

Later Years Subjects 2020



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UPWEY HIGH SCHOOL

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Year 10 Unit Descriptions

English Domain

English language learning and writing is important in helping students achieve success in school and later life. Reading, speaking and listening and writing are involved in teaching and learning throughout the whole range of subjects in the curriculum, and it is the English teacher's role to assist students to develop deeper thinking skills to prepare students for the rigours of the VCE.

English

In preparation for their final years of study in this subject, students will refine and consolidate their understanding and effective practice of the skills acquired throughout their learning experience. This will include a comprehensive review of the use of language to persuade, create and inform.

Students are taught how to write appropriately and effectively in a range of styles, for a variety of purposes and to be aware of their audience. Students are encouraged to write expressively and in detail about their thoughts, feelings, opinions and ideas. A range of writing is produced consisting of pieces of writing for different purposes and audiences. There will be a study of texts - including novels and film.

Students continue to develop an understanding of how texts (novels, poetry, plays, films, media etc) are constructed. Students start to develop a critical understanding of the media and the differences between various media text types. Current media issues are studied and analysed and students develop their own responses to controversial topics.

A learning outcome given a high priority in Year 10 is learning to speak appropriately and with confidence in formal situations. Oral presentation includes debates and talks.

English Domain Elective Unit: Literature

Literature involves the study and enjoyment of a wide range of literary texts: classical, popular, traditional and modern. Its distinctive focus is on the use of language to illuminate and give insight into the nature of the human experience. Literature is an interactive study between the text, the social / political / economic context in which the text was produced, and the experience of life and of literature that the reader brings to the text. This course is an introduction to the VCE subject and could also be seen as an enhancement of a student's understanding of the use of language as an art, as well as a science.

Mathematics Domain

Mathematics Domain

Year 10 Mathematics units are designed to enable students to:

- Apply mathematics in daily life and in future employment
- Develop a positive attitude to the subject through appreciation of the nature, power and scope of mathematical activity
- Develop mathematical knowledge and skill as preparation for VCE Mathematics
- Develop problem solving, modelling and investigative skills.

There are three Year 10 Mathematics units: Year 10 Mathematics (0MMA), Foundation Mathematics (0MAF) and Advanced Mathematics (0MAA). Most students will be studying Year 10 Mathematics (0MMA) in Year 10. This provides the background for all VCE Mathematics Unit 1 and 2 including General Mathematics Further, Mathematical Methods and Specialist Mathematics.

Any student wishing to undertake two mathematics subjects in Year 11 (Mathematical Methods and Specialist Mathematics) would need to have a good understanding of Year 10 Mathematics or enrol in **Advanced Mathematics (0MAA)**.

A limited number of students may be selected for the Foundation Mathematics class – 0MAF.

The Maths Pathway program undertaken in Years 7-9 ensures mastery of concepts to develop and strengthen the individual's skill. It is important to note the level achieved and with consultation select an appropriate

mathematical pathway.

Mathematics

This unit should be taken by all Year 10 students who aim to continue their mathematics studies to Year 12. It aims to provide students with the necessary background for all VCE Mathematics units.

Areas of study include simple and compound interest; linear equations and inequalities; algebraic and graphical representations of relations; surface area and volume; parallel and perpendicular lines relationships; statistics including univariate and bivariate data; algebra including binomial and quadratic expressions, substitution, simple algebraic fractions and simultaneous equations; geometry of triangles and trigonometry and probability.

Students will be assessed in several formats, these include assignments, problem solving, tests, SACs and exams. It is an expectation that digital technologies (i.e. scientific calculator) will be used throughout the unit.

Students attempting Advanced Mathematics (OMAA) would extend work in Number and Algebra to investigate the structure and properties of the number systems, with further analysis of order relations and inequalities. They will also extend the study of trigonometry to include an introduction to circular functions and equations.

Foundation Mathematics

Those Year 10 students who have had difficulty with the mathematical concepts in Year 9 Mathematics may access the Foundation Mathematics course. Studying Foundation Mathematics in Year 10 has significant implications regarding future VCE Mathematics study. The following topics will be studied: rounding and estimation, calculator use, basic mathematical computations, maps and timetables, arithmetic applied to motor vehicles and problem-solving, skills related to taxation, banking, budgeting and finance, survey statistics and sport.

Science Domain

Science

Year 10 Science aims to provide students with an introduction to the traditional science disciplines of Biology, Chemistry and Physics taught in VCE. Each unit offers both experimental and theoretical components, uses real life examples and processes to enable students to make sense of the world around them.

The Biology unit consists of the cell development, explains the role of DNA and genes in cell division (Meiosis and Mitosis) and genetic inheritance (personal characteristics). Chemistry unit looks at the Periodic Table of Elements, their atomic structure and compares the properties of a range of elements. Students will use atomic symbols to write chemical formulae and balance chemical equations. During the Physics unit, students will develop qualitative and quantitative explanations of the relationships between distance, speed, acceleration, mass and force to predict and explain motion.

Science has two interrelated strands: Science Understanding and Science Inquiry. Science understanding is evident when a person selects and integrates appropriate science knowledge to explain and predict phenomena, and applies that knowledge to new situations. Science knowledge refers to facts, concepts, principles, laws, theories and models that have been established by scientists over time. Science Inquiry involves identifying and posing questions; planning, conducting and reflecting on investigations; processing, analysis and interpreting evidence; communicating findings.

Assessment: includes tests, semester exam, practical reports, investigative/research assignments, field studies and oral/ICT presentations.

Applied Chemistry and Physics

This unit has been designed to prepare students for future studies of **Chemistry and Physics** at the VCE level.

It will look at atomic structure, chemical reactions and the types of bonding that exists between different substances. This will be practically based, with the emphasis placed on students linking this knowledge to the design and use of different materials. The students will undertake different types of chemical analysis and will be involved in an extended experimental investigation on one of the materials studied.

Collisions and crashes involve many physical quantities including momentum and energy. Electrical systems in cars will also be investigated, including lighting, ignition systems and hybrid cars. Options which relate to the VCE units will also be offered. These will include astrophysics, nuclear energy and communication using fibre optics. Students will be expected to submit a series of practical and research tasks for assessment.

Applied Biology and Psychology

This unit has been designed to prepare students for future studies of **Biology and Psychology** at VCE level.

The themes of Energy and Genetics are key foci of Biology. It looks at the movement of energy into living systems at both an organism and cellular level. Processes of Photosynthesis and Respiration are explored. The relationships between genetics and evolution, in particular how DNA and gene structure influence the evolution of species.

Despite popular belief, Psychologists do not just work with people who have mental disorders or require counselling but have diverse roles that focus on behavior not just the mind. The relationship between behavior and mental processes are frequently studied. This unit looks at activities that improve personal development and wellbeing, attitude and stress management. Students explore the connection between genetics and environment, individual differences and group dynamics.

Students will conduct scientific studies and formulate hypotheses, collect and analyse data. As well as a increased understanding of scientific processes, students develop capacities that enable them to critically assess the strengths and limitations of science, respect evidence-based conclusions and gain an awareness of the ethical, social and political contexts of scientific endeavours.

Students will be expected to submit a series of practical reports and research tasks for assessment.

Health and Physical Education Domain

The faculty aims to contribute to the total personal development of each student. More specifically, the faculty aims to provide the opportunity for students to demonstrate advanced skills in complex activities.

Students participating in Physical Education must wear correct PE uniform.

Yr 10 ACTIVE FOR LIFE

Students participate in a variety of physical activities designed to promote enjoyment of physical activity and lay the foundation for a healthy and active lifestyle. Possible games / activities may include golf, lawn bowls, yoga, martial arts / self defence, boxing, tennis, dance, walking, bike riding, Frisbie and other team games. Students will also expand their knowledge and appreciation of health related issues in today's society, including risk-taking behaviours, drug education, sexuality and mental health issues. Students will be able to identify what are enablers and barriers for individual's participating in physical activity and understand initiatives set up to overcome these such barriers. Students will also look at the benefits of physical activity versus the risk of inactivity.

Assessment: Based on attitude, participation and skill development. Tests, exam and oral presentations, inquiry investigations will form the bulk of assessment.

Surf Lifesaving (ADVANCE)

Optional Subject

Cost: \$450 Includes club membership, uniform, bus hire and camp. This fee is reduced by a government subsidy that has enabled UHS to reduce the cost of student participation.

This is a one year commitment to the ADVANCE Program with option for longer. Students will be introduced

to beach awareness, Surfing and Surf Life Saving rescue and resuscitation procedures. Once students have obtained their Surf Bronze they will become members of the Woolamai Beach Surf Life Saving Club and be expected to undertake patrol duties (usually on 3-5 occasions over the following summer season (starting Nov until usually Easter of the following year). The option to continue with the program and attain additional Surf Life Saving certificates the following year level is at student discretion with additional costs.

Assessment: Participation, written and practical tests evaluated against the essential learning standards, completion of a First Aid certificate, Surf Bronze Medallion and an advanced resuscitation certificate. Assessment will be undertaken during a 2 day First Aid camp (October) and 5 day camp (Nov/Dec) both at Woolamai Beach, Phillip Island.

Students need to be competent swimmers and will be required to complete a swim trial at UHS's Aquatic Carnival (Feb-Mar) prior to entry to this unit. This trial will take place at the school swimming carnival in February.

Handball Sports

This subject aims to develop the student's ability in the areas of ball handling, hand-eye coordination, body and spatial awareness, developing advanced skills in complex activities. Activities to be covered include basketball, European handball, netball, volleyball and other ball games where students will employ strategies to counter tactical challenges in game situations.

Outdoor Education

Optional Subject

Cost: \$500 This will cover all activities, camps and first aid. By utilising school equipment and the school bus, this cost has been kept as low as practically possible. Food costs are not included in this price as students will provide their own food in the lead up to activities and journey experiences.

Outdoor Education in Year 10 at Upwey High School will run for a semester and will aim to build on camp experiences had in Year 7, 8 and 9 and work towards the ultimate goal of creating and maintaining healthy, positive and sustainable relationships between people and the natural environment.

Students will explore a number of activities that take place in the outdoors. These activities are designed to be fun and to improve understanding of oneself, others and the environment and to do so in a safe and responsible manner. Such activities may include; canoeing, caving, mountain bike riding, cross country skiing as well as overnight, journey based bushwalks. Through Outdoor Education students will learn and demonstrate skills and knowledge relevant to the outdoor activities in which they are participating, develop leadership capabilities through planning and coordinating a range of outdoor experiences and examine perceptions of challenge, risk and safety in a variety natural outdoor settings.

Students will also develop First Aid skills required to deal with a potentially serious incident in the outdoors where immediate ambulance assistance is unlikely. These skills will be learnt through a two day remote first aid course.

Assessment will be conducted through practical and theoretical methods linking to the activities and concepts being explored.

Strength and Conditioning

This unit seeks to attract students who have a genuine, personal interest in physical fitness and intend to enrol in VCE Physical Education.

The theoretical content is based solely on detailed study of muscle structure and action, and on developing an understanding of the aerobic system.

The practical work requires students to undertake a training program guided by their personal preferences – strength or power development, muscle tone, speed development or endurance training.

Evaluation includes laboratory reports, a major project including a training diary, fitness pre and post tests and written tests. There will be some excursions to fitness centres.

Humanities Domain

Year 10 Business Management

In this subject students explore how businesses seek to create and maintain a competitive advantage in the market, in particular through the exploration of marketing. They will consider the behaviours and skills required to run a successful business and how these can be developed. Throughout the course, students will examine current case studies to apply their knowledge to real-world situations.

Year 10 History

In this subject, students will explore significant historical events and concepts and acquire a range of analytical skills which will benefit them in a variety of disciplines. The study of history draws links between contemporary society and its history, providing valuable knowledge and skills in furthering students' understanding of the forces that have shaped the modern world. Units that may feature over the course of the semester, according to student choice, range from the Causes and Consequences of WW2, Civil Rights, Environmental Activism and the rise of Terrorism.

Year 10 Legal Studies

In this subject students develop an understanding of legal foundations, such as the different types and sources of law and the existence of a court hierarchy in Victoria. Students investigate key concepts of criminal law and civil law and apply these to case studies to determine whether an accused may be found guilty of a crime, or liable in a civil dispute. Students will look at the factors that affect the ability of parliament and courts to make laws, evaluate the ability of these law-makers to respond to the need for law reform, and analyse how individuals, the media and law reform bodies can influence a change in the law. There will be a study on the roles of the houses of parliament and the representative nature of parliament.

Year 10 Philosophy – Big Questions, Big Ideas

In this subject students will explore three big questions and ideas in western thought, looking through the eyes of ancient to contemporary thinkers. Students will be able to choose from a variety of questions which could include – Can robots love? Are we truly free? What is natural? Is the environment there for us or are we there for it? Should I be selfish? Should we colonise Mars? Students will develop critical and creative thinking skills and improve their capacity to read and write about complex problems in the world.

Languages Domain

The aim of studying a language is to extend students' knowledge and skills in speaking and writing their chosen language.

Languages units are sequential and students undertaking Languages must complete both semesters.

French

At this level, students understand and use French within the world of teenage experience on topics related to events of general interest, topics drawn from other learning areas and the media.

Students exchange information and opinions, and provide elaboration or detail (for example, time, sequence, quality), examples and explanations on topics, such as weekend activities, TV and cinema, sport and study, etc. They are able to produce written texts of approximately 200 words, incorporating various text types (for example, email message with attachment, report, story, or description). Students are taught to grasp the overall meaning of texts, decipher new words and structures, and understand that it is not always necessary to know every word or language structure to make sense of text.

Students are able to gather information and provide a simple report on a current event in French, with some explanation, for example, of why they are important, amusing or interesting. They can compare aspects of life in France with life in Australia, for example, the education system, daily life in a particular location, and identify advantages and disadvantages.

Japanese

At this level students understand and use Japanese within the world of teenage experience on topics related to events of general interest, topics drawn from other learning areas and the media.

Students exchange information and opinions, and provide elaboration or detail (for example, time, sequence, quality), examples and explanations on topics, such as weekend activities, TV and cinema, sport and study, etc. They are able to produce written texts of approximately 200 words, incorporating various text types (for example, email message with attachment, report, story, or description). Students are taught to grasp the overall meaning of texts, decipher new words and structures, and understand that it is not always necessary to know every word or language structure to make sense of text.

Students are able to gather information and provide a simple report on a current event in Japanese, with some explanation, for example, of why they are important, amusing or interesting. They can compare aspects of life in Japan with life in Australia, for example, the education system, daily life in a particular location, and identify advantages and disadvantages.

Technology Domain

Year 10 Technology builds on the skills and abilities that have been developed during Years 7, 8 and 9. Units presented place an increasing emphasis on the processes of design and evaluation and students are encouraged to develop their creative skills and to compare and evaluate the items they produce with other members of their class. The program also presents students with an introduction to the Technology units that the school currently offers at VCE level. All students should complete at least one unit of Technology in Year 10.

Product Design Technology

Optional Subject

Cost: \$65

This unit provides the opportunity for students who are interested in the practice of design and making products with fabrics, plastics, metal and wood. It uses the design process as a guide to creating solutions to design problems incorporating a range of processes and techniques commonly used in Technology. There is an emphasis on the understanding of project management strategies and the safe practices within a workshop environment. Students are able to make their production following the established criteria including function and appearance. They learn to plan and cost the materials for the project and understand the production procedures. It aims to develop creative thinking and problem solving skills and provides the opportunity for gaining an understanding of the practices used in VCE and VCAL. There is also an emphasis on the methods of manufacturing used in commercial and industrial work places and the sustainability issues that are faced in terms of manufacturing of materials, the use of products and product disposal. There are clear pathway opportunities including design, manufacturing, trades and project management.

Systems Technology

Optional Subject

Cost: \$80

This unit is designed for students who have an interest in electronics and wish to have an introduction to the practical aspects of building small scale electronic projects. Some theory will be covered in the unit and the students will be required to maintain a workbook. Students will also study a robotic component with a foundation understanding of what robotics is and how simple robotic systems can be applied.

The course aims to build specific knowledge of robotics and provide the students with a range of skills in some of the following areas: - problem solving, design, planning and organisation, electronic fabrication, materials fabrication, safe use of tools and test equipment, soldering, documentation and small scale project management, industry specific ICT – simulation software and CAD. This unit is offered as a semester unit.

International Foods

Optional Subject

Cost: \$160

Students will prepare foods from around the world and consider their impact on Australian cuisine.. Learn about the cultures of a range of nationalities, and the significance food has within those cultures. Discuss the global challenge of food security and ethical issues of food production. Students will develop a range of food preparation skills,

including the identification of some very interesting international ingredients and techniques.

This unit is offered for a semester.

Food Studies and Design

Optional Subject

Cost: \$160

The unit enables students to apply their theoretical understanding of the relationship between food and technology as they develop skills in food preparation.

Students will learn about the key foods, origin, properties and ways to utilise these foods in the diet.

The unit also provides students 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. Students develop and apply the knowledge and skills to prepare food safely and hygienically. Students use the design process, critical thinking and problem-solving skills to develop food products to suit specific situations.

This unit may provide a good introduction to students considering studies in VCE Food and Technology.

The Arts Domain

Drama and Theatrical Studies

Students will develop a range of acting skills, create characters, develop and write scripts, rehearse and present works, develop skills and stagecraft, and learn to analyse and evaluate drama.

Students will be assessed according to their participation, leadership skills, commitment, enthusiasm, ability to work with others, quality of performance and performance analysis.

Music Performance

This subject provides students with the opportunity to perform in both solo and group contexts. Participants will also study musicianship and aural elements in preparation for VCE music. Students also have a unique opportunity to work with specialized music software and create their own composition. This course is highly recommended for all students with a musical interest and should be considered essential to those wishing to undertake VCE music solo performance.

All students will need access to an instrument for home practice, in addition to manuscript paper, exercise book and the appropriate level of theory book.

Music Technology

This subject offers an introduction to music recording mixing and live production technologies with a hands on approach to creating digital music, writing and recording music and learning how to set up and run simple PA systems. It is an ideal subject as a lead in to VCE Music Industry Technical Production or for music students to get some skills to help them understand the processes of recording and live sound production.

Instrumental Music Lessons

Optional Subject

Cost: Classical Range \$400

2nd Instrument \$350

Contemporary Range \$450

2nd Instrument \$400

For many students, a musical journey begins at Upwey High School that develops into a lifelong passion.

The ability to play a musical instrument is a unique and enriching experience. Music enables students an outlet to explore, share and express themselves in a creative and supportive environment. Students learn valuable team skills as they play in a collaborative musical ensemble and build confidence through performances. As well as being a lot of fun, music improves memory, coordination, organisation and concentration, all of which will help to create pathways for future learning.

At Upwey High School students are offered the opportunity to join the instrumental music program. By joining the program students have weekly lessons on their chosen instrument, ensemble rehearsals and many performance opportunities.

Music lessons are available for:

Classical Range: *Flute, Clarinet, Saxophone, Trumpet, Trombone, French Horn, Tuba, Violin, Viola*

Contemporary Range: *Singing, , Piano, Guitar, Bass Guitar, Percussion.*

Upwey High School also offer a range of school ensembles that students are welcome to join including: **Guitar Ensemble, Percussion Ensemble, Concert Band, Stage Band, Junior Band, Contemporary Band, Brass Ensemble, Flute Ensemble, Choir, Junior Ensemble, VCE Ensemble.** For details of this activity, contact your music teacher or the Performing Arts Domain Leader. Students involved should read VCE Music Performance information.

Studio Art

Optional Subject

Cost: \$90

This unit focuses on students gaining the opportunity to practically explore a variety of artistic mediums including; drawing, painting, printmaking, and photography/photo-media. These mediums are explored in order for students to produce a broad range artworks by the completion of the semester. Students have the opportunity to experiment with different materials and techniques, through undertaking creation of artworks. This is done to gain an understanding and awareness of which mediums in particular they feel comfortable with in preparation for VCE studies. Students will produce a folio which expresses their artistic development and reflections.

Photography

Optional Subject

Cost: \$100

This unit aims to give greater awareness and understanding of black and white photography. Students will learn to use a 35mm SLR Camera and how to process film and print photographs using the darkroom facilities. Prior knowledge of how to use a camera is helpful but not necessary. Students will study a variety of techniques, which will include a selection from collage, montage, toner work, hand colouring, and may also include the use of computer imaging. Colour Digital Photography is also offered with an introduction to image manipulation and Photo Shop editing software.

Visual Communication and Design

Optional Subject

Cost: \$50

This unit introduces students to the designing of graphics seen every day such as logo design and illustration used in the advertising and marketing of clothing, music, food, concerts and sporting events. Areas that will be covered in this unit will be how to follow a design brief, the development of practical skills such as drawing and learning the process of design. Students will use a broad range of media and tools from pencil through to the computer. Students wishing to study Visual Communication and Design Units 1-4 in VCE are advised to complete this unit of study at Year 10.

Media

This unit is a practical introduction to the basic skills and concepts of media and television production.

Students work in small groups on media exercises and projects. These range from scripting and storyboarding through to editing and music dubbing. Television production is examined from both analytical and practical perspectives.

Digital Media and Design

This subject aims to extend students' knowledge, skills and techniques in a variety of art making practices through the use of information communication technologies. Students will use information communication technologies to create digital artworks such as computer generated drawings and compositions. They will investigate the role of Digital Media in the design industry. This subject aims to provide students with technical and creative knowledge, skills and techniques that will serve them in their future Art, Design, Multimedia and ICT use. This subject provides students with foundation skills in many of the programs used in VCE arts studies

PreCAL

This subject is a taster and foundation course for students interested in following a VCAL pathway in Year 11 and 12. The subject covers the Foundation course in Work Related Skills (WRS) and Personal Development Skills (PDS).

English Domain

English

Unit 1

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

Students develop their skills in creating written, spoken and multimodal texts.

The term 'set text' refers to texts chosen by the school for Areas of Study 1 in Units 1 and 2.

Unit 2

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

The term 'set text' refers to texts chosen by the school for Area of Study 1 in Units 1 and 2.

Unit 3

VCE Compulsory Unit: English (may be substituted with Literature)

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

Texts selected for study in Area of Study 1 must be chosen from the Text List published annually by the VCAA.

The texts selected for study in Unit 3 Area of Study 2 must have appeared in the media since 1 September of the previous year.

The term 'selected texts' refers to a combination of texts chosen from the list of prescribed texts for comparative study in the Text List published by the VCAA.

Unit 4

VCE Compulsory Unit: English (may be substituted with Literature)

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

Texts selected for Area of Study 1 must be chosen from the Text List published annually by the VCAA. The issues selected for Area of Study 2 must have appeared in the media since 1 September of the previous year, but need not be the same as the issue selected for study in Unit 3.

The term 'selected texts' refers to a combination of texts chosen from the list of prescribed texts for comparative study in the Text List published by the VCAA.

Literature

English Domain Elective Unit: Literature (may be substituted for English)

The VCE Literature course has undergone a major review by the VCAA, in consultation with teachers and teaching bodies. Beginning in 2016, the course offers a progressive exploration of the nature of Literature from Unit 1 through to Unit 4. However, there are no prerequisites to any of the Literature courses offered.

Unit 1: Approaches to literature

In this unit students focus on the ways in which the interaction between text and reader creates meaning. Students' analyses of the features and conventions of texts help them develop increasingly discriminating responses to a range of literary forms and styles. Students respond critically, creatively and reflectively to the ideas and concerns of texts and gain insights into how texts function as representations of human experience. They develop familiarity with key terms, concepts and practices that equip them for further studies in literature. They develop an awareness of how the views and values that readers hold may influence the

reading of a text.

Unit 2: Context and connections

In this unit students explore the ways literary texts connect with each other and with the world. They deepen their examination of the ways their own culture and the cultures represented in texts can influence their interpretations and shape different meanings. Drawing on a range of literary texts, students consider the relationships between authors, audiences and contexts. Ideas, language and structures of different texts from past and present eras and/or cultures are compared and contrasted. Students analyse the similarities and differences across texts and establish connections between them. They engage in close reading of texts and create analytical responses that are evidence-based. By experimenting with textual structures and language features, students understand how imaginative texts are informed by close analysis.

Unit 3: Form and transformation

In this unit students consider how the form of a text affects meaning, and how writers construct their texts. They investigate ways writers adapt and transform texts and how meaning is affected as texts are adapted and transformed. They consider how the perspectives of those adapting texts may inform or influence the adaptations. Students draw on their study of adaptations and transformations to develop creative responses to texts. Students develop their skills in communicating ideas in both written and oral forms.

Unit 4: Interpreting texts

In this unit students develop critical and analytic responses to texts. They consider the context of their responses to texts as well as the ideas explored in the texts, the style of the language and points of view. They investigate literary criticism informing both the reading and writing of texts. Students develop an informed and sustained interpretation supported by close textual analysis. For the purposes of this unit, literary criticism is characterised by extended, informed and substantiated views on texts and may include reviews, peer-reviewed articles and transcripts of speeches. Specifically, for Unit 4 Outcome 1, the literary criticism selected must reflect different perspectives, assumptions and ideas about the views and values of the text/s studied.

Health and Physical Education Domain

Health and Human Development

Through the study of VCE Health and Human Development, students investigate health and human development in local, Australian and global communities.

Health is a dynamic condition that is influenced by complex interrelationships between individuals and biomedical and behavioural factors, as well as physical and social environments. These interrelationships are reflected in a social view of health that sees health as being created in the settings where people live and work. This social view of health 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 and development, an awareness of the impacts on health of public policies and the need for health services to be oriented towards health promotion and the prevention of ill health.

The study of Health and Human Development is based on the premise that health and human development needs to be promoted at an individual level, and within group and community settings at national and international levels, to maximise global development potential. This underpins the structure of the four units of Health and Human Development. The study also promotes the understanding that nutrition plays a major role in influencing both health status and individual human development.

Physical Education

VCE Physical Education examines the biological, physiological, psychological, social and cultural influences on performance and participation in physical activity. It focuses on the interrelationship between motor learning and psychological, biomechanical, physiological and sociological factors that influence physical performances, and participation in physical activity. The study of physical activity and sedentary behaviour is significant for the understanding of health, wellbeing and performance of people.

The study enables the integration of theoretical knowledge with practical application through participation in physical activities. There are opportunities for students to apply theoretical concepts and reflect critically on factors that affect all levels of performance and participation.

This VCE study is suitable for students with a wide range of aspirations, 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 the health sciences, exercise science and education, as well as providing valuable knowledge and skills for participating in their own sporting and physical activity pursuits to develop as critical practitioners and lifelong learners.

VCE VET Sport and Recreation

Certificate III is a two year course which provides students with the skills and knowledge to work in the Sport and Recreation Industry.

In Units 1 and 2, students will study concepts necessary to effectively plan and conduct sport and activity sessions. This will include units such as, Conducting Sport, Fitness and Recreation Sessions, Work Health and Safety, First Aid and Officiating Knowledge. Practical experiences include delivering activity sessions working with peers and primary school students.

Units 3 and 4 we offer scored assessment and study core units such as, Conduct basic warm-up and cool-downs, Developing Coaching knowledge, Plan and Conduct programs and WHS Risk Control. Students undertaking units 3 and 4 also complete practical portfolio tasks related to the Sport and Recreation field. Further practical activities include coaching and officiating programs.

Outdoor and Environmental Studies ***Optional Subject***

Cost: \$750

In Units 1: Exploring outdoor experiences

Area of Study 1

Motivations for outdoor experiences

In this area of study students examine motivations for and responses to nature and outdoor experiences. They investigate a range of contemporary uses and meanings of the term 'nature', and examine a variety of different types of outdoor environments. Students are introduced to a cultural perspective on the ways humans relate to outdoor environments. Students learn to participate safely in outdoor experiences and develop relevant practical skills including first aid to enable safe participation in practical experiences. Students use these experiences as the basis for reflection

Area of Study 2

Influences on outdoor experiences

This area of study focuses on planning and participating in outdoor experiences. Students evaluate how their personal responses are influenced by media portrayals of outdoor environments and perceptions of risk involved in outdoor experiences. Practical outdoor experiences provide students with the opportunity to observe and experience various ways of encountering and understanding outdoor environments. Students consider factors that affect access to outdoor experiences and explain the effect of different technologies on outdoor experiences, examining how all of these influence the ways humans understand nature.

In Units 2: Discovering outdoor Environments

Area of Study 1

Investigating outdoor environments

This area of study introduces students to the characteristics of a variety of outdoor environments, including those visited during practical outdoor experiences. Students undertake case studies of different types of outdoor environments to observe and experience how changes to nature affect people. They develop appropriate practical skills for safe and sustainable participation in outdoor experiences and investigations into various outdoor environments. Students use these experiences as the basis for reflection and analysis of theoretical knowledge of natural environments.

Area of Study 2

Impacts on outdoor environments

This area of study focuses on the human activities undertaken in outdoor environments and their impacts on those environments. Although environmental impacts include both natural and human induced changes on components of the environment, the focus here is on the impacts of humans – both positive and negative.

Students investigate and model individual and group responsibilities for activities in outdoor environments, including community-based environmental action to promote positive impacts on outdoor environments. Practical outdoor experiences

Humanities Domain

Business Management

Unit 1: Planning a business

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

Unit 2: Establishing a business

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

Unit 3: Managing a business

In this unit students explore the key processes and issues concerned with managing a business efficiently and effectively to achieve the business objectives. Students examine the different types of businesses and their respective objectives. They consider corporate culture, management styles, management skills and the relationship between each of these. Students investigate strategies to manage both staff and business operations to meet objectives. Students develop an understanding of the complexity and challenge of managing businesses and through the use of contemporary business case studies from the past four years have the opportunity to compare theoretical perspectives with current practice.

Unit 4: Transforming a business

Businesses are under constant pressure to adapt and change to meet their objectives. In this unit students consider the importance of reviewing key performance indicators to determine current performance and the strategic management necessary to position a business for the future. Students study a theoretical model to undertake change, and consider a variety of strategies to manage change in the most efficient and effective way to improve business performance. They investigate the importance of leadership in change management. Using a contemporary business case study from the past four years, students evaluate business practice against theory.

History – Twentieth Century History

Unit 1 and 2 Twentieth Century History

The Twentieth Century was the century of the two biggest wars the world had ever known, conflicts that dominated the way events unfolded across the world, in Europe in particular. Units 1 and 2 history focus on the between and after war periods. Efforts to achieve peace and stability, the development of new political ideologies and the conflicts which arose out of these form the basis of Twentieth Century History. The Paris Peace Conferences, the League of Nations, the demise of the old Empires and colonialism, the Great Depression, Fascism, Nazism, Communism, Capitalism, the battle to impose democratic values, the rise of the USA as a superpower, the rise of Russia as a superpower, the rise of Asia as a power, the Atomic bomb, the United Nations, the Cold War, Civil Rights movements, the war in Vietnam – all important and relevant history. Feminism, racism, protest movements and terrorism all make up a part of the picture of the history of the Twentieth Century.

History – Revolutions

In Year 12 History: Revolutions, students investigate the historical causes and consequences of the French (1789) and Russian (1918) revolutions. Students develop an understanding of the complexity and multiplicity of causes and consequences in the revolutionary narrative. They evaluate how revolutionary outbreaks are caused by the interplay of significant events, ideas, individuals and popular movements and assess how these were directly or indirectly influenced by the social, political, economic and cultural conditions. They construct arguments about the past using primary sources as evidence and evaluate the extent to which the revolutions brought change to the lives of people.

The study of history draws links between contemporary society and its history, in terms of social and political institutions, and language. VCE history is relevant to students with a wide range of interests, including those who wish to pursue formal study at tertiary level, as well as providing valuable knowledge and skills for an understanding of the forces that have shaped contemporary society.

Legal Studies

VCE Legal Studies investigates the ways in which the law and the legal system relate to and serve individuals and the community. This knowledge is central to understanding the workings of contemporary Australian society.

Legal Studies examines the processes of law-making, dispute resolution and the administration of justice in Australia. Students develop an understanding of the impact of the legal system on the lives of citizens, and the implications of legal decisions and outcomes on Australian society. The study provides students with an appreciation of how individuals can be involved in decision-making within the legal system, encouraging civic engagement and helping them to become more informed and active citizens.

Students develop an understanding of the complexity of the law and the legal system and the challenges faced by our law-makers and dispute resolution bodies. They investigate the workings of the Australian legal system and undertake comparisons with international structures and procedures. Students are encouraged to question these systems and develop informed judgments about their effectiveness, as well as consider reforms to the law and the legal system.

Legal Studies also focuses on the development of skills. Students develop an ability to identify, collect and process information from a range of sources and engage in its interpretation and analysis. Skills for independent inquiry, critical thinking and legal reasoning to solve legal problems are also fostered. Students are required to apply legal reasoning and decision-making to contemporary cases and issues.

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 (AusVELS) 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.

Languages Domain

French

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.

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.

Japanese is designed for students who do not have a Japanese background, i.e. students who have learnt all the Japanese they know in an Australian school or similar environment.

Mathematics Domain

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, modelling, 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.

- ❖ *It is strongly recommended that students undertaking Mathematical Methods at Year 11 also do Specialist Unit 1 and 2. This is especially important to improve algebra skills for Year 12*
- ❖ *Students intending to do Specialist Mathematics in Year 12 must do both Mathematics Methods **and** Specialist Unit 1 and 2 in Year 11*

- ❖ Students who do **only** General Mathematics Further at Year 11 have only Further Mathematics available to them in Year 12
- ❖ **Foundation Mathematics** does not lead to any Mathematics study in Year 12. Students should check carefully with course counsellors before choosing this subject. In some tertiary courses that have Year 11 Mathematics as a pre-requisite, Foundation Mathematics is not accepted as sufficient.

Common Combinations of Mathematics Units:

Year 11	Year 12
Foundation Mathematics	
General Mathematics Further, Mathematical Methods or Specialist Mathematics	Further Mathematics
Mathematical Methods [preferably with Specialist Unit 1 and 2]	Mathematical Methods
Specialist Mathematics plus Mathematical Methods	Specialist Mathematics plus Mathematics Methods

Foundation Mathematics – 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 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. This unit encompasses space, shape and design, patterns and number, handling data and measurement.

General Mathematics – 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. Each unit encompasses applications involving sequences and series.

The study of Algebra; including linear and non-linear relations and their graphical representations and the use of expressions and equations. Data analysis in particular the interpretation of univariate and bivariate data and the design, construction and evaluation of probability simulation models. Business mathematics that included financial arithmetic and networks. Shape and measurement are revisited in Geometry and Trigonometry.

Further Mathematics – Units 3 and 4

In Further Mathematics the core area of study involves the summary, design and analysis of statistical data with reference to number patterns, difference equations and financial arithmetic. The elective areas of study of undirected and directed graphs and networks and matrices will also be covered.

Specialist Mathematics – Units 1 to 4

In Specialist Mathematics students are expected to be able to apply techniques, routines and processes, involving functions, relations and graphs, algebra, calculus, statistics, vectors and mechanics. The use of computer algebra systems (CAS) technology is incorporated throughout to support and develop the learning of mathematics in these units.

Mathematical Methods – Units 1 to 4

In Mathematical Methods students are expected to be able to apply techniques, routines and processes involving rational and real arithmetic, algebraic manipulation, calculus, equation solving, function and graph sketching and interpretation, probability and statistics, differentiation and integration with and without the use of technology. The use of computer algebra system (CAS) technology is incorporated throughout to support and develop the learning of mathematics in these units.

Biology

Unit 1: How do living things stay alive?

In this unit students are introduced to some of the challenges to an organism in sustaining life. Students examine the cell as the structural and functional unit of life, from the single celled to the multicellular organism, and the requirements for sustaining cellular processes in terms of inputs and outputs. They analyse types of adaptations that enhance the organism's survival in a particular environment and consider the role homeostatic mechanisms play in maintaining the internal environment. Students investigate how a diverse group of organisms form a living interconnected community that is adapted to, and utilises, the abiotic resources of its habitat. The role of a keystone species in maintaining the structure of an ecosystem is explored. Students consider how the planet's biodiversity is classified and the factors that affect the growth of a population. A student practical investigation related to the survival of an organism or species is undertaken in Area of Study 3. The investigation draws on content from Area of Study 1 and/or Area of Study 2.

Unit 2: How is continuity of life maintained?

In this unit students focus on cell reproduction and the transmission of biological information from generation to generation. Students learn that all cells are derived from pre-existing cells through the cell cycle. They examine the process of DNA replication and compare cell division in both prokaryotic and eukaryotic organisms. Students explore the mechanisms of asexual and sexual reproductive strategies, and consider the advantages and disadvantages of these two types of reproduction. The role of stem cells in the differentiation, growth, repair and replacement of cells in humans is examined, and their potential use in medical therapies is considered. Students use chromosome theory and terminology from classical genetics to explain the inheritance of characteristics, analyse patterns of inheritance, interpret pedigree charts and predict outcomes of genetic crosses. They explore the relationship between genes, the environment and the regulation of genes in giving rise to phenotypes. They consider the role of genetic knowledge in decision making about the inheritance of autosomal dominant, autosomal recessive and sex-linked genetic conditions. In this context the uses of genetic screening and its social and ethical issues are examined. A student-directed research investigation into, and communication of, an issue related to genetics and/or reproductive science is to be undertaken in Area of Study 3. The investigation draws on content from Area of Study 1 and/or Area of Study 2.

Units 3-4

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, their interdependence, their interactions with the non-living environment, and the processes that maintain life and ensure its continuity. Biology enables students to understand that despite the diverse ways of meeting the challenges of survival, all living things have many structural and functional characteristics in common.

The study of biology prepares students for continuing studies in bioscience and entry into the workforce in a wide range of careers, including those not normally thought of as depending on bioscience. Much of our economic activity is generated through advances in bioscience research, in environmental, medical and associated biotechnologies, and in parallel sciences such as bioinformatics.

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.

Chemistry

VCE Chemistry enables students to explore the relationship between materials and energy through four themes: the design and composition of useful materials, the reactions and analysis of chemicals in water, the efficient production and use of energy and materials, and the investigation of carbon-based compounds as important components of body tissue and the materials used in society.

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

The development and use of materials for specific purposes is an important human endeavor. In this unit students investigate the chemical properties and practical applications of a range of materials including metals,

crystals, polymers and nanomaterials. They explore and explain the relationships between properties, structure and bonding forces within and between particles. Students are introduced to quantitative concepts in chemistry.

Unit 2: What makes water such a unique chemical?

Water is the most widely used solvent on Earth. In this unit students explore the physical and chemical properties of water, the reactions that occur in water and various methods of water analysis

Students examine the structure and bonding within and between water molecules in order to investigate solubility, concentration, pH and reactions in water including precipitation, acid-based and redox. They are introduced to stoichiometry and to analytical techniques and instrumental analysis.

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

The global demand for energy and materials is increasing with world population growth. In this unit students explore energy options and the chemical production of materials with reference to efficiencies, renewability and the minimization of their impact on the environment.

Students compare and evaluate different chemical energy resources and investigate the combustion of fuels. They consider the purpose, design and operating principles of galvanic cells, fuel cells and electrolytic cells and calculate quantities in electrolytic reactions. Students analyse manufacturing processes with reference to factors that influence their reaction rates and extent.

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

Carbon is the basis of the diverse compounds found in living tissues and in fuels, food, medicines and many materials used in everyday life. In this unit students investigate the structural features, bonding, reactions and uses of the major families of organic compounds including those found in food.

Students process data from instrumental analyses to confirm or deduce organic structures, and perform volumetric analyses to determine the concentrations of organic chemical mixtures. They predict the products of reaction pathways and design pathways to produce particular compounds from given starting materials. Students investigate key food molecules including carbohydrates, proteins, lipids and vitamins and use calorimetry to determine the energy released in the combustion of food.

Physics

Physics seeks to understand and explain the physical world, both natural and constructed. It examines models and ideas, which are sometimes challenged as new knowledge develops.

Physics is based on observations, experiments, measurements and mathematical analysis with the purpose of finding quantitative explanations for phenomena occurring from the subatomic scale through to the planets, solar system and galaxies in the Universe. Whilst many scientific understandings in Physics have stood the test of time, many other areas continue to evolve. In undertaking this study, students develop their understanding of the role of careful and systematic experimentation, and modelling, in the development of theories and laws. They undertake practical activities and apply physics principles to explain and quantify both natural and constructed phenomena.

Unit 1: What ideas explain the physical world?

In this unit students explore some of the fundamental ideas and models, they consider thermal concepts by investigating heat and assessing the impact of human use of energy on the environment. Students evaluate common analogies used to explain electricity and investigate how electricity can be manipulated and utilised.

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

This unit requires that students undertake a core study relation to motion. Students explore the power of experiments in developing models and theories. They will investigate the ways in which forces are involved both in moving objects and in keeping objects stationary. They choose one of twelve options related to astrophysics, bioelectricity, biomechanics, electronics, flight, medical physics, nuclear energy, nuclear physics, optics, sound and sports science.

Unit 3:

In this unit, students explore the importance of energy in the production of electricity and its delivery to homes. Students consider the field model as a construct that has enabled an understanding of why objects move when they are not apparently in contact with other objects. They explore interactions, effects and applications of gravitational, electric and magnetic fields including the design and operation of particle accelerators. Students use Newton's law and Einstein's theories to investigate and describe motion.

Unit 4:

Light and matter – which initially seem to be quite different – have been observed as having similar properties. In this unit, students explore the use of wave and particle theories to model the properties of light and matter. They examine how the concept of the wave is used to explain the nature of light and analyse its limitations in describing light behavior. Students further investigate light by using a particle model to explain its behavior.

Psychology

Unit 1: How are behaviour and mental processes shaped?

Human development involves changes in thoughts, feelings and behaviours. In this unit students investigate the structure and functioning of the human brain and the role it plays in the overall functioning of the human nervous system. Students explore brain plasticity and the influence that brain damage may have on a person's psychological functioning. They consider the complex nature of psychological development, including situations where psychological development may not occur as expected. Students examine the contribution that classical and contemporary studies have made to an understanding of the human brain and its functions, and to the development of different psychological models and theories used to predict and explain the development of thoughts, feelings and behaviours.

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

A person's thoughts, feelings and behaviours are influenced by a variety of biological, psychological and social factors. In this unit students investigate how perception of stimuli enables a person to interact with the world around them and how their perception of stimuli can be distorted. They evaluate the role social cognition plays in a person's attitudes, perception of themselves and relationships with others. Students explore a variety of factors and contexts that can influence the behaviour of an individual and groups. They examine the contribution that classical and contemporary research has made to the understanding of human perception and why individuals and groups behave in specific ways.

Unit 3: The conscious self

This unit focuses on the study of the relationship between the brain and the mind through examining the basis of consciousness, behaviour, cognition and memory. Advances in brain research methods have opened new ways to understanding the relationship between mind, brain and behaviour. Students study the structure and functioning of the human brain and nervous system, and explore the nature of consciousness and altered states of consciousness including sleep. The brain continually receives and processes vast amounts of information from its internal and external environment. Memory involves the selective retention and retrieval of this information and it plays an important role in determining behaviour. Students consider the function of the nervous system in memory and investigate the ways in which information is processed, stored and utilised. They apply different theories of memory and forgetting to their everyday learning experiences. Students analyse research methodologies associated with classic and contemporary theories, studies and models, consider ethical issues associated with the conduct of research and the use of findings, and apply appropriate research methods when undertaking their own investigations.

Unit 4: Brain, behaviour and experience

This unit focuses on the interrelationship between learning, the brain and its response to experiences, and behaviour. The overall quality of functioning of the brain depends on experience, and its plasticity means that different kinds of experience change and configure the brain in different ways. Students investigate learning as a mental process that leads to the acquisition of knowledge, development of new capacities and changed behaviours. Understanding the mechanisms of learning, the cognitive processes that affect readiness for learning, and how people learn informs both personal and social issues. Students build on their conceptual understanding of learning to consider it as one of several important facets involved in a biopsychosocial approach to the analysis of mental health and illness. They consider different concepts of normality, and learn to differentiate between normal responses such as stress to external stimuli, and mental disorders. Students use a biopsychosocial framework – a conceptual model which includes psychological and social factors in addition to biological factors in understanding a person's mental state – to explore the nature of stress and a selected mental disorder. The intent of the study is not that of diagnosis and treatment but to explore causes of mental illness, avenues of assistance and factors that promote mental wellbeing.

Technology Domain

VCE Applied Computing

Unit 1: In this unit students are introduced to the stages of the problem-solving methodology. Students focus on how data can be used within software tools such as databases and spreadsheets to create data visualisations, and the use of programming languages to develop working software solutions.

Area of Study 1: Data analysis In this area of study students use software tools to create data visualisations in response to teacher-provided requirements and designs. Students examine the features of different design tools to represent the functionality and appearance of software solutions. They interpret given designs and create database, spreadsheet and data visualisations solutions using the data collected. Students focus on the appropriate functions and techniques to manipulate and validate data and to make use of suitable formats and conventions. Students apply computational thinking skills when extracting meaning from data and apply design thinking skills and knowledge to create data visualisations.

Outcome 1: On completion of this unit the student should be able to interpret teacher-provided solution requirements and designs, collect and manipulate data, analyse patterns and relationships, and develop data visualisations to present findings.

Area of Study 2: Programming students use a programming language to create a working software solution in response to teacher-provided solution requirements. Students apply the problem-solving stages of design, development and evaluation to develop the solution. A project plan is prepared to support an organised approach to problem solving. Students use software to record the identification and sequencing of tasks, time allocation, dependencies, milestones and critical path. They record and monitor the progress of their working solution throughout the stages of the problem-solving methodology.

Outcome 2: On completion of this unit the student should be able to interpret teacher-provided solution requirements to design, develop and evaluate a software solution using a programming language.

Unit 2: In this unit students focus on developing innovative solutions to needs or opportunities that they have identified, and propose strategies for reducing security risks to data and information in a networked environment.

Area of Study: Innovated Solutions students work collaboratively to develop an innovative solution to an identified need or opportunity. They apply all stages of the problem-solving methodology to investigate the use of digital devices and emerging technologies and their applications. The innovative solution may take the form of a proof of concept, prototype or product. Students choose one of the following topics to explore in greater detail:

- *artificial intelligence, machine learning or neural networks*
- *assistive and wearable technologies or Internet of Things (IoT)*
- *creating with digital systems such as drones, microcontrollers, nanosatellites and robotic devices*
- *games development, multimedia programming or web authoring*
- *mixed realities such as augmented and virtual reality*
- *investigation/research project on innovative uses for emerging technologies such as block-chain*
- *Any other innovative digital solution.*

Outcome 1: On completion of this unit the student should be able to, in collaboration with other students, analyse, design, develop and evaluate an innovative solution to an identified need or opportunity involving a digital system.

Area of Study 2: Network Security students investigate how networks enable data and information to be exchanged locally and globally. Students examine the hardware and software components and procedures required to connect and maintain wired, wireless and mobile communications technology. Students develop an understanding of cybersecurity issues when they investigate the threats, vulnerabilities and risks to data and information stored within and transmitted across networks, and propose strategies for reducing security risks.

Outcome 2: On completion of this unit the student should be able to respond to a teacher-provided case study to examine the capabilities and vulnerabilities of a network, design a network solution, discuss the threats to data and information, and propose strategies to protect the security of data and information.

Unit 3 and 4: Data Analytics

Unit 3: Data Analytics: In this unit students apply the problem-solving methodology to identify and extract data through the use of software tools such as database, spreadsheet and data visualisation software to create data visualisations or infographics. Students develop an understanding of the analysis, design and development stages of the problem-solving methodology.

In **Area of Study 1** students respond to teacher-provided solution requirements and designs. Students develop data visualisations and use appropriate software tools to present findings. Appropriate software tools include database, spreadsheet and data visualisation software. **Outcome 1:** On completion of this unit the student should be able to respond to teacher-provided solution requirements and designs to extract data from large repositories, manipulate and cleanse data and apply a range of functions to develop software solutions to present findings.

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

Outcome 2: On completion of this unit the student should be able to propose a research question, formulate a project plan, collect and analyse data, generate alternative design ideas and represent the preferred design for creating infographics or dynamic data visualisations.

Unit 4: Data Analytics: In this unit students focus on determining the findings of a research question by developing infographics or dynamic data visualisations based on large complex data sets and on the security strategies used by an organisation to protect data and information from threats.

In **Area of Study 1: Development and Evaluation:** students develop the design they prepared in Unit 3, Area of Study 2, into infographics or dynamic data visualisations that address a research topic or question by applying the problem-solving stages of development and evaluation. Effective designs and clarity of messages are key features of infographics and dynamic data visualisations, which are designed to communicate findings intended for a target audience. Students evaluate the quality of their infographics or dynamic data visualisations using the evaluation criteria developed in Unit 3, Area of Study 2, and assess the effectiveness of their project plan in the development of their project.

Outcome 1: On completion of this unit the student should be able to develop and evaluate infographics or dynamic data visualisations that present findings in response to a research question, and assess the effectiveness of the project plan in monitoring progress.

In **Area of Study 2: Cybersecurity: data and information security:** students focus on data and information security and its importance to an organisation. Students investigate security strategies used by an organisation to manage the storage, communication and disposal of data and information in their networked environment. They recommend strategies to reduce the threats to data and information, taking into account the key legal requirements and any ethical issues faced by the organisation.

Outcome 2: On completion of this unit the student should be able to respond to a teacher-provided case study to investigate the current data and information security strategies of an organisation, examine the threats to the security of data and information, and recommend strategies to improve current practices.

Unit 3 and 4 Software Development

Unit 3: Software Development In this unit students apply the problem-solving methodology to develop working software modules using a programming language. Students develop an understanding of the analysis, design and development stages of the problem-solving methodology.

In **Area of Study 1** students respond to teacher-provided solution requirements and designs and develop a set of working modules through the use of a programming language. Students examine a simple software requirements specification and a range of software design tools in order to apply specific processing features of a programming language to create working modules.

Outcome 1 On completion of this unit the student should be able to interpret teacher-provided solution requirements and designs, and apply a range of functions and techniques using a programming language to develop and test working software modules.

In **Area of Study 2** students analyse a need or opportunity, select an appropriate development model, prepare a project plan, develop a software requirements specification and design a software solution. Area of Study 2 forms the first part of the School-assessed Task (SAT) that is completed in Unit 4, Area of Study 1.

Outcome 2: On completion of this unit the student should be able to analyse and document a need or opportunity, justify the use of an appropriate development model, formulate a project plan, generate alternative design ideas and represent the preferred solution design for creating a software solution.

Unit 4: Software Development: In this unit students focus on how the information needs of individuals and organisations are met through the creation of software solutions. They consider the risks to software and data during the software development process, as well as throughout the use of the software solution by an organisation.

In **Area of Study 1** students apply the problem-solving stages of development and evaluation to develop their preferred design prepared in Unit 3, Area of Study 2, into a software solution and evaluate the solution, chosen development model and project plan. Area of Study 1 forms the second part of the School-assessed Task (SAT).

Outcome 1: On completion of this unit the student should be able to develop and evaluate a software solution that meets requirements, evaluate the effectiveness of the development model and assess the effectiveness of the project plan.

In **Area of Study 2** students examine the security practices of an organisation and the risks to software and data during the development and use of the software solutions. Students evaluate the current security practices and develop a risk management plan.

Outcome 2: On completion of this unit the student should be able to respond to a teacher-provided case study to examine the current software development security strategies of an organisation, identify the risks and the consequences of ineffective strategies and recommend a risk management plan to improve current security practices.

Food Studies

Optional Subject

Cost: \$160 The provision of ingredients to support food productions.

Unit 1: Food origins

This unit focuses on food from historical and cultural perspectives. Students investigate the origins and roles of food through time and across the world. In **Area of Study 1** students explore how humanity has historically sourced its food, examining the general progression from hunter-gatherer to rural-based agriculture, to today's urban living and global trade in food. Students consider the origins and significance of food through inquiry into particular food-producing regions of the world.

Unit 2: Food makers

In this unit students investigate food systems in contemporary Australia. **Area of Study 1** focuses on commercial food production industries, while **Area of Study 2** looks at food production in small-scale

domestic settings, as both a comparison and complement to commercial production. Students gain insight into the significance of food industries to the Australian economy and investigate the capacity of industry to provide safe, high-quality food that meets the needs of consumers. Students use practical skills and knowledge to produce foods and consider a range of evaluation measures to compare their foods to commercial products. They consider the effective provision and preparation of food in the home, and analyse the benefits and challenges of developing and using practical food skills in daily life. In demonstrating their practical skills, students design new food products and adapt recipes to suit particular needs and circumstances. They consider the possible extension of their role as small-scale food producers by exploring potential entrepreneurial opportunities.

Unit 3: Food in Daily Life

This unit investigates the many roles and everyday influences of food. **Area of Study I** explores the science of food: our physical need for it and how it nourishes and sometimes harms our bodies. Students investigate the physiology of eating and appreciating food, and the microbiology of digestion. They also investigate the functional properties of food and the changes that occur during food preparation and cooking. They analyse the scientific rationale behind the Australian Dietary Guidelines and the Australian Guide to Healthy Eating (see www.eatforhealth.gov.au) and develop their understanding of diverse nutrient requirements.

Unit 4: Food issues, challenges and futures

In this unit students examine debates about global and Australian food systems. **Area of Study I** focuses on issues about the environment, ecology, ethics, farming practices, the development and application of technologies, and the challenges of food security, food safety, food wastage, and the use and management of water and land. Students research a selected topic, seeking clarity on current situations and points of view, considering solutions and analysing work undertaken to solve problems and support sustainable futures.

The study may provide a foundation for pathways to food science and technology, consumer science, home economics, child care and education, community services and aged care, the hospitality and food manufacturing industries, and nutrition and health studies

Product Design and Technology

Optional Subject

Cost: \$160 Provision of consumable materials required to build and produce items.

Unit 1: In unit one students consider the redevelopment of a product that addresses a need or function. They apply the design process to research the design and making of the product taking into consideration the sustainability of materials and the disposal of the product. They create design options, working drawings and produce the product using a range of tools and processes that are commonly used in this area. Consideration for the safe work practices and correct use of tools and equipment is also a focus. They compare their product with the original design and evaluate it against the needs and requirements outlined in their design brief.

Unit 2: In this unit students work in teams to design and develop and produce an item in a product range or contribute to the design, planning and production of a group product. This helps to encourage communication between students and mirrors professional design practice. They focus on factors including end-user/s' needs and wants; function, purpose and context for product design. They produce the products and evaluate the success of the product at the end of the process. Also in this unit students gain an understanding of movement or style and gain an understanding of movements and trends.

Unit 3: Students participate in the development of a product that addresses a personal, local or other problem that meets the needs and wants of a potential end user. The product is developed through a design process and is influenced by the purpose, function and context of the product. The ways products are developed in industrial settings from a one off product to mass production is a consideration. Students identify the end user and the context of the product and create a design brief that meets the problem or scenario to be addressed. They complete appropriate research and generate evaluation criteria that addresses the brief. The planning for the product production is included addressing the cost of quantity of materials and the safe work practices that are required for the making of the product. They also address the different ways companies use within their manufacturing to reduce waste and improve sustainability.

Unit 4: In unit 4, students make their designed product using a range of tools and equipment that are appropriate for the project. They use appropriate safety practices that have been determined in the risk assessment for the making of the product. The students continue to participate in the documenting the production process and continue to complete appropriate research and make modifications as needed.

Students engage with the end user during the production of the product and make judgements about improvements. Finally students create an instruction or care label for their finished product. The comparison of commercially made products is also included in this unit looking at the design and the production and use of a product made in an industrial setting.

The Arts Domain

Art

Optional Subject

Cost: \$160 Provision of resources required to complete student portfolio work.

The VCE Art study recognises art as an integral part of our lives. Art is a potent and dynamic visual language through which we are able to communicate personal experiences, ideas, cultural values and beliefs. In both the process of making and examining art, students can realise the power to inspire change through imagination, creativity and innovation.

Within the VCE Art study, theoretical research and investigation informs art making. Students are encouraged to recognise the interplay between research and art making. This provides students with an informed context that supports an awareness of art as a tool for cultural and personal communication, in addition to providing stimulus and inspiration for their own art making. The study acknowledges the value of creativity and analytical thinking in preparing students for today's world by encouraging imagination, flexibility, adaptability and risk-taking. Students develop their visual language through personal and independent learning by combining a focused study of artworks with practical art making.

VCE Art provides the opportunity to investigate the role of art in the world through a study of historical and contemporary cultures. The Art study challenges students to articulate their understanding of the meanings and messages contained within artworks and to examine the effects of artworks upon the viewer. Throughout their study, students develop skills in research, analysis and arts criticism to interpret and debate the issues that are raised and, in response, they form and support personal points of view. Through exploration and experimentation using art forms, materials, techniques and processes, students progressively develop their own artworks and develop an awareness of appropriate health and safety practices.

Media

Optional Subject

Cost: \$40 Specialist paper, pencils and consumable aspects of equipment use such as batteries

The media is a diverse, dynamic and evolving collection of forms used to inform, communicate with and connect people. Media influence the way people spend their time, help shape the way they perceive themselves and others, and play a crucial role in the creation and exchange of personal, social, cultural, national and global identities. 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, contemporary and emerging technologies; regulation; and the need to attract and maintain audiences. The relationships between such frames of reference and audiences shape media products and the ways in which they are developed, constructed, distributed and consumed.

Notions of audience underlie the creation, distribution, consumption and reception of media texts. Media texts are representations of social, personal and cultural reality, which have been constructed through a process of selection and omission, using media codes and conventions. Codes and conventions may be common to all media products, or specific to individual media forms, texts, genres and styles. VCE Media examines media products as the expression of creative ideas, specific symbolic languages and discourses of society and culture that shape meaning and reflect the society in which they were created.

This study explores a variety of media forms, including audio, audiovisual media, print-based media, digital and interactive media technologies and convergent media processes. Students examine and analyse the relationships between audiences and the media; this analysis is undertaken through a theoretical and practical study that places the student in the role of a media creator.

Studio Arts – General

Optional Subject

Cost: \$210 Provision of resources required to complete works utilizing a wide variety of materials and techniques

The creative nature of visual art provides individuals with the opportunity for personal growth, the expression

of ideas and a process for examining identity. The exhibition of visual art offers an insight into the diverse interpretations of life and its experience by artists. Engagement with visual art facilitates creative thinking and the development of new ideas; it also supports connection and exchange within communities and beyond.

The theoretical component of this study is an important basis for studio practice as it offers students a model for inquiry that can support their art making practices. Students' research focuses on the visual analysis of artworks and investigates how artists have interpreted sources of inspiration and influences in their art making. Students examine how artists have used materials, techniques and processes to create aesthetic qualities. They study how artists have developed styles and explored their cultural identity in their artwork. Students use this knowledge to inform their own processes to support their art making.

The foundation for the individual design process is established in Units 1 and 2 where students develop an understanding of how to source artistic inspiration related to their individual interests. Through the study of artists from different cultures, students recognise the diversity of aesthetic qualities and examine a range of interpretations of ideas and themes. In practical application students identify elements of inspiration for the development of their own creative artworks and explore a wide variety of materials and techniques.

In Unit 3 the student uses an exploration proposal to define an area for the development of a visual design process that is based on their individual concepts and ideas. The exploration proposal underpins the student's working process and is used as a reference for the development and reflection of the design process. This enables the student to establish an understanding about how to generate a range of potential directions for the production of possible future artworks.

In Unit 4 students develop a creative folio of finished artworks based on selected potential directions. Students evaluate the use of materials, techniques and aesthetics in relation to the successful communication of their ideas in their finished artworks.

Studio Arts – Photography

Optional Subject

Cost: \$210 Provision of film and processing chemicals, photographic and film paper, cartridges and speciality printers

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Visual Communication Design

Optional Subject

Cost: \$140 provision of a large range of paints, inks and writing tools for use in student folio work

Visual Communication is a bridge between an idea and its intended audience. In the fields of architecture, engineering, graphic, industrial and multimedia design, advertising and marketing, cartography and fashion, for example, visual communicators use text and/or image to communicate information. The visual form that the communication takes may be imaginative and original or it may conform to conventions or accepted rules. The production of visual communications involves the application of a design process in which final presentations are developed in response to needs identified in an initial brief. The design process provides a defined, yet flexible approach, to the development, evaluation and refinement of visual communication solutions.

The vocabulary and grammar of visual communication is based on understanding and applying drawing and drawing conventions, design elements and design principles. This knowledge assists students in the generation of a range of visual communications. In this study, information and communications technology as well as other forms of image generation are used to create examples of visual communication. The study also provides the opportunity for students to develop an informed, critical and discriminating approach to visual communications encountered in everyday life.

Theatre Studies

Optional Subject

Cost: \$100 Production resources such as makeup, scripts and costumes

Theatre Studies focuses on the interpretation of playscripts and the production of plays from the premodern 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.

Music Performance

Optional Subject

Cost: \$60 Provision of workshops/incursions and charts, arrangements and printed material related to student performance

Requirement: Instrumental lessons at Upwey High School.

VCE Music offers students opportunities to engage in the practice of performing, creating and studying music that is representative of diverse genres, styles and cultures. 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.

Students develop knowledge of stylistic, aesthetic and expressive qualities and characteristics of music and develop their ability to communicate their understanding through music making: performing, composing, arranging and/or improvising; and musicianship: aural perception, analysis and music language.

VCE Music offers students opportunities for personal development and to make an ongoing contribution to the culture of their community through participation in life-long music making.

Music Investigation

Optional Subject

Cost: \$60 Provision of workshops/incursions and charts, arrangements and printed material related to student performance

Unit 3:

Area of Study 1

Investigation

Students identify and describe an Investigation Topic and conduct research to develop their understanding of relevant performance practices. They explore performances by leading practitioners and stylistic and structural characteristic of the music. As they research, analyse and listen critically to a sample of music works that includes works selected for performance and other works that are representative to style, genre or tradition under investigation, students develop knowledge and understanding that will inform their performances. Evidence from this research is documented in a portfolio. Students also learn to use relevant music terminology and language to describe and discuss their research findings.

Area of Study 2

Composition/improvisation/arrangement

Students complete composition, arrangement or improvisation exercises to develop their understanding of the music and performance practices characteristic of style, tradition or genre investigated in Area of Study 1.

The music they create should demonstrate understanding of instrumental and expressive techniques, characteristic treatment of elements of music, use of compositional devices and relevant performance conventions. Using an appropriate notation formation, students prepare a score/chart of the exercises and use this to support a discussion of how the exercises are informed by their research findings.

Area of Study 3

Performance

Students plan, rehearse and perform a program of works that are representative and characteristic of the style, tradition or genre they are investigating. The performance program enables students to apply research being undertaken for Area of Study 1 regarding stylistic characteristics, instrumental and expressive techniques, practices and conventions and approaches to interpretation. Through their research students explore possibilities for performance of each work in the program. They develop interpretations that balance relevant personal, stylistic, practical, technological, historical and cultural influences. As students shape their interpretation and learn and rehearse each work in the techniques and conventions. They also practise exercises or other materials to develop relevant instrumental and performance techniques. Through regular performance practice in a variety of contexts, they explore ways of expressively shaping their chosen works and develop their ability to communicate their artistic intentions to an audience.

Unit 4:

Area of Study 1

Preparing a Performer's Statement

Students use their learning from Unit 3 and further research to reflect on and evaluate their interpretative approaches to the music works they are preparing to perform. This research extends students' understanding of the possibilities for performance of their program. They consider how to balance their realisation of technical and expressive features with choices they have made in relation to personal, stylistic, practical, technological, historical and cultural influences. They prepare a Performer's Statement that explains their interpretive approach to the works and demonstrates their understanding of performance practices relevant to the music style, tradition and/or genre of works in the performance program they are preparing. This statement will be provided to assessors at the end-of-year performance examination.

Area of Study 2

Composition/improvisation/arrangement

Students complete an original composition, improvisation and/or arrangement to demonstrate their understanding of an Investigation Topic. They use research and exercises created in Unit 3 to plan their work. The work should demonstrate understanding of idiomatic instrumental techniques, performance conventions, performer abilities and other practical considerations. Students prepare a score, chart or other digital form that can be used by performers to learn, rehearse and prepare the work for performance. They perform the work and explain how it is characteristic of the music style, tradition or genre they are investigating.

Area of Study 3

Performance

Students refine their interpretation of works that are representative and characteristic of the style, tradition or genre they are investigating. They explore ways to present the program, considering use of performance conventions, the order in which they will perform the works and, as appropriate, use of accompaniment, equipment and digital technologies. They continue to practise exercises and other materials to develop relevant instrumental and performance techniques. Through regular performance in a variety of contexts, they trial and evaluate audience reception of their interpretations and adjust their performance in response.

VCE VET Music Industry (Technical Production)

Certificate III in Technical Production provides you with the practical skills and knowledge to record, mix and edit sound sources. Units 1 and 2 of the program include core units such as implementing copyright arrangements, performing basic sound editing and developing music industry knowledge. Elective units provide you with the opportunity to specialise in areas such as composing, event staging support and recording. Units 3 and 4 offer scored assessment and include units such as recording and mixing a basic music demo, providing

sound reinforcement and setting up and disassembling audio equipment.

Completion of Certificate III in Technical Production will assist you in pursuing a career in the music industry through vocational or higher education pathways in areas such as sound track laying, digital editing and mixing, audio visual equipment operations and stage management. Work places in such an industry can include stage productions, radio and medium to large recording studios. With additional training and experience, potential employment opportunities may include sound technician, tour crew member, studio engineer, theatre/television audio technician.

VCAL – Victorian Certificate of Applied Learning

VCAL is a hands on option for Year 11 and 12 students, offering practical work related experience and literacy and numeracy skills.

Like the VCE (Victorian Certificate of Education), VCAL is an accredited secondary school certificate which is also offered at TAFE (technical and Further Education) institutes and a number of Learn Local organisations.

Students can do VCAL in Year 11 or 12, with the option of doing a part-time apprenticeship or traineeship at the same time.

Students who complete VCAL have several career options, including transferring to VCE< studying at TAFE, doing an apprenticeship or traineeship or starting a job once school has finished.

Choosing VCAL studies

VCAL students can choose studies from accredited modules within the following four compulsory strands:

- *Literacy and numeracy skills. Each VCAL program includes literacy and numeracy subjects selected from VCAL units, VCE units or other further education studies.*
- *Industry specific skills. Each VCAL program at the intermediate and senior level includes studies from nationally recognised vocational education and training (VET) programs. Students can also do a school based apprenticeship as part of VCAL.*
- *Work related skills. Each VCAL program includes work related skills to make students employable. Students can do a structured work placement, a school based apprenticeship or part time work as part of VCAL.*
- *Personal development skills. Each VCAL program includes projects and activities in students' community or school to help develop teamwork skills, self confidence and other skills important for life and work.*

Students start VCAL at the level that matches their needs and abilities. The three levels include foundation, intermediate or senior. Many VCAL students complete the program in one year.