology. Consideration of ethical principles in the conduct of psychological research and practice is included.

Unit 4

In this unit students study cognitive psychological methods through the concepts of memory and learning. The concept of behaviour is understood in terms of mental processing of information.

Research methods continue to be integrated within the different methodological approaches to psychology. Students apply these methods to different studies and make evaluations of the appropriateness of each model. Research studies are used to illustrate the application of statistical procedures to the development of models and theories of psychology. The application and understanding of ethical principles in the conduct of psychological research and practice is extended as students complete a research investigation.

Sociology

Sociology is a modern discipline that provides insights into social change, our identities and social relations. Like most other academic disciplines, however, there is not one sociology, but many different sociologies or theories, and each of these offer different ways of seeing and knowing the world.

One benefit of studying sociology is that it encourages us to become aware and to think about the everyday things we usually take for granted. Sociologists ask questions like: Why do we act in the ways we do? What assumptions am I making and why do I assume that? Why, for example, do we dress, eat and generally live in the ways we do? Why do we see a particular group or phenomenon in the ways we do? Students will be encouraged to question their assumptions and to reflect on their understandings and ideas about social relations.

The study of Sociology broadens students' insights into key sociological frameworks and social institutions, enabling them to pursue further formal study at tertiary level or in vocational education and training settings. Sociology also provides valuable knowledge and skills for participation in contemporary society.

Unit 1: Youth

This unit explores the way Australians think about youth and adolescence as social categories, and the experiences of young people. Since the mid-1970s, young people have experienced major changes such as the collapse of the full-time youth labour market, increasing job insecurity, an emphasis on education and training and the impact of new technologies. Issues between generations are further crystallised by an ageing population, declining mortality and decreasing fertility rates. This means a major change in the youth–elderly dependency ratios. This new demographic trend raises significant resource, social and justice issues for Australia. It raises sociological questions about distributive justice, and the nature of obligations to future generations.

While we continue to be informed through institutions like the media about the perennial experiences and problems of youth, it is also evident that there are major issues unique to the current generation. This unit examines stereotypes of young people in a context characterised by a rich diversity in the ways young people live.

Unit 2: Family, education and the workplace

This unit investigates three central social institutions: the family, education and the workplace. Each of these institutions is central to our individual and collective identities and have undergone major recent change. It is not unusual to hear reports of the 'death of the family'. Both the structure and experience of education has also changed dramatically over the last few decades, and since the mid 1970s, the labour market has changed substantially.

In the recent past, the ideal or typical family was said to be the 'nuclear family' consisting of a father, mother and children. It was imagined to be a universal institution that was good for all. More recently, factors such as globalisation, feminism, individualism, technology, changes in the labour market, and government policies have been identified as influencing this view of the family. Family can also be a deeply political issue and is often central to debates in the media, churches, expert groups and governments.

As employment opportunities have declined, younger people are spending more time in education or training than ever before. This has combined with the idea of life-long learning and the practice of people returning to education throughout their life. People experience quite dramatic career changes, and this has coincided with the demise of full-time secure work that men experienced before the mid 1970s. There has always been a special synergy between education and work. Education has served as a training ground; it has helped young people and newcomers to learn social skills like language, cultural understandings and certain customs. Schools also help manage 'the young' section of the population, seen to require close supervision.

Unit 3: Community, culture and society

This unit explores the ways Australians have thought about the idea of community and how we experience various forms of community. The idea of community has been a consistent point of reference in all societies. Why do people continue to form attachments either to particular places or to certain kinds of people and refer to that connection as 'community'?

This unit explores the changing definitions and experiences of community and the challenges to it posed by political, social, economic and technological changes. Students explore whether the idea and experience of 'community' continues to be useful, and in what ways it connects to our sense of being a particular kind of person. In an era of globalisation, what place is there for local attachments or broader attachments to 'an Australian community'? Can a nation like Australia be assumed to have a single set of values, beliefs, culture and set of stories about our identity? Are shared values, narratives and history necessary for community? In what ways can reconciliation shape an Australian identity? How do events like the arrival of refugees on Australian shores inform our national identity?

Unit 4: Citizenship and globalisation

This unit explores the process known as globalisation, entailing the rise of an information society, and the implications of this for democracy and citizenship. It raises questions about the very meaning and experience of citizenship in a globalising world.

At the start of the twenty-first century, there is popular concern that globalisation is changing national boundaries, that national governments can no longer manage the affairs of state for their citizens and the environment. It is argued that this could result in limitations on the power of governments and communities to make decisions on matters of importance to them, with consequences for democracy, the experience of citizenship, the 'welfare state' and the future environment.

Alternatively, some people argue that globalisation has the capacity to promote universal concepts of human rights and diminish some of the negative effects of nationalism. Globalisation is also seen as vital for increasing material standards of living, improving access to information technology and increasing the capacity of people to mobilise information and political resources to promote political processes.

Studio Arts – General, Multi-Media, Photography

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 practice 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 form(s) and the development of distinctive styles in artworks.

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.

Systems Engineering

Contemporary society is exposed to the rapid advancement and pervasive influences of technology. Technological systems play an increasingly significant role in the human world. They mediate or control many aspects of human experience. Systems Engineering provides an opportunity for students to develop capabilities in, and knowledge about, the design, operation, construction, assembly, maintenance, diagnosis, repair and evaluation of technological systems, applicable to a diverse range of fields such as engineering, manufacturing, automation, control technologies, mechatronics, electrotechnology, robotics, and energy management. Students gain awareness and understanding of the interactions of these systems with human society and natural ecosystems.

Students will gain appreciation, knowledge, understanding, and practical application of technological systems. The study promotes innovative thinking and problem-solving skills through a project-based learning approach. It provides opportunities for students to learn about and engage with systems from a practical and purposeful perspective. The study emphasises integration of basic engineering and physics theory with practical tasks. Technological principles and the associated mathematics are incorporated as essential tools employed in the processes of technological systems design, modification, production and evaluation.

The terms mechanical and electrotechnology are used as descriptors for the types of systems covered by this study. Mechanical systems include pneumatic and hydraulic systems or subsystems.

Electrotechnology systems include electrical, electronic and microelectronic systems or subsystems. The study can provide a sound basis for entry into a broad range of tertiary technology courses such as engineering and applied sciences, skilled trades and vocational training, in the electrotechnology and automotive sectors or lead to employment in technological enterprises.

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.

While this unit contains the fundamental physics and theoretical understanding of mechanical systems and how they work, the main focus is on the construction of a system. The construction process draws heavily upon design and innovation within all the interrelated applied learning activities.

In this unit, students study fundamental mechanical engineering principles, including the representation of mechanical devices, the motions performed, the elementary applied physics, and the mathematical calculations that can be applied in order to define and explain the physical characteristics. The unit allows for a 'hands-on' approach, as students apply their knowledge and construct functional systems. These systems can be purely mechanical or have some level of integration with electrotech systems. The systems constructed can provide tangible and/or realistic demonstrations of some of the theoretical principles studied in this unit. All systems require some form of energy to function. Through applied research, students explore how these systems use or convert the energy supplied to them, and related wider environmental and social issues.

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.

In this unit students study fundamental electrotechnology engineering principles. Through the application of their knowledge students produce basic operational systems. The systems produced by the students should employ a level of integration between mechanical and electronic components. Students also apply their knowledge and skills to research and produce technical reports.

While this unit contains the fundamental physics and theoretical understanding of electrotechnology systems and how they work, the main focus remains on the construction of electrotechnology systems. The construction process heavily draws upon design and innovation within all the interrelated applied learning that occurs in the unit.

In this unit, 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. The unit offers opportunities for students to apply their knowledge in the construction of a functional system. Although the system can be predominately electrotechnological, it is highly desirable to have some mechanical integration within the system. The systems constructed provide a tangible demonstration of some of the theoretical principles studied in this unit. Electrotechnology is one of the fastest moving sectors in relation to developments and changes that are taking place through technological innovation. The contemporary design and manufacture of electronic equipment involves increased levels of automation and inbuilt control. The unit allows students to explore some of these new and emerging technologies.

Unit 3: Systems engineering and energy

This unit focuses on how mechanical and electrotech systems are combined to form a controlled integrated technological system. This includes knowledge of sources and types of energy that enable engineered technological systems to function.

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.

In Unit 3 students commence work on the design and construction of one substantial controlled integrated system. This project has a strong emphasis on designing, manufacturing,

testing and innovation. Students manage the project throughout all the phases of designing, planning, construction and evaluation. The engineering principles underpin students' understanding in the fundamental physics and applied mathematics needed to provide a comprehensive understanding of mechanical and electrotech systems and how they function.

In this unit, students develop their engineering knowledge and undertake the construction of a substantial system. They also explore contemporary energy issues in relation to powering 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.

Theatre Studies

Theatre Studies focuses on the interpretation of playscripts and the production of plays from the pre-modern era to the present day. Students apply stagecraft including acting, to study the nature, diversity and characteristics of theatre as an art form. Throughout the study students work with playscripts in both their written form and in performance. They learn about the times, places and cultures of key theatrical developments and develop awareness of the traditions and histories of theatre.

This knowledge is applied through use of stagecraft to collaboratively interpret playscripts in performance. Through contribution to the production of plays and performance of a monologue, students also develop knowledge and understanding of theatrical styles. This knowledge and understanding is further developed by analysis and evaluation of their own productions and productions by professional theatre practitioners.

Theatre Studies provides students with pathways to further studies in fields such as theatre production and theatre design, script writing and studies in theatre history.

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 playscripts from the pre-modern era of theatre, focusing on works prior to the 1880s 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.

Periods from the pre-modern era of theatre include Ancient Greek theatre, Roman theatre, Liturgical drama such as morality/miracle/mystery plays, Italian theatre and the Commedia Dell'Arte, Elizabethan and Shakespearean theatre, Restoration comedies and dramas, Neo-classical theatre, Spanish and French theatre and non-Western theatre such as Beijing Opera, Noh theatre, Bunraku and Kabuki.

The term 'playscript' refers to play/s and/or excerpts from play/s.

Stagecraft

In this unit stagecraft includes acting, costume, direction, dramaturgy, lighting, make-up, multimedia, properties, promotion (including publicity), set, sound and stage management. Students research and apply acting and other stagecraft to interpret playscripts.

Unit 2: Theatrical styles of the modern era

This unit focuses on studying theatrical styles and stagecraft through working with playscripts in both their written form and in performance with an emphasis on the application of stagecraft. Students work with playscripts from the modern era focusing on works from the 1880s 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.

Theatrical styles in the modern era include Naturalism/Realism, Expressionism, Theatre of the Absurd, Epic Theatre, physical theatre, political theatre, feminist theatre, and Eclectic theatre (contemporary theatre that crosses traditional boundaries). Modern theatre has been influenced by practitioners such as Ibsen, Strindberg, Stanislavsky, Chekhov, Brecht, Jarry, Pinter, Beckett, Anouilh, Grotowski, Artaud, Craig, Churchill, Hewitt, Kane, Cusack and Rayson.

The term 'playscript' refers to play/s and/or excerpts from play/s.

Stagecraft

In this unit stagecraft includes acting, costume, direction, dramaturgy, lighting, make-up, multimedia, properties, promotion (including publicity), set, sound and stage management. Students apply stagecraft to interpret a playscript and consider the impact of stagecraft on audiences.

Unit 3: Production development

This unit focuses on an interpretation of a playscript through the four designated stages of production: planning, production development, production season, and production evaluation. Students specialise in two areas of stagecraft, working collaboratively in order to realise the production of a playscript. They analyse the influence of stagecraft on the shaping of the production. Students also attend a performance selected from the prescribed *Theatre Studies Unit 3 Playlist* published annually in the *VCAA Bulletin*, and analyse and evaluate the interpretation of the playscript in the performance.

The term 'playscript' refers to play/s and/or excerpts from play/s.

Stagecraft

In this unit stagecraft includes acting, costume, direction, dramaturgy, lighting, make-up, multimedia, properties, promotion (including publicity), set, sound and stage management. In this unit, students apply two areas of stagecraft across the four designated stages of production to interpret a playscript. They also analyse the influence of the areas of stagecraft they have selected on the shaping of the production across the four stages of the production process.

Production team

For Outcome 1 students form a production team to collaboratively interpret a playscript for performance to an audience. More than one student may specialise in each area of stagecraft, and schools may decide to only focus on some areas of stagecraft. These decisions will be influenced by the playscript selected for interpretation and/or the size of the class.

Unit 4: Performance interpretation

In this unit students study a scene and associated monologue from the *Theatre Studies Performance Examination* (monologue list) published annually by the Victorian Curriculum and Assessment Authority, and develop a theatrical brief that includes the creation of a character by an actor, stagecraft possibilities, and appropriate research. Students interpret a monologue from within a specified scene through acting and other appropriate areas of stagecraft. Students attend a performance selected from the prescribed *Theatre Studies Unit 4 Playlist* published annually in the *VCAA Bulletin* and analyse and evaluate acting in the production.

Monologue selection

For Outcomes 1 and 2 students should select a play title from the *Theatre Studies Performance Examination* (monologue list) published annually by the Victorian Curriculum and Assessment Authority. The list will consist of a set of prescribed play titles, a specified scene from each play and a selected monologue from that scene. Students select one scene from one play and analyse and evaluate its content. The plays on the monologue list will be selected from a range of periods of theatre history and include a variety of performance styles and theatrical traditions that reflect the period in which the works were originally developed.

Scene

In this unit, the term 'scene' refers to a designated segment/s of a playscript selected from the *Theatre Studies Performance Examination* (monologue list).

Stagecraft

In this unit stagecraft includes acting, costume, direction, dramaturgy, make-up, multimedia, properties, set, and sound. Note, in this unit, appropriate stagecraft does not include lighting, stage management or promotion (including publicity).

Visual Communications 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.

It is strongly recommended that all students wishing to include Visual Communications Units 3 & 4 should have already completed Visual Communications Units 1 & 2.

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.

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.

Detailed VETiS Subject Descriptions:

These studies are available at a range of providers including TAFE institutions and some local secondary schools. The following list identifies many, but not all, of the local providers of these subjects and illustrates course content for many of the courses. The information listed are the modules studied in the course, giving you an outline of the content so you can make a more informed decision on the right VETiS course for you. For more detailed information or if you are interested in a course that is not listed here, students and families should contact the College VET Co-Ordinator, Mr Mark Sinclair. Students and parents will be required to fill out a separate application form for a VETiS subject. Please note that course costs do vary across institutions and from year to year.

The costs listed are based on the courses currently running in 2008. More accurate information will be provided as soon as details become available.

Students and parents will be required to complete a more detailed VETiS application form in early Term 3. Please note the following information contains courses and costs that may vary by the beginning of 2009. The costs listed are an indication only (based on 2008 course costs). More accurate information will be provided at the time of the VETiS application process.

VETiS Courses offered at Kambrya College

Course: CISCO Network Academy Programme - IT Essential 1: PC Hardware & Software

Duration: 1 Semester (available as a Unit 1 or Unit 2 subject only).

Programme Cost: approximately \$300

Programme: Please note that this is a one semester programme. Students must also select a unit / subject for the opposite semester.

Chapter 1	Introduction to the Personal Computer	<p>IT Essentials I: PC Hardware and Software</p> <p>This hands-on, lab-oriented course introduces students to information technology and data communications. The course stresses laboratory safety and working effectively in a group environment. Students who complete this course will be able to describe the internal components of a computer, assemble a computer system, install an operating system, and troubleshoot using system tools and diagnostic software. Students will also be able to connect to the Internet and share resources in a network environment. This course helps students prepare for exciting career opportunities in computer technology.</p> <p>Upon successful completion of this course, students will receive a Certificate of Completion for IT Essentials I: PC Hardware and Software. Acquired competencies include the following:</p> <ul style="list-style-type: none"> • Building a computer and installation of the motherboard, disk drives, CD-ROM drives, and video cards • Installing and managing Windows operating systems • Adding peripherals and multimedia capabilities • Demonstrating knowledge of local-area network architecture, networking protocols, the OSI reference model, and TCP/IP utilities • Connecting computers to LANs and to the Internet <p>In addition to basic networking concepts, the functions and configurations of a network are also covered.</p> <p>IT Essentials I: PC Hardware and Software prepares students for the industry-recognized CompTIA A+ certification exam. (Further study beyond secondary schools)</p> <p>Thomson Prometric & Pearson VUE are the 2 official testing centres.</p>
Chapter 2	Safe Lab Procedures and Tool Use	
Chapter 3	Computer Assembly - Step by Step	
Chapter 4	Basics of Preventive Maintenance and Troubleshooting	
Chapter 5	Fundamental Operating Systems	
Chapter 6	Fundamental Laptops and Portable Devices	
Chapter 7	Fundamental Printers and Scanners	
Chapter 8	Fundamental Networks	
Chapter 9	Fundamental Security	
Chapter 10	Communication Skills	
Chapter 11	Advanced Personal Computers	
Chapter 12	Advanced Operating Systems	
Chapter 13	Advanced Laptops and Portable Devices	
Chapter 14	Advanced Printers and Scanners	
Chapter 15	Advanced Networks	
Chapter 16	Advanced Security	

Course: Certificate II in Hospitality (Operations)

Duration: 2 Years

Programme Costs: approximately \$450/year

Programme: Year 1 (= VCE Units 1 & 2)

THHCOR01B	Work with colleagues and customers
THHCOR02B	Work in a socially diverse environment
THHCOR03B	Follow health, safety and security procedures
THHCO01	Develop and update hospitality industry knowledge
THHGHS01B	Follow workplace hygiene procedures
THHBCC01B	Use basic methods of cookery
THHBKA01B	Organize and prepare food
THHBKA02B	Present food
THHBKA04B	Clean and maintain kitchen premises
THHBFB09B	Provide responsible service of alcohol
THHGGA01B	Communicate on the telephone

Programme: Year 2 Food and Beverage Stream (= VCE Units 3&4)

THHBFB11B	Develop and update food and beverage knowledge
THHBFB03B	Provide food and beverage service
THHBFB10B	Prepare non alcoholic beverages
THHBFB02B	Provide a link between kitchen and service areas

Course: Certificate II in Building and Construction

This programme does not currently allow for completion of the entire course.

Duration: 2 Years (1st year only at Kambrya College)

Programme Costs: approximately \$960/year

Also available at: Chisholm Institute – Dandenong (2nd year only = approx. \$1280)
Link Employment & Training (approx. \$935/yr)

Programme: 1st Year (= VCE Units 1 & 2)

VBQM697	Workplace safety and industry induction
VBQM698	Workplace procedures for environmental sustainability
VBQM699	Basic first aid
VBQM700	Building structures
VBQM701	Calculations for the building industry
VBQM706	Quality principles for the building industry
VBQM707	Safe handling of plant and power tools
VBQM708	Workplace documents and plans
VBQM714	Carpentry hand tools

Programme: 2nd Year (= VCE Units 3&4)

VBQM705	Levelling
VBQM704	Introduction to scaffolding
VBQM716	Basic setting out
VBQM717	Sub floor framing
VBQM718	Wall framing
VBQM720	External cladding
VBQM719	Roof framing

Certificate II in Clothing Production (Intermediate) - end of first year of study
Certificate III in Concept Development for Clothing Products – end of second year of study

Certificate II

Are you interested in a career in Fashion Design? If so, this course may well be the one for you! Understanding and interpretation of fashion design is taught using methods that combine pattern design development with garment assembly so that you learn how to make your own fabulous fashion, not simply copy someone else's. Following a number of practise exercises you will be learning how to take measurements and create a number of simple garments for your own personal fit. A portfolio of designs is compiled with accompanying patterns for presentation. You will also undertake projects whereby you will learn about various facets of the fashion industry.

This course can lead into Certificate III, through successful completion of a 2nd year. Certificate IV, followed by a Diploma and/or Degree course, is a further study possibility.

In addition to the course fee, students will be required to purchase their own fabric and accessories (notions) to make their garments.

For more information on this course, please see Mrs M Raines.

VETiS Courses available at other Providers/Venues

Please note: All Chisholm Institute courses incur a \$50 non refundable application fee.

Course: Certificate II in Automotive Technology Studies

Duration: 2 Years

Providers/Venues & Cost: Berwick Secondary College (approx. \$705/year)
 Chisholm Institute –Dandenong (approx. \$1075/year)
 Dandenong High School (\$835/year)

Programme: 1st Year (= VCE Units 1&2)

VBN644	Carry out industry research
AURC270103A	Apply safe working practices
NCS003	Job seeking skills
AURT270278A	Use and maintain workplace tools and equipment
VBN668	Operate electrical test equipment
VBN652	Dismantle and Assemble Engine, Four Stroke multi-cylinder
VBN666	Remove and replace Wheel and Tyre Assemblies
VBN675	Recharge batteries
VBN676	Construct Basic Electronic Circuits

Programme: 2nd Year (= VCE Units 3&4)

VBN653	Remove and replace Engine Cylinder Head
VBN655	Dismantle and Assemble carburettor
VBN657	Dismantle and Assemble Fuel pump
VBN659	Dismantle and Assemble Manual Transmission
VBN662	Remove and replace Clutch Assembly
VBN665	Remove and replace Brake Assemblies
VBN692	Remove and replace steering assembly

Course: Certificate II in Business

Duration: 2 Years

Providers/Venues & Cost: Berwick Secondary College (approx. \$480/year)

Programme: 1st Year (= VCE Units 1&2)

BSBCM202A	Organise and complete daily work activities
BSBCM203A	Communicate in the workplace
BSBCM204A	Work effectively with others
BSBCM205A	Use business technology
BSBCM209A	Provide information to clients
BSBCM211A	Participate in workplace safety procedures
BSBCM213A	Produce simple work processed documents
BSBCM201A	Work efficiently in a workplace environment
BSBCM212A	Handle mail

Programme: 2nd Year (= VCE Units 3&4)

BSBCM207A	Prepare and process financial/business documents
BSBCM302A	Organise personal work priorities and development
BSBCM305A	Organise workplace information
BSBCM306A	Produce business documents
BSBADM305A	Create and use databases

Course: Certificate III in Concept Development for Clothing Products

Duration: 2 Years

Providers/Venues & Cost: Berwick Secondary College (approx. \$450/year)

Programme: 1st Year (=Certificate II Concept Development =VCE Units 1&2)

LMTQAGN01A	Apply quality standards
LMTHRGN08A	Follow defined OH&S procedures
LMTPRCL01AA	Sew Garments 1
LMTPRCL01BA	Sew Garments 2
LMTHRGN02A	Work in a team environment

Programme: 2nd Year (=VCE Units 3&4)

VBN322	Modify patterns and develop prototypes
VBN321	Prepare and define basic concepts for clothing products

Course: Certificate II in Community Services Work

Duration: 2 Years

Providers/Venues & Cost: Berwick Secondary College (approx. \$535/year)
Narre Warren South P-12 (approx. \$350/year)

Programme: 1st Year (=VCE Units 1&2)

CHCOHS201A	Follow OH&S procedures
CHCCS201A	Prepare for work in Community Services Industry
CHCORG1B	Follow the organisations policies, procedures and programs
CHCORG2B	Work with others
CHCCOM1B	Communicate with people accessing the services of the organisation
HLTFA301B	Apply first aid - Level II
CHC1CAA	Communicate with children
CHCFC1C	Support the development of children in the service
CHCCN1D	Ensure children's health and safety

Course: Certificate II in Community Services Work

Programme: 2nd Year (= VCE Units 3&4)

CHCYTH1C	Work effectively with young people
CHCCWI1B	Operate under a case work framework
CHCRH1B	Orientation to work in the health and leisure industry
CHCGROUP2C	Support group activities
CHCAD1C	Advocate for clients
CHCCD12D	Apply a community development framework

Course: Certificate II in Electrotechnology (Shared Technology)

Duration: 2 Years

Providers/Venues & Cost: Berwick Secondary College (approx. \$705/year)
Chisholm Institute –Berwick (approx. \$1088/year)

Programme: 1st Year (= VCE Units 1&2)

VBP118	Carry out shared technology project
ICTTC136A	Install, maintain and modify customer premises communication cabling – ACA restricted rule
VBP140	Set up extra low voltage emergency power supply system

Programme: 2nd Year (= VCE Units 3&4)

UTENES050A	Identify and select components/accessories/materials for electrotech work activities
UTENES056A	Apply technologies and concepts to electrotech work activities
VBP130	Implement a digital circuit using a programmable logic device
VBP132	Program a basic robotic system

Course: Certificate II in Dance

Duration: 2 Years

Provider/Venue & Cost: Eumemmerring Sec. College - Hallam (approx. \$270/yr)

Programme: 1st Year (=VCE Units 1&2)

NCS001	Workplace Communication
VBJ037	Emergency First Aid
VBJ672	Occupational Health and Safety
VBJ673	Nutrition and Body Awareness for Dancers
VBJ674	Performance Psychology (Dance)
VBJ675	Dance Anatomy, Physiology and Exercise
VBJ681	Introduction to Dance Composition

VBJ684	Basic Stagecraft
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Programme: 2nd Year (=VCE Units 3&4)

VBJ676	Dance Career planning and Skills Assessment
VBJ677	Dance Technique Elevation
VBJ678	Dance Technique Turning
VBJ679	Dance Technique Falling
VBJ680	Dance Technique Locomotion
VBJ682	Dance Repertoire Solo
VBJ683	Dance Music and Sounds
VBJ686	Dance Repertoire- Group/ Ensemble

Course: Certificate II in Hairdressing

Duration: 1 Year

Provider/Venue & Cost: Eumemmerring Secondary College - Hallam (approx. \$870)

Chisholm Institute–Dandenong (approx \$1884)

Selection for course at Chisholm based on an occupational appraisal = \$65

Programme:

WRRLP1B	Apply Safe Working Practices
WRHCS202A	Maintain Tools and Equipment
WRHCS204A	Maintain and Organise Work Areas
WRHCS201A	Prepare Clients for Salon Services
WRHCS205A	Follow Personal health and Safety Routines at Work
WRHCS206A	Perform Head, Neck and Shoulder Massage
WRHCS207A	Develop Hairdressing Industry Knowledge
WRHHD201A	Dry hair to Shape
WRRCS1B	Communicate in the Workplace
WRRER1B	Work Effectively in a Retail Environment
WRHCL201A	Apply Temporary Colour and Remove Residual Colour Products
WRRS1B	Merchandise Products
WRRS1B	Sell Products and Services

Course: Certificate II in Music Industry (Foundation)/ Certificate III In Music

Duration: 2 Years

Providers/Venues & Cost: Berwick Secondary College (approx. \$485/year)

Programme: 1st Year - Certificate II Music (Foundation) (= VCE Units 1&2)

CUSBGE01A	Develop & update music industry knowledge
CUSMGE11A	develop music knowledge and listening skills
CUSSAF02A	Follow health, safety and security procedures in the music industry
CUECOR2A	Work with others
CUSMCP01A	Contribute creative music ideas to a project
CUSMPF02A	Develop technical skills for playing or singing music
CUSSOU02A	Operate portable audio recorder
CUSADM01A	Purchase or hire equipment/supplies
CUSSOU04A	Record sound
CUSSOU03A	Transfer sound

Programme: 2nd Year - Certificate III Music (= VCE Units 3 & 4)

CUSADM08A	Address copyright requirements
CUSMPF04A	Prepare self for performance
CUSMPF10A	Develop and practice improvisation
CUSMGE01A	Maintain self or group music

CUSMPF08A	Contribute to backup accompaniment for a performance
CUSMPF06A	Extend technical skills in performance
CUSMGE09A	Use MIDI devices and/or software to perform music
CUSMCP03A	Create a simple accompaniment for a song or tune
CUSMCP02A	Compose a simple song or tune
CUSMGE12A	Maintain and expand music knowledge and critical listening skills.

Course: Certificate II / III in Information Technology

Duration: 2 Years

Providers/Venues & Cost: Dandenong High School - Cleeland (approx. \$300/yr)

Programme: 1st Year – Certificate II in Information Technology (= VCE Units 1&2)

BSBCM106A	Follow workplace safety procedures
ICAD2012A	Design organizational documents using computer packages
ICAU2005A	Operate computer hardware
ICAU2006A	Operate computing packages
ICAS2013A	Integrate commercial computing packages
ICAU2231A	Use computer operating system
ICAW2001A	Work effectively in the workplace
ICAW2002A	Communicate in the workplace
ICAU1128A	Operate a personal computer
Electives	
ICAI2015A	Install software applications
ICAS2010A	Apply problem solving techniques to routine malfunctions
ICAS2014A	Connect hardware peripherals
ICAS2017A	Maintain system integrity
ICAS2243A	Detect and protect from spam and destructive software
ICPMM263A	Access and use the Internet

Programme: 2nd Year – Certificate III in Information Technology (= VCE Units 3&4)

ICAITU018C	Develop macros and templates for clients using standard products
ICAITD128A	Create user and technical documentation
ICAITU126B	Use advanced features of computer application
ICAITU019C	Migrate to new technology
ICAITS031B	Provide advice to clients
ICAITS020C	Install and optimize system software

Course: Certificate II in Multimedia / Certificate III in Multimedia

Duration: 2 Years

Provider/Venue & Cost: Impact Creativity (approx. \$520/year)

Programme: 1st Year – Certificate II in Multimedia (=VCE Units 1&2)

CUFIMA01A	Produce and manipulate digital images
ICPMM41CA	Incorporate text into multimedia presentations
ICPMM44CA	Incorporate audio into multimedia presentations
ICPMM11BA	Identify components of multimedia
CUFSAF01A	Follow health, safety and security procedures
CUFMEM14A	Create, manipulate and incorporate 2D graphics
CUFMEM12A	Update web pages
CUFMEM01A	Use an authoring tool to create an interactive sequence
CUFGEN01A	Develop and apply industry knowledge

Programme: 2nd Year – Certificate III in Multimedia (=VCE Units 3&4)

ICAITU126A	Use advanced features of computer applications
CUFMEM07A	Apply principles of visual design and communication to the development of a multimedia product
CUFIMA03A	Create 2D digital animation
ICPMM65DA	Create web pages with multimedia
ICPMM15DA	Develop a multimedia script
CUFWRT05A	Write content and/or copy

Course: Certificate III in Children’s Services

Duration: 2 Years

Provider/Venue & Cost: Narre Community Learning Centre (approx. \$640/year)
Chisholm Institute – Berwick (approx. \$840/year)

Programme: 1st Year (= VCE Unit 1&2)

CHCCCHILD1C	Identify and respond to children and young people at risk of harm
CHCCN2C	Care for Children
CHCCN4D	Respond to illness, accidents and emergencies
CHCCS301A	Work within a legal and ethical framework
CHCFC1C	Support the development of children in the service
CHCOHS301A	Participate in workplace safety procedures
HLTFA1A	Apply basic First Aid

Programme: 2nd Year (= VCE Unit 3&4)

CHCCN1D	Ensure Children’s Health and Safety
CHCIC1C	Interact effectively with children
CHCPR1C	Deliver services/activities to stimulate children’s development and enhance their leisure
CHCPR3C	Develop an understanding of children’s interests and developmental needs
Electives	
CHCCN3C	Prepare nutritionally balanced food in a safe and hygienic manner
CHCCN5C	Care for Babies
CHCORG3B	Participate in the work environment
CHCRF1C	Work effectively with families in caring for the child

Course: Certificate II in Retail Operations

Duration: 1 Year – for VCAL students only

Provider/Venue & Cost: Narre Community Learning Centre (approx. \$655)

Programme:

WRRCS1B	Communicate in the workplace
WRRCS2B	Apply point-of-sale handling procedure
WRRCS3B	Interact with customers
WRRER1B	Work effectively in a retail environment
WRRCA1B	Operate retail equipment
WRRM2B	Perform routine housekeeping duties
WRRLP1B	Apply safe working practices
WRRLP2B	Minimize theft
WRR11B	Perform stock control procedures
WRRF1B	Balance register/terminal
WRRS1B	Sell products and services
WRRS2B	Advise on products and services
WRRM1B	Merchandise products
	PLUS ONE ELECTIVE

Course: Certificate II in Community Recreation

Duration: 2 Years

Provider/Venue & Cost: Chisholm Institute - Berwick (approx. \$780/year)

Programme: 1st Year (=VCE Units 1&2)

SRXINU001A	Develop knowledge of the Sport and Recreation Industry
SRXOHS001B	Follow defined Occupational, Health and Safety policies and procedures
SRCCRD002B	Apply the principles of community development to community recreation work.
SRCCRO002B	Respond to clients at risk.
SRXFAD001A	Provide First Aid
SRXEMR001A	Respond to emergency situations.
BSBCMN202A	Organise and complete daily work activities.
SRCCRO003B	Apply point of sale handling procedures in a recreation setting.
SRXGCS002A	Deal with client feedback.
SRXCAI003B	Provide equipment for activities.
SRCCA001B	Assist in preparing a sport and recreation session for participants.
SRCCA002B	Assist in conducting a sport and recreation session for participants.
SRSBSB001A	Teach and develop the basic skills of basketball.
SRSBSB002A	Teach and develop the basic strategies of basketball.
SRSCOP002B	Plan for and participate in a media interview.
SROCLA001A	Demonstrate simple climbing skills.

Course: Certificate II in Engineering Studies

Duration: 2 Years

Provider/Venue & Cost: Hampton Park SC/Chisholm Institute-Dandenong 1st Year only (approx. \$500)
Chisholm Institute – Dandenong (approx. \$1020/year)

Programme: 1st Year (=VCE Units 1&2)

MEM1.2FA	Apply Principles of Occupational Health and Safety in a work Environment
VBN768	Develop an Individual career plan for the Engineering industry
VBN769	Perform basic Machining Processes
VBN770	Apply basic Fabrication Techniques
VBN772	Use computers for Engineering related work activities
VBN774	Apply basic computational principles in engineering work activities
MEM18.1AB	Use hand tools
MEM18.2AA	Use power tools- hand held operation

Programme: 2nd Year (=VCE Units 3&4)

VBN771	Apply electrotechnology principles in an engineering work environment
VBN773	Produce basic engineering sketches and drawings
VBN776	Use basic engineering concepts to plan the manufacture of engineering components
VBN777	Handle engineering materials
VBN778	Produce basic engineering components and products using fabrication and machining
VBN783	Create engineering drawing using computer aided system

Other VETiS Courses Provided Locally (in 2008)

Berwick Secondary College

- Certificate II in Community Services Work
-

Carwatha College

- Certificate II in Hospitality (Operations)
-

Chandler Secondary College

- Certificate II in Business
- Certificate II in Community Services Work
- Certificate II in Music Industry (Foundation)
- Certificate III in Music Industry (Technical Production)
-

Cranbourne Secondary College

- Certificate II in Business
-

Dandenong High School Cleeland Campus

- Certificate II in Music Industry
-

Dandenong High School Dandenong Campus

- Certificate II in Business (with some units from Cert III in Business Administration)
- Certificate III in Concept Development for Clothing
-

Dandenong High School Doveton Campus

- Certificate II in Building & Construction (Carpentry)
-

Hampton Park Secondary College

- Certificate II in Hospitality
-

Heatherhill Secondary College

- Certificate II in Business
- CISCO
- Certificate II in Financial Services
- Certificate II in Hospitality (Operations) partial completion of Cert III
- Certificate II / III in Multimedia
-

Hillcrest Christian College

- Certificate II in Equine Studies
-

Kooweerup Secondary College

- Certificate II in Hospitality (Operations)
-

Pakenham Secondary College

- Certificate II in Building & Construction (Carpentry)

- Certificate II in Community Recreation
- Certificate II in Hairdressing
- Certificate II in Hospitality (Operations) partial completion of Certificate III
-

Link Employment and Training

- Certificate II in Automotive Technology Studies
-

National Centre for Equine Education

- Certificate II in Agriculture (Horse Breeding)
- Certificate II in Equine Studies

Mathematics Subjects in VCE

Timeline of Course Selection Process



