VCE/VCAL

Course Selection Booklet 2016-2017
Unit Outlines
INDEX

ENGLISH.................................................................................................................................4
ENGLISH.................................................................................................................................4
LITERATURE .............................................................................................................................5
MATHEMATICS..........................................................................................................................6
PATHWAYS .................................................................................................................................6
FOUNDATION MATHEMATICS .................................................................................................7
GENERAL MATHEMATICS ........................................................................................................8
FURTHER MATHEMATICS ........................................................................................................9
MATHEMATICAL METHODS .....................................................................................................10
SPECIALIST MATHEMATICS ....................................................................................................12
THE ARTS ..................................................................................................................................14
STUDIO ARTS ............................................................................................................................14
ART .............................................................................................................................................14
VISUAL COMMUNICATION & DESIGN .....................................................................................15
COMMERCE ..............................................................................................................................16
ACCOUNTING ............................................................................................................................16
BUSINESS MANAGEMENT .........................................................................................................16
ECONOMICS ...............................................................................................................................18
HEALTH AND P.E. .....................................................................................................................19
HEALTH AND HUMAN DEVELOPMENT ..................................................................................19
PHYSICAL EDUCATION .............................................................................................................20
SCIENCE ....................................................................................................................................21
BIOLOGY ....................................................................................................................................21
CHEMISTRY ...............................................................................................................................23
CHEMISTRY ...............................................................................................................................24
PHYSICS .....................................................................................................................................25
PSYCHOLOGY ..............................................................................................................................27
HUMANITIES AND LOTE ...........................................................................................................28
HISTORY ....................................................................................................................................29
JAPANESE (SECOND LANGUAGE) ...............................................................................................31
GEOGRAPHY ...............................................................................................................................32
TECHNOLOGY .............................................................................................................................34
FOOD AND TECHNOLOGY .......................................................................................................34
PRODUCT DESIGN AND TECHNOLOGY ....................................................................................35
VICTORIAN CERTIFICATE OF APPLIED LEARNING (VCAL) ..................................................36
VCE VET .....................................................................................................................................37
CERTIFICATE II IN ENGINEERING ............................................................................................39
CERTIFICATE II IN HOSPITALITY (OPERATIONS) .....................................................................40
CERTIFICATE II IN MUSIC INDUSTRY (FOUNDATION) ..............................................................41
CERTIFICATE III IN MUSIC ........................................................................................................41
The study of English contributes to the development of literate individuals capable of critical and creative thinking, aesthetic appreciation and creativity. This study also develops students’ ability to create and analyse texts, moving from interpretation to reflection and critical analysis.

Through engagement with texts from the contemporary world and from the past, and using texts from Australia and from other cultures, students studying English become confident, articulate and critically aware communicators and further develop a sense of themselves, their world and their place within it. English helps equip students for participation in a democratic society and the global community.

(New Study Design for 2016)

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.

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.

Units 3 & 4: English builds on the skills and knowledge developed in Units 1 & 2. The focus of study is text. There are 4 texts to study: one of these texts is a film text. In addition, students need to read and respond to issues presented in the media.

There are three areas of study:
1. Responding to text
2. Creating and presenting
3. Media Analysis & presenting a point of view

In Unit 3, one assessment task is in the format of an oral presentation.

The exam at the end of the year is of three hour duration and accounts for 50% of a student’s final scored assessment. The exam is divided into three sections.
1. Responding to Text – Text essay
2. Creating and Presenting – An original piece of writing in response to a context prompt/ stimulus.
3. A Media Analysis piece

(New Study Design for 2017)

Unit 3: In this unit students read and respond to texts analytically and creatively. They analyse arguments and the use of persuasive language in texts.

Unit 4: 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.

There are three areas of study:
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2. Creating and presenting
3. Media Analysis & presenting a point of view

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1. Responding to Text – Text essay
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3. A Media Analysis piece
VCE Literature provides opportunities for students to develop their awareness of other people, places and cultures and explore the way texts represent the complexity of human experience. Students examine the evolving and dialogic nature of texts, the changing contexts in which they were produced and notions of value. They develop an understanding and appreciation of literature, and an ability to reflect critically on the aesthetic and intellectual aspects of texts.

(New Study Design for 2016)

Unit 1: Approaches to literature: In this unit students focus on the ways the interaction between text and reader creates meaning. Students’ analyses of the features and conventions of texts help them develop responses to a range of literary forms and styles. 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. Students consider the relationships between authors, audiences and contexts and 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.

Units 3 & 4: The study of literature is a means of exploring human experience. It involves asking questions such as: whose experiences and what experiences are given voice in the text? How are they created through the text’s use of language and literary devices? What does the text's representation of characters and events suggest about the values and views of the text? These units examine such questions and involve students in analyzing a range of texts, developing skills in reading closely and critically, and discussing and debating various ways of interpreting and evaluating texts.

(New study Design for 2017)

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 develop creative responses to texts and 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 investigate literary criticism informing both the reading and writing of texts. Students develop an informed and sustained interpretation supported by close textual analysis.
MATHEMATICS

Mathematics is the study of function and pattern in number, logic, space and structure. It provides both a framework for thinking and a means of symbolic communication that is powerful, logical, concise and unambiguous and a means by which people can understand and manage their environment. Essential mathematical activities include abstracting, providing, applying, investigating, modeling and problem solving.

PATHWAYS

<table>
<thead>
<tr>
<th>Subject</th>
<th>Year 11</th>
<th>Year 12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Foundation Mathematics</td>
<td>Unit 1&amp;2</td>
<td>-</td>
</tr>
<tr>
<td>General Mathematics</td>
<td>Unit 1&amp;2</td>
<td>To Further Math</td>
</tr>
<tr>
<td>Further Mathematics</td>
<td></td>
<td>Unit 3&amp;4</td>
</tr>
<tr>
<td>Mathematics Methods</td>
<td>Unit 1&amp;2</td>
<td>Unit 3&amp;4</td>
</tr>
<tr>
<td>Specialist Mathematics</td>
<td>Unit 1&amp;2</td>
<td>Unit 3&amp;4</td>
</tr>
</tbody>
</table>

When Mathematics is not successfully completed at year 10 level the Mathematics pathways are limited in VCE.
FOUNDATION MATHEMATICS
(New study design for 2016)

Foundation Mathematics Units 1 and 2
Foundation Mathematics provides for the continuing mathematical development of students entering VCE and who do not necessarily intend to undertake Unit 3 and 4 studies in VCE Mathematics in the following year.
The areas of study for Units 1 and 2 of Foundation Mathematics are:

- Space, shape and design
- Patterns and number
- Data
- Measurement

Area of Study 1-Space, shape and design
In this area of study students cover the geometric properties of lines and curves, and shapes and objects, and their graphical and diagrammatic representations with attention to scale and drawing conventions used in domestic, societal, industrial and commercial plans, maps and diagrams.

Area of Study 2-Patterns and number
In this area of study students cover estimation, the use and application of different forms of numbers and calculations, and the representation of patterns and generalisations in number including formulas and other algebraic expressions in everyday contexts.

Area of Study 3-Data
In this area of study students cover collection, presentation and analysis of gathered and provided data from community, work, recreation and media contexts, including consideration of suitable forms of representation and summaries.

Area of Study 4-Measurement
In this area of study students cover the use and application of the metric system and related measurement in a variety of domestic, societal, industrial and commercial contexts, including consideration of accuracy.
**GENERAL MATHEMATICS**  
*(New study design for 2016)*

**Units 1 and 2**
General Mathematics provides for different combinations of student interests and preparation for study of VCE Mathematics at the Unit 3 and 4 level. The areas of study for General Mathematics Unit 1 and Unit 2 are

- Algebra and structure
- Arithmetic and number
- Discrete mathematics
- Geometry, measurement and trigonometry
- Graphs of linear and non-linear relations
- Statistics

**Area of Study 1-Algebra and structure**
In this area of study students cover representation and manipulation of linear relations and equations, including simultaneous linear equations, and their applications in a range of contexts.

**Area of Study 2-Arithmetic and number**
In this area of study students cover mental, by-hand and technology assisted computation with rational numbers, practical arithmetic and financial arithmetic, including estimation, order of magnitude and accuracy.

**Area of Study 3-Discrete mathematics**
In this area of study students cover matrices, graphs and networks, and number patterns and recursion, and their use to model practical situations and solve a range of related problems.

**Area of Study 4-Geometry, measurement and trigonometry**
In this area of study students cover shape, measurement and trigonometry and their application to formulating and solving two- and three-dimensional problems involving length, angle, area and surface area, volume and capacity, and similarity and the application of linear scale factors to measurement.

**Area of Study 5-Graphs of linear and non-linear relations**
In this area study students cover continuous models involving linear and non-linear relations and their graphs, linear inequalities and programming, and variation.

**Area of Study 6-Statistics**
In this area of study students cover representing, analysing and comparing data distributions and investigating relationships between two numerical variables, including an introduction to correlation.
FURTHER MATHEMATICS
(New study design for 2016)

Further Mathematics Units 3 and 4
Further Mathematics consists of two areas of study, a compulsory Core area of study to be completed in Unit 3 and an Applications area of study to be completed in Unit 4.
The Core comprises
- Data analysis
- Recursion and financial modelling

The Applications comprises two modules to be completed in their entirety, from a selection of four possible modules:
- Matrices
- Networks and decision mathematics
- Geometry and measurement
- Graphs and relation

Area of Study 1 – Unit 3
Core units of study include:
- Data analysis
- Recursion and financial modelling
  (Each with 3 outcomes)

Area of Study 2 – Unit 4
Applications
Students must complete two modules selected from the following four modules.

Matrices
This module covers definition of matrices, different types of matrices, matrix operations, transition matrices and the use of first-order linear matrix recurrence relations to model a range of situations and solve related problems.

Networks and decision mathematics
This module covers definition and representation of different kinds of undirected and directed graphs, eulerian trails, eulerian circuits, bridges, hamiltonian paths and cycles, and the use of networks to model and solve problems involving travel, connection, flow, matching, allocation and scheduling.

Geometry and measurement
This module covers the use of measurement, geometry and trigonometry to formulate and solve problems involving angle, length, area and volume in two and three dimensions, with respect to objects, the plane and the surface of the earth.

Graphs and relations
This module covers the use of linear relations, including piecewise defined relations, and non-linear relations to model a range of practical situations and solve related problems, including optimisation problems by linear programming.
MATHEMATICAL METHODS
(New study design for 2016)

Mathematical Methods Unit 1 and 2
Mathematical Methods Units 1 and 2 provide an introductory study of simple elementary functions of a single real variable, algebra, calculus, probability and statistics and their applications in a variety of practical and theoretical contexts. They are designed as preparation for Mathematical Methods Units 3 and 4 and contain assumed knowledge and skills for these units.

Area of Study 1
Functions and graphs
In unit 1 students cover the graphical representation of simple algebraic functions (polynomial and power functions) of a single real variable and the key features of functions and their graphs such as axis intercepts, domain (including the concept of maximal, natural or implied domain), co-domain and range, stationary points, asymptotic behaviour and symmetry. The behaviour of functions and their graphs is explored in a variety of modelling contexts and theoretical investigations.
In unit 2 students cover graphical representation of functions of a single real variable and the key features of graphs of functions such as axis intercepts, domain (including maximal, natural or implied domain), co-domain and range, asymptotic behaviour, periodicity and symmetry.

Area of Study 2
Algebra
In unit 1 supports students’ work in the ‘Functions and graphs’, ‘Calculus’ and ‘Probability and statistics’ areas of study, and content is to be distributed between Units 1 and 2. In Unit 1 the focus is on the algebra of polynomial functions of low degree and transformations of the plane. In Unit 2 the focus is on the algebra of some simple transcendental functions and transformations of the plane. This area of study provides an opportunity for the revision, further development and application of content prescribed in Unit 1.

Area of Study 3
Calculus
In unit 1 students cover constant and average rates of change and an introduction to instantaneous rate of change of a function in familiar contexts, including graphical and numerical approaches to estimating and approximating these rates of change.
In unit 2 students cover first principles approach to differentiation, differentiation and anti-differentiation of polynomial functions and power functions by rule, and related applications including the analysis of graphs.

Area of Study 4
Probability and statistics
In unit 1 students cover the concepts of event, frequency, probability and representation of finite sample spaces and events using various forms. This includes consideration of impossible, certain, complementary, mutually exclusive, conditional and independent events involving one, two or three events (as applicable), including rules for computation of probabilities for compound events.
In unit 2 students cover introductory counting principles and techniques and their application to probability and the law of total probability in the case of two events.
Mathematical Methods Units 3 and 4
Mathematical Methods Units 3 and 4 are completely prescribed and extend the introductory study of simple elementary functions of a single real variable, to include combinations of these functions, algebra, calculus, probability and statistics, and their applications in a variety of practical and theoretical contexts.
Units 3 and 4 consist of the areas of study
- Functions and graphs
- Calculus
- Algebra
- Probability and statistics

Area of Study 1-Functions and graphs
In this area of study students cover transformations of the plane and the behaviour of some elementary functions of a single real variable, including key features of their graphs such as axis intercepts, stationary points, points of inflection, domain (including maximal, implied or natural domain), co-domain and range, asymptotic behaviour and symmetry. The behaviour of these functions and their graphs is to be linked to applications in practical situations.

Area of Study 2-Algebra
In this area of study students cover the algebra of functions, including composition of functions, simple functional relations, inverse functions and the solution of equations. They also study the identification of appropriate solution processes for solving equations, and systems of simultaneous equations, presented in various forms. Students also cover recognition of equations and systems of equations that are solvable using inverse operations or factorisation, and the use of graphical and numerical approaches for problems involving equations where exact value solutions are not required or which are not solvable by other methods.

Area of Study 3-Calculus
In this area of study students cover graphical treatment of limits, continuity and differentiability of functions of a single real variable, and differentiation, anti-differentiation and integration of these functions. This material is to be linked to applications in practical situations.

Area of Study 4-Probability and statistics
In this area of study students cover discrete and continuous random variables, their representation using tables, probability functions (specified by rule and defining parameters as appropriate); the calculation and interpretation of central measures and measures of spread; and statistical inference for sample proportions. The focus is on understanding the notion of a random variable, related parameters, properties and application and interpretation in context for a given probability distribution.
**SPECIALIST MATHEMATICS**

*(New study design for 2016)*

**Units 1 and 2**
Specialist Mathematics Units 1 and 2 provide a course of study for students who wish to undertake an in-depth study of mathematics, with an emphasis on concepts, skills and processes related to mathematical structure, modelling, problem solving and reasoning. This study has a focus on interest in the discipline of mathematics in its own right and investigation of a broad range of applications, as well as development of a sound background for further studies in mathematics and mathematics related fields.

Mathematical Methods Units 1 and 2 and Specialist Mathematics Units 1 and 2, taken in conjunction, provide a comprehensive preparation for Specialist Mathematics Units 3 and 4. The areas of study for Units 1 and 2 of Specialist Mathematics are ‘Algebra and structure’, ‘Arithmetic and number’, ‘Discrete mathematics’, ‘Geometry, measurement and trigonometry’, ‘Graphs of linear and non-linear relations’ and ‘Statistics’.

**Prescribed topics**
The prescribed topics are detailed below and are included in Areas of Study 2, 4 and 5. Two of these prescribed topics must be covered in their entirety in Unit 1 and the other two prescribed topics must be covered in their entirety in Unit 2.

**Area of Study 1-Algebra and structure**
- Logic and algebra
- Transformations, trigonometry and matrices

**Area of Study 2-Arithmetic and number**
- Principles of counting
- Number systems and recursion

**Area of Study 3-Discrete mathematics**
- Graph Theory

**Area of Study 4-Geometry, measurement and trigonometry**
- Geometry in the plane and proof
- Vectors in the plane

**Area of Study 5-Graphs of linear and non-linear relations**
- Kinematics
- Non-linear relations and functions

**Area of Study 6-Statistics**
- Simulation, sampling and sampling distributions
SPECIALIST MATHEMATICS

Units 3 and 4

Specialist Mathematics Units 3 and 4 consist of the areas of study: ‘Functions and graphs’, ‘Algebra’, ‘Calculus’, ‘Vectors’, ‘Mechanics’ and ‘Probability and statistics’. The development of course content should highlight mathematical structure, reasoning and applications across a range of modelling contexts with an appropriate selection of content for each of Unit 3 and Unit 4.

Area of Study 1
Functions and graphs
In this area of study students cover inverse circular functions, reciprocal functions, rational functions and other simple quotient functions, the absolute value function, graphical representation of these functions, and the analysis of key features of their graphs including intercepts, asymptotic behaviour and the nature and location of stationary points, points of inflection, periodicity, and symmetry.

Area of Study 2
Algebra
In this area of study students cover the expression of simple rational functions as a sum of partial fractions; the arithmetic and algebra of complex numbers, including polar form; points and curves in the complex plane; introduction to factorisation of polynomial functions over the complex field; and an informal treatment of the fundamental theorem of algebra.

Area of Study 3
Calculus
In this area of study students cover advanced calculus techniques for analytic and numeric differentiation and integration of a range of functions, and combinations of functions; and their application in a variety of theoretical and practical situations, including curve sketching, evaluation of arc length, area and volume, differential equations and kinematics.

Area of Study 4
Vectors
In this area of study students cover the arithmetic and algebra of vectors, linear dependence and independence of a set of vectors, proof of geometric results using vectors, vector representation of curves in the plane and vector kinematics in one and two dimensions.

Area of Study 5
Mechanics
In this area of study students cover an introduction to Newtonian mechanics, for both constant and variable acceleration.

Area of Study 6
Probability and statistics
In this area of study students cover statistical inference related to the definition and distribution of sample means, simulations and confidence interval.
THE ARTS

STUDIO ARTS

Studio Art gives you the freedom to express yourself in any way you like using whatever art form interests you. You need not be fantastic at drawing realistically to enjoy Studio Arts. You just have to enjoy exploring ideas using inspiration like music, poetry, films, books, other artist’s work and most importantly communicating what you see, experience or are passionate about.

What’s involved in Studio Arts?

Studio Arts emphasises innovative thinking, experimentation and analytical evaluation. The development of original, personal concepts and refinement of practical skills is also encouraged. Looking at what other artists have achieved and where they find their ideas is a key focus.

In each unit there is a practical and theory component:

Unit 1 ARTISTIC INSPIRATION and TECHNIQUES looks at where you and other artists find inspiration to assist with the generation of ideas. We experiment with a range of materials and techniques to develop your knowledge and skill in a variety of art forms.

Unit 2: DESIGN EXPLORATION and CONCEPTS looks at how we use the design process to produce a final artwork. We also explore the methods, signs and symbols artists use to communicate their ideas.

Unit 3: STUDIO PRODUCTION and PROFESSIONAL ART PRACTICES involves developing an Exploration Proposal that outlines your aim, subject matter, inspiration sources and art forms to be used. Working through the design process, you explore ideas and experiment with media to develop a range of potential directions that will influence your final artworks in Unit 4. We also research and analyse other artists and learn about artists rights.

Unit 4: STUDIO PRODUCTION and ART INDUSTRY CONTEXTS involves producing two finished artworks based on your developmental work in Unit 3. You also look at the practices of people working in arts industry and the presentation methods involved in exhibiting art work.

Visual expression is part of everyday communication. “Now we have moved out the Industrial and Information Age and into the new Conceptual Age, visual literacy has become an equally fundamental skill for 21st century kids, to that of literacy and numeracy.”(Preparing Global Citizens; Globalisation and Education, Yong Zhao, Michigan State University)

ART

(Currently selected through Distance Education)

VCE Art has been designed to encourage artistic development through personal and independent exploration. It emphasises innovative thinking and investigation and the ability to progressively develop ideas and personal concepts and refine skills. Investigations of art form(s) are an integral part of this exploratory process, as is the visual and written documentation of thinking and working practices.

VCE Art aims to develop in students the ability to respond to art in an informed and articulate manner.
**VISUAL COMMUNICATION & DESIGN**

This study is intended to assist students in the understanding, use and interpretation of a range of visual communications. It involves a study of the design elements and principles, freehand and instrumental drawing systems, information carriers and the function of design and how they are used to create effective visual communications. This study also provides the opportunity to develop an informed approach to visual communications encountered in everyday life.

**Unit 1:** This area of study enables students to develop an understanding of instrumental drawing methods and freehand drawing including drawing from observation. The unit involves the study of a range of drawing methods, including relevant Australian Standards conventions. Students develop practical skills in the application of appropriate drawing methods, design elements and principles, and information and communication technology. The unit also introduces students to the diversity of visual communication and the role of the design process in visual communication production.

**Unit 2:** The purpose of this unit is to enable students to develop and refine practical skills by generating images and developing them through freehand drawing, instrumental drawing and the use of information and communications technology. In the development of visual communications, this unit enables students to develop an awareness of how the design process facilitates exploration and experimentation and how information and ideas are communicated.

**Unit 3:** This area of study enables students to develop an understanding of visual communication production through the application of the design process to satisfy specific communication needs. Within the unit, students consider existing visual communications and analyse and evaluate examples. Students also investigate the production of visual communications in a professional setting and examine the nature of professional practice in the design and production of visual communications.

**Unit 4:** The purpose of this unit is to enable students to apply their knowledge of the components of the design process in the preparation of one design brief. Students apply their practical skills to the development and production of two distinct final communication presentations through application of the design process and based on the requirements of the brief.
COMMERCE

ACCOUNTING

Accounting is not just a subject for would be accountants. Everyone is responsible for managing their income against their expenditure and studying accounting can help you do this. Learn how to record financial data information individually and for a business, both manually and using computers. Accounting will also help you understand what is happening in the news and where you should invest your spare fortune.

**Unit 1:** We look at establishing a small business and what is involved in this process. The recording of business inflows and outflows is then examined and basic systems put in place for cash transactions.

**Unit 2:** We extend recording to include credit transactions and examine different ways to record stock movements. We also start to develop financial statements such as Profit and Loss and Balance Sheet.

**Unit 3:** Develop a double entry accounting system which covers a broader range of transactions. We now include adjustments for balance day adjustments, GST, non-cash items etc. We also learn how to record the information in more detailed records.

**Unit 4:** After recording data what do we do with it? This unit covers how we use the information prepared in unit three. We look at how to assess a business’ performance and make decisions for the future.

BUSINESS MANAGEMENT

Business Management examines the ways in which people at various levels within a business organisation manage resources to achieve the objectives of the organisation. The study recognises that there is a range of management theories rather than a single theory of management. Each unit examines some of these theories and, through exposure to real business scenarios and/or direct contact with business, tests them against management in practice.

Business Management gives you an insight into the skills required to start up and run your own business or even just work in one! Covers some basic stuff on the business world, drawing up a business plan and an area of our choice.

**Unit 1:** Studies generic business concepts, which apply to the management of organisations of varying size, complexity or industry setting. It also involves a consideration of the range of activities related to planning and operation of a small business.

**Unit 2:** Studies how change affects management and investigates how management responds. It also involves consideration of the relationship of management with the operating environment and the planning and marketing processes. This unit focuses on several aspects of management: management in a time of change, management as a communication process, management as a planning process to position its products in the marketplace.

**Unit 3:** Examines the role and importance of large-scale organisations to the Australian economy. It considers management styles and skills and the management of change.

**Unit 4:** Examines the human resource management practices and processes and the operations management practices and processes in large-scale organisations in Australia.
VCE Legal Studies is not just for students who want to be lawyers. It provides an opportunity to develop knowledge and skills that are applicable in everyday life. Many careers and tertiary courses involve having some knowledge of the law. For example jobs in retail, computers, most trades and anything working with children have legal obligations and responsibilities. Also courses in nursing, business, science, technology, medicine and engineering generally have compulsory legal components, and having a general background in law can be very beneficial. This study is about the way the law relates to and serves both individuals and the community. It focuses on developing an understanding of the way in which law is generated, structured and operated in Australia and around the world. As well as studying theory, students are able to experience the laws operation through real life case studies, visits to places such as Barwon Prison, J Ward, local and urban courts and through guest speakers.

**Unit 1:** In this unit we look at where our laws come from and what makes a good law. We then focus mainly on criminal law. This includes studying what the law is on things such as murder and culpable driving, what defenses are available and looking at relevant case studies. We examine the criminal process starting with the committing of a crime, through the steps involved in a police investigation, the court process and punishments.

**Unit 2:** This unit focuses on civil law. It looks at the processes and procedures involved in civil litigation and the possible defenses. We also look at the increasing number of alternatives to going to court for things such as neighbourhood, employment, relationship and friendship disputes. There is also the opportunity to investigate current legal issues such as euthanasia, same sex marriage, wills, human rights etc.

**Unit 3:** We study in detail how laws are made in Australia: who makes them, why, how and whether they are effective. People assume that they have many rights in their day to day life, but is this really the case. Are they written down somewhere for you to find? What about other countries such as America or South Africa? We shall find out.

**Unit 4:** We look at what occurs once a criminal or civil dispute occurs. This includes all the pre-trial, trial and post trial events and an in-depth investigation into the jury system. We also look at alternative legal systems and compare them to Australia.
ECONOMICS

(Currently selected through Distance Education)

Economics focuses on decisions about how production occurs, how resources are allocated and how proceeds of production are distributed. These economic decisions not only affect the wellbeing of particular nations and their people but also increasingly influence living standards regionally and globally.

**Unit 1:** Focuses on the study of economic decision making and economic issues of importance to the Australian economy in the twenty-first century.

**Unit 2:** Focuses on the study of Australia's external relationships and economic issues of importance in the global economy in the twenty-first century.

**Unit 3:** The focus of this unit is the study of economic activity in Australia and the factors that affect achievement of the objectives of the Australian economy.

**Unit 4:** The study of this unit is the study of the management of the Australian economy, which concentrates on budgetary, monetary and microeconomic policy used by the Australian Government.
HEALTH AND P.E.

HEALTH AND HUMAN DEVELOPMENT

Unit 1: Youth health and development
This unit provides an opportunity for students to explore the physical, social, emotional and intellectual changes that occur and the inherited and environmental factors that influence health and development. Students will also identify a range of challenges, and have the opportunity to investigate one challenge in detail and justify recommendations for action that could optimise health and development of youth during the transition from childhood to adulthood.

Unit 2: Individual and community health and development.
In this unit students explore the requirements for optimal health and development throughout childhood and adulthood, and investigate inequitable health and development outcomes that can occur as a result of social and environmental factors. Students will also examine the organisation and delivery of health care in Australia and critically evaluate its effectiveness in promoting health and development for all Australians.

Unit 3: Nutrition, health and development.
Australians are amongst the healthiest people in the world. However a diversity of health outcomes are evident within our population, as a result of a range of determinants that include factors such as biology, socio-economic, environment, inherited lifestyle, behaviour, knowledge, attitudes and beliefs. In this area of study, students will develop an understanding of the health status of Australians by investigating the burden of disease, researching the health of population groups in Australia and accounting for inequities in health status. Students will explore the determinants of health with particular emphasis on nutrition and food intake and explain the role of nutrition in public health.

Unit 4: Global health and development.
This unit enables students to examine the developmental changes that occur as individuals move through the lifespan and explore the inherited factors that determine developmental potential. Students will also analyse the impact of a range of environmental factors that contribute to variations in health and developmental outcomes both between and within Industrialised [Australia] and developing countries. By comparing similarities and differences in health and development outcomes at a global level, students will be able to evaluate the determinants of optimal health and development and the range of sustainable health care initiatives developed by governments and international agencies to optimise health and development globally.
PHYSICAL EDUCATION

Unit 1 - Bodies in motion
In this unit students explore how the body systems work together to produce movement and analyse this motion using biomechanical principles. Through practical activities students explore the relationships between the body systems and physical activity. They are introduced to the aerobic and anaerobic pathways utilised to provide the muscles with the energy required for movement and the basic characteristics of each pathway. Students apply biomechanical principles to improve and refine movement. They use practical activities to demonstrate biomechanical principles and how the correct application of biomechanics can lead to improved performance in sport and physical activity.

Unit 2 - Sports coaching and physically active lifestyles
This unit explores a range of coaching practices and their contribution to effective coaching and improved performance of an athlete. The way in which a coach influences an athlete can have a significant effect on performance. The approach a coach uses, the methods applied and the skills used will have an impact on the degree of improvement experienced by an athlete. By studying various approaches and applying this knowledge to a practical session, students gain a practical insight into coaching.

Students are introduced to physical activity and the role it plays in the health and wellbeing of the population. Through a series of practical activities, students gain an appreciation of the level of physical activity required for health benefits and investigate how participation in physical activity varies across the lifespan. They explore a range of factors that influence participation in regular physical activity, and collect data to identify perceived barriers and the ways in which these barriers can be overcome.

Unit 3 - Physical activity participation and physiological performance
This unit introduces students to an understanding of physical activity and sedentary behaviour from a participatory and physiological perspective. Students apply various methods to assess physical activity and sedentary levels, and analyse the data in relation to adherence to Australia’s Physical Activity and Sedentary Behaviour Guidelines. Students study and apply the social-ecological model to identify a range of Australian strategies that are effective in promoting participation in some form of regular activity. Students investigate the contribution of energy systems to performance in physical activity. In particular, they investigate the characteristics of each system and the interplay of the systems during physical activity. Students explore the multi-factorial causes of fatigue and consider different strategies used to delay and manage fatigue and to promote recovery.

Unit 4 - Enhancing performance
Improvements in performance, in particular fitness, depend on the ability of the individual or coach to gain, apply and evaluate knowledge and understanding of training. Students undertake an activity analysis. Using the results of the analysis, they then investigate the required fitness components and participate in a training program designed to improve or maintain selected components. Athletes and coaches aim to continually improve and use nutritional, physiological and psychological strategies to gain advantage over the competition. Students learn to critically evaluate different techniques and practices that can be used to enhance performance, and look at the rationale for the banning or inclusion of various practices from sporting competition.
VCE Biology enables students to investigate the processes involved in sustaining life at cellular, system, species and ecosystem levels. In undertaking this study, students examine how life has evolved over time and understand that in the dynamic and interconnected system of life all change has a consequence that may affect an individual, a species or the collective biodiversity of Earth.

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

In this unit students explain what is needed by an organism to stay alive. They are introduced to some of the challenges for organisms in sustaining life. Students examine the cell as the structural and functional unit of life and the requirements for sustaining cellular processes in terms of inputs and outputs. Types of adaptations that enhance the organism’s survival in a particular environment are analysed, and the role that homeostatic mechanisms play in maintaining the internal environment is studied. Students consider how the planet’s biodiversity is classified and investigate the factors that affect population growth.

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

In this unit students focus on asexual and sexual cell reproduction and the transmission of biological information from generation to generation. 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 explain the inheritance of characteristics, analyse patterns of inheritance, interpret pedigree charts and predict outcomes of genetic crosses. They consider the role of genetic knowledge in decision-making about the inheritance of various genetic conditions. In this context the uses of genetic screening and its social and ethical issues are examined.

**Unit 3: This unit is heavily reliant on a study of the large molecules of life; proteins, carbohydrates, DNA and fatty acids. An understanding of basic chemistry is an asset. Students examine the mechanisms of metabolism and energy production at a cellular level. The immune system is also studied.**

**Unit 4: Explores the mechanisms of inheritance, genes, DNA, mitosis and meiosis, and the causes of variation, leading to investigation of the origins and diversity of living organisms. Recent advances in technology, including biotechnology, are also considered.**
Unit 3: How do cells maintain life?
In this unit students investigate the workings of the cell from several perspectives. These different perspectives enable consideration of both the capabilities and the limitations of living organisms whether animal, plant, fungus or microorganism. Students examine the key molecules and biochemical pathways involved in cellular processes both within the cell and between cells. At this molecular level students study the human immune system and the interactions between its components to provide immunity to a specific antigen.

Unit 4: How does life change and respond to challenges over time?
In this unit students consider the continual change and challenges to which life on Earth has been subjected. They examine change in life forms, investigate the relatedness between species and consider the impact of various change events on a population’s gene pool. Students explore the structural and cognitive trends in the human fossil record and the interrelationships between human biological and cultural evolution. The biological consequences, and social and ethical implications, of manipulating the DNA molecule and applying biotechnologies are explored for both the individual and the species.
CHEMISTRY
(New Study Design in 2016)
VCE Chemistry enables students to explore the nature of chemicals and chemical processes. In undertaking this study, students apply chemical principles to explain and quantify the behaviour of matter, as well as undertake practical activities that involve the analysis and synthesis of a variety of materials.

Unit 1: How can the diversity of materials be explained?
The development and use of materials for specific purposes is an important human endeavour. In this unit students investigate the chemical properties and practical applications of a range of materials including metals, crystals, polymers, nanomaterials and giant lattices. They explore and explain the relationships between properties, structure and bonding forces within and between particles that vary in size from the visible through to nanoparticles, molecules and atoms. Students 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-base and redox. They are introduced to stoichiometry and to analytical techniques and instrumental procedures analysis, and apply these to determine concentrations of different species in water samples, including chemical contaminants. Students explore the solvent properties of water in a variety of contexts and analyse selected issues associated with substances dissolved in water.

Unit 3: Chemical Pathways. Students undertake qualitative and quantitative analysis for a range of chemical reactions involving solids, liquids and gases. Instrumental methods of analysis are investigated culminating in an excursion to an analytical laboratory in Geelong, to undertake experiments using these instruments. Organic chemistry is again studied with students applying this knowledge to the synthesis of proteins and fatty acids and the structure and action of enzymes and DNA.
Unit 4: Chemistry at work. Students investigate the rate of chemical reactions and how this can be measured and analysed. The concept of equilibrium is then applied to the properties and reactions of acids and bases. The production of an industrial chemical is investigated linking this process to the knowledge obtained about reaction rates and equilibrium. Energy from chemical reactions is further studied and applied to the production and use of electricity in chemical reactions, especially focusing on the use of fuel cells and how electricity is used to extract aluminium.

(New Study Design in 2017)

Unit 3: How can chemical processes be designed to optimise 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 minimisation 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. They apply the equilibrium law and Le Chatelier’s principle to predict and explain the conditions that will improve the efficiency and percentage yield of chemical processes.

Unit 4: How are organic compounds categorised, analysed and used?
Carbon is the basis of the diverse compounds found in living tissues and in the fuels, foods, medicines and many of the materials we use 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 chemicals in 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**

(New Study design in 2016)

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 systems 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.

Each unit contains three areas of study.

**Unit 1: What ideas explain the physical world?**

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

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

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

**UNIT 3:** Core units are Analysis of Motion in one and two dimensions; and Electronics and Photonics which cover electronic circuits using common components and the use of light sensitive electronic components (photonics).

**UNIT 4:** Core studies include Interactions of Light and Matter; and Electrical Power, covering its generation, distribution and use.

**Unit 3 and 4 Detailed Study:** One detailed Study will be chosen from:

- Einstein’s Relativity,
- Investigating Structures and Materials,
- Further Electronics,
- Synchrotron and its Applications,
- Photonics or
- Recording and Reproducing Sound.
Unit 3: How do fields explain motion and electricity?

Students explore the importance of energy in explaining and describing the physical world. They examine 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 the interactions, effects and applications of gravitational, electric and magnetic fields including the design and operation of particle accelerators. Students use Newton’s laws and Einstein’s theories to investigate and describe motion. Students design and undertake investigations involving at least two independent variables, with at least one of the independent variables being continuous. A student-designed practical investigation related to waves, fields or motion.

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

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 behaviour. Students further investigate light by using a particle model to explain its behaviour. A wave model is also used to explain the behaviour of matter which enables students to consider the relationship between light and matter. Students are challenged to think beyond the concepts experienced in everyday life to study the physical world from a new perspective.
Psychology (New Study Design in 2016)

Psychology is a fascinating science, concerned with the study of the mind and behaviour. After English and Maths, VCE Psychology consistently attracts high numbers of students. The areas of study have direct relevance to students’ current stage of life. Students explore the complex interactions between biological, psychological and social factors that influence human thought, emotions and behaviour. In undertaking this study, students apply their learning to everyday situations including workplace and social relations. They gain insights into a range of psychological health issues in society.

Unit 1: How are behaviour and mental processes shaped?

We look at how the brain functions – its structure, how it works and the role it plays in the overall functioning of the human nervous system. We explore brain plasticity and the effect that brain injury, for example concussion, may have on a person’s psychological functioning. We consider the complex nature of psychological development: the way we develop emotionally and socially, as well as how our thinking develops. We look at factors of mental health that assist individuals to cope, as well as situations where psychological development goes wrong – psychological, personality and psychotic disorders.

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

Sensation and perception. Using taste and vision as examples, we consider how information from the external environment is detected and then perceived and understood. We investigate how different factors can cause distortions of perceptions. How are people influenced to behave in particular ways? We look at social influence on behaviour, such as the development of attitudes, stereotypes, prejudice. We also investigate the influence of status and social power, helping behaviour, bullying (including cyber bullying) and the influence of media (such as television, social media on individual and group behaviour).

Unit 3: The self and others

Mind, brain and body: Who do I think and feel the way I do? How does my brain work? What happens when I sleep? We look at how the brain and nervous system work in relation to our self-awareness, interactions with the environment and our behaviour. We explore the relationships between consciousness and thoughts, feelings and behaviour, with a particular focus on sleep. Memory: How are memories formed? Can I improve my memory? We look at how our memory works. This area of study is full of interesting and practical concepts you can use in the rest of your school work, most notably, how to make best use of your memory.

Unit 4: Brain, behavior and experience

Learning

How do we learn? How important are role models in shaping behaviour? Learning is an important part of our everyday lives. We look at how we learn and some different types of learning. Mental health: What does mental health mean? How can ‘normality’ be defined? Is feeling stressed ‘normal’? What is the relationship between mental health and illness? How can mental wellbeing be enhanced? We look at how biological, psychological and sociocultural factors interact to contribute to our mental well-being. We learn about the relationship between stress and mental health, along with strategies for coping with stress. We also explore the causes of mental illness, look at a specific mental disorder in depth and learn about factors that promote mental wellbeing, as well as assistance that is available.
Unit 3: How does experience affect behaviour and metal processes?

The nervous system influences behaviour and the way people experience the world. In this unit students examine the functioning of the nervous system to explain how a person can interact with the world around them. They explore how stress may affect a person’s psychological functioning and consider the causes and management of stress. Students investigate how mechanisms of memory and learning lead to the acquisition of knowledge, the development of new capacities and changed behaviours. They consider the limitations and fallibility of memory and how memory can be improved.

Unit 4: How is wellbeing developed and maintained?

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

HISTORY
(New unit of study in 2016)
Global Empires
Unit 1 – The Making of Empires 1400-1775
The Early Modern era, 1400 –1775, was a time of transition between medieval feudalism and the modern, secular nation-state. At the dawn of the era, international trade was dominated by three powerful empires – the Venetian Empire, China under the Ming dynasty and the Ottoman Empire – who between them controlled key industries, commodities and trade hubs including the Silk Road. Emerging powers Portugal, Spain, France, Britain and the Netherlands sought to circumvent the power of these established empires by gaining access to goods through alternative means and routes. By harnessing new knowledge and technology, they launched voyages of exploration to the Asia-Pacific, the Americas and Africa.

Around the same time, new ideas were emerging to disrupt traditional beliefs and institutions. The Ptolemaic model, which placed Earth at the centre of the universe, was challenged by Copernicus and taken up by Galileo and other scholars of the Scientific Revolution (c. 1550 –c. 1700). The Catholic Church was threatened by both new scientific knowledge and the Protestant Reformation (1517–c. 1648) which questioned Rome’s divine authority. The new paradigm of empiricism questioned assumptions and beliefs about godly intervention in the natural world. Gutenberg’s printing press (c. 1450) allowed ordinary people, for the first time in history, to circulate ideas without mediation by officials, leading the way for new debates about individualism, rights and liberties during the Enlightenment (c. 1650 –1790s).

Unit 2 -Empires at Work
In this unit students explore the operation of European colonies and the challenges they faced from within and without.

In the Early Modern period, 1400 –1775, new empires began to establish colonies and to trade on a global scale. Britain, France, the Netherlands, Spain, Portugal, Russia and the Ottoman Empire gained colonial possessions in a number of continents. The Mughals in India and the Ming and Qing dynasties in China gained control over vast territories but these were regional rather than global in reach. Through the ‘Columbian exchange’ that followed Christopher Columbus’ arrival in the New World, technologies, plants, animals, culture and diseases began to travel between continents. Gradually, humans began to be traded as commodities too, as the triangular slave trade across the Atlantic drew in nearly all of the major empires. This trafficking in human misery was not ended until the abolition movements of the Modern era. Despite their profitability, colonies brought a number of difficulties. Indigenous peoples resisted colonisation, settler societies were complex and unpredictable and colonies were a drain on resources. Rival powers jostled for advantage, alliances and resources. The many wars waged between Early Modern empires culminated in all-out global warfare in the Seven Years’ War (1754– 63). Britain’s success in this war led to a period of dominance which lasted well into the twentieth century.

In each area of study, students should study in depth at least one European colony in the Americas, Africa or the Caribbean.
**HISTORY**

**Australian History (only in 2016)**

**Unit 3** Australian History by exploring the growth of our own nation – from the decision to establish a penal colony on the shores of NSW in 1788, in ‘terra nullius’ a so called ‘empty land’, to present-day dilemmas about national independence. We specifically examine what Victoria was like when it was known as the Port Phillip district. Who lived here and what happened? We then go on to study what our nation looked like at the time of federation, and the visions that we had for the future.

**Unit 4** Australian history is concerned with the various conflicts and crisis that tested the nation and how our citizens reacted. We examine attitudes to these conflicts and how they have shaped the nation.

VCE History is fun, informative and character building.

**Units 3 and 4 – Revolutions**

(New Study Design in 2017)

In Units 3 and 4 Revolutions students investigate the significant historical causes and consequences of political revolution. Revolutions represent great ruptures in time and are a major turning point which brings about the collapse and destruction of an existing political order resulting in a pervasive change to society. Revolutions are caused by the interplay of ideas, events, individuals and popular movements. Their consequences have a profound effect on the political and social structures of the post-revolutionary society. Revolution is a dramatically accelerated process whereby the new order attempts to create political and social change and transformation based on a new ideology.

Progress in a post-revolutionary society is not guaranteed or inevitable. Post-revolutionary regimes are often threatened internally by civil war and externally by foreign threats. These challenges can result in a compromise of revolutionary ideals and extreme measures of violence, oppression and terror.

In these units students develop an understanding of the complexity and multiplicity of causes and consequences in the revolutionary narrative. They construct an argument about the past using primary sources as evidence and evaluate the extent to which the revolution brought change to the lives of people. They consider how perspectives of the revolution give an insight into the continuity and change experienced by those who lived through dramatic revolutionary moments.

Students evaluate historical interpretations about the causes and consequences of revolution and the effects of change instigated by the new order.

In developing a course, teachers select two revolutions to be studied from the following, one for Unit 3 and one for Unit 4:

- The American Revolution of 1776.
- The French Revolution of 1789.
- The Russian Revolution of October 1917.

For the two selected revolutions, both areas of study must be undertaken. Students are expected to demonstrate a progression from Unit 3 to Unit 4 in historical understanding and skills.
**JAPANESE (SECOND LANGUAGE)**

Japanese has been identified as one of the priority languages from the Asia-Pacific region to be taught in Australian schools. This recognises the close economic and cultural ties between the two countries. The study of a Language Other Than English contributes to the overall education of students, most particularly in the area of communication, but also the areas of cross-cultural understanding, cognitive development, literacy and general knowledge.

**UNIT 1:** The areas of study comprise themes and topics, grammar text types, vocabulary and kinds of writing. This unit should allow the student to establish and maintain a spoken or written exchange, listen to, read and obtain information from written and spoken texts and produce a personal response to a text focusing on real or imaginary experience.

**UNIT 2:** The areas of study comprise themes and topics, grammar text types, vocabulary and kinds of writing. This unit will allow the student to participate in a spoken or written exchange, listen to, read and extract and use information and ideas from spoken and written texts and give expression to real or imaginary experience in written or spoken form.

**UNITS 3 and 4:** The areas of study comprise themes and topics, grammar text types, vocabulary and kinds of writing. In these units students undertake a detailed study of either Language and Culture through texts, or Language and Culture through VET. Students should be able to express ideas through the production of original texts, analyse and use information from spoken and written texts and exchange information, opinions and experiences. They should also be able to respond critically to spoken and written texts which reflect aspects of the language and culture of Japanese-speaking communities.
GEOGRAPHY
(Currently selected through Distance Education)
(New Study design in 2016)
VCE Geography enables students to examine natural and human phenomena, how and why they change, their interconnections and the patterns they form across the Earth’s surface. In doing so, they develop a better understanding of their own place and its spaces and those in other parts of the world. These spatial perspectives, when integrated with historical, economic, ecological and cultural perspectives, deepen understanding of places, environments and human interactions with these.

Unit 1: Hazards and disasters
In this unit students undertake an overview of hazards before investigating two contrasting types of hazards and the responses to them by people. Hazards include a wide range of situations including those within local areas, such as fast moving traffic or the likelihood of coastal erosion, to regional and global hazards such as drought and infectious disease. Students examine the processes involved with hazards and hazard events, including their causes and impacts, human responses to hazard events and interconnections between human activities and natural phenomena. This unit investigates how people have responded to specific types of hazards, including attempts to reduce vulnerability to, and the impact of, hazard events.

Unit 2: Tourism
In this unit students investigate the characteristics of tourism, with particular emphasis on where it has developed, its various forms, how it has changed and continues to change and its impacts on people, places and environments. The study of tourism at local, regional and global scales emphasises the interconnection within and between places. There is an interconnection between places tourists originate from and their destinations through the development of communication and transport infrastructure, employment, together with cultural preservation and acculturation. The growth of tourism at all scales requires careful management to ensure environmentally sustainable and economically viable tourism. Students undertake fieldwork in this unit and report on fieldwork using the structure provided.

UNIT 3: This unit investigates the characteristics of resources and concept of region.

UNIT 4: Investigates the geographic characteristics of global phenomena and their impact on people and places. Global phenomena are major natural or human events or processes that affect significant parts of the globe. This unit also focuses on the ways in which people and organisations respond to the impact of global phenomena.
**GEOGRAPHY**
(New Study Design in 2017)

**Unit 3: Changing the land**
This unit focuses on two investigations of geographical change: change to land cover and change to land use. Students investigate three major processes that are changing land cover in many regions of the world. Students investigate the distribution and causes of these three processes. At a local scale students investigate land use change using appropriate fieldwork techniques and secondary sources. They investigate the scale of change, the reasons for change and the impacts of change. Students undertake fieldwork and produce a fieldwork report using the structure provided.

**Unit 4: Human population – trends and issues**
In this unit students investigate the geography of human populations. They explore the patterns of population change, movement and distribution, and how governments, organisations and individuals have responded to those changes in different parts of the world. Population movements such as voluntary and forced movements over long or short terms add further complexity to population structures and to economic, social, political and environmental conditions.
TECHNOLOGY

FOOD AND TECHNOLOGY

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

UNIT 1: This unit provides students with the opportunity to investigate the best methods and tools and equipment to use for optimum results, and what to prepare for a range of situations. Students research, analyse and apply the most suitable food preparation and cooking methods to optimize the sensory, physical and chemical properties of food. Students investigate quality and ethical considerations in food selection.

UNIT 2: This unit provides students with the opportunity to investigate the best methods and tools and equipment to use for optimum results, and what to prepare for a range of situations. Students research, analyse and apply the most suitable food preparation and cooking methods to optimise the sensory, physical and chemical properties of food. Students work both independently and as members of a team to research and implement solutions to a design brief. In preparing food the student takes into account nutritional considerations, social and cultural influences and resources available.

UNITS 3 and 4: Students in unit 3 develop an understanding of food safety in Australia. They apply safe work practices while preparing food. They investigate and justify cooking techniques when preparing key foods. Students develop an understanding of the primary and secondary process that are applied to key food. They also preserve food to prevent spoilage. Students develop a design brief from which they develop a detailed design plan. Students in unit 4 develop individual production plans for the proposed four to six food items and implement the design plan they established in unit 3. Students examine food product development and research and analyse driving forces that have contributed to product development. In addition food packaging systems and marketing is investigated.
PRODUCT DESIGN AND TECHNOLOGY

This study engages students in technological tasks that call on their knowledge and understanding of materials and production processes to design and make products suitable for their intended purpose. Students also have opportunities to undertake production activities often related to industrial and commercial practices. Students find a client; they solve a problem for them by designing and constructing a product made from a range of materials. Students learn to draw ideas using the computer, then transfer these ideas into a practical model.

UNIT 1: This unit focuses on the distinctive properties of materials, the selection of materials for specific purposes and the tools, equipment and machines used to process materials.

UNIT 2: This unit focuses on the origins of products, the considerations and constraints that may be imposed as products are developed and the impact of these constraints on product solutions.

UNITS 3 and 4: In these units students explore the complex forces involved in the design and development of a product for the mass market. They also focus on how judgments of products can be informed by a comparison of products in terms of their quality, usefulness and appeal. The role and influence of product promotion and marketing are also considered.
The Victorian Certificate of Applied Learning (VCAL) is a qualification that is accredited at three levels: Foundation, Intermediate and Senior. It is designed to improve the pathways for young people from secondary school to work and/or further education and training. The VCAL will help each student improve their literacy and numeracy, acquire work and industry skills, increasing their employability. Students will gain experience in the adult world of work and get a qualification that helps them prepare for a job, apprenticeship, traineeship, further education and/or training.

**Timboon P 12 offers Foundation, Intermediate (year 11) and Senior (year 12)**

A successful VCAL program must contain all of the four compulsory Curriculum Strands, and contain a minimum of 10 units. Satisfactory completion of all 10 units will enable a student to gain a VCAL Certificate at the end of one year. They may then return the following year to complete another VCAL program at a higher level.

VCAL is focused on applied learning and sits alongside the VCE. Programs are made up of:

1. Four units from the compulsory curriculum strands each semester
   - Literacy
   - Numeracy
   - Personal Development Skills (PDS)
   - Work related skills (WRS) ; work placement 1 day per week

AND

2. At least one additional unit each semester:
   - Units from VCE blocking grids
   - A VET unit (see VET descriptions). This is a compulsory component and all students must enroll in a VET Unit, in order to achieve VCAL accreditation

**A TOTAL OF 12 UNITS (6 PER SEMESTER)**

The learning program must also provide opportunities in which the student can develop and apply personal, social, and work-related skills to foster a commitment to learning and to prepare him/her for the world of work.

Any VCE units completed as part of a student’s VCAL will count towards their VCE, if they decide to enroll in the VCE at a later stage. VCE results, including those for VET in the VCE, can be readily transferred and credited in this way. 

**SAMPLE PROGRAM**

Work placement students are required to organize a work placement for every work placement day (Mondays, or another negotiated day). This must be done within the first four weeks of term 1.

<table>
<thead>
<tr>
<th>DAY</th>
<th>UNITS / MODULES</th>
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<tbody>
<tr>
<td>Tuesday, Wednesday, Friday</td>
<td>School based units – literacy, numeracy, personal development and work related skills, VCE unit</td>
</tr>
<tr>
<td>Monday</td>
<td>Structured Work Placement</td>
</tr>
<tr>
<td>Thursday</td>
<td>A VET unit at school or provider</td>
</tr>
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</table>
VCE VET

VCE VET programs are vocational studies approved by the VCAA as appropriate for senior secondary students. VCE VET programs lead to a nationally recognised qualification, thereby offering students the opportunity to gain both the VCE and a nationally portable vocational education training certificate. VCE VET programs are fully recognised within the unit 1-4 structure of the VCE and therefore may contribute towards satisfactory completion of the VCE. VCE VET units have equal status with other VCE studies. The aims of VCE VET programs are to

- Provide students with the skills and abilities to achieve competencies that will enhance their employment and further training prospects in a particular industry.
- Provide students with ‘work ready’ knowledge and skills applicable to a career path in the related industry.

AUSTRALIAN TERTIARY ADMISSION RANK (ATAR) and VCE VET

Where Study Scores are not available
The contribution to the ATAR is as follows:
- Any contribution to the ATAR is subject to completion of the specified unit 3-4 sequence.
- Students who successfully complete the unit the unit 3-4 sequence will receive one ATAR increment. An increment is calculated as 10 per cent of the average of the scaled scores of the student’s primary four VCE studies.

When Study Scores become available in the respective VCE VET subjects, students who choose not to take a Study Score will not be eligible for an ATAR increment.

It is possible for students to undertake VET studies off Campus. For this to happen the school must enter into an agreement to purchase the delivery and assessment of modules of work from a registered provider (RTO). These providers are typically TAFE colleges, colleges, private providers, group training companies, industry organisations.

PLEASE NOTE

A VET fee is levied against each VET program to contribute towards off-setting some of the costs of purchasing programs. (Subject to Government directions)

REPORTING

VCE VET units are reported on the student’s VCE Statement of Results, together with other VCE units completed. Students receive from the VCAA a separate VCE VET Statement of Results listing all units of competence achieved. The student receives ‘S’ for each unit of competence achieved. The VET Statement of Results includes only units of competence for which the student has been awarded as “S”.

CERTIFICATION

Students who complete all the requirements of a program will be awarded a certificate by the RTO (Registered Training Organisation). Partial completion is recorded on a Statement of Attainment issued by the RTO.

WORKLOAD

Typically work involved in a Unit 1-2 sequence equates to approximately 175+ hours. Equine Studies estimates approximately 360 hours. The work involved in a Unit 3-4 sequence equates to approximately 200-220 hours. Units 3 & 4 need to be completed in the same academic year for VCE recognition.

Students who decide to study a VCE VET subjects “off Campus” need to be highly motivated and able to work well on their own and manage their time effectively. If this is not “you” think carefully before committing yourself to a VCE VET subject.
VCE VET SUBJECTS UNDERTAKEN BY STUDENTS AT TIMBOON P-12 INCLUDE:

- Automotive Technology Certificate II (South West TAFE)
- Equine studies (South West TAFE) Glenormiston Campus
- Retail Certificate II (South West TAFE)
- Building Construction Certificate II (South West TAFE)
- Engineering Certificate II (South West TAFE) Timboon
- Hospitality Certificate II Timboon
- Certificate III Music Industry (Foundation) Timboon
- Certificate III Music – Timboon
- Certificate III Concept Development (clothing) Warrnambool
- Certificate II Multimedia (2nd year Certificate III) Warrnambool
- Certificate II Animal Welfare (On line) GoTAFE – Goulburn Ovens
- Certificate II Furnishings (Warrnambool) – pre-apprenticeship
- Certificate II Community Services (Childcare)
- Certificate II Horticulture (Landscaping)
- Certificate II in Makeup (South West TAFE)
- Certificate II in Hairdressing (South West TAFE)
- Certificate III in Visual Arts and Contemporary Craft (South West TAFE)

Other subjects may be available through South West TAFE.

PART-TIME APPRENTICESHIPS AND TRAINEESHIPS or SBA’s (SCHOOL BASED APPRENTICESHIPS)
This is another pathway option for students to study their VCE, work part time, get paid and get credit in the VCE for the work they do. Students need to have a recognised part time traineeship in the work force. They need to complete approximately 200 days of training on the job, off the job and paid employment over either:

- Two years (average 15 hours per week)
- or three years (averaging 10 hours per week).

Courses are available in any recognised training Certificate – at least at a Certificate II level

Students at Timboon have traditionally taken up traineeships in – hospitality, agriculture, retail.
CERTIFICATE II IN ENGINEERING

The Certificate II in Engineering Studies provides students with a solid foundation in the basic principles of engineering. It focuses on four main areas: Fabrication, Electrical/Electronics, Production and Mechanical. Students gain an overview of engineering and the career opportunities available.

Possible Job Outcomes

The course provides students with an increased opportunity to gain an apprenticeship in Fitting and Turning or Electrical and Metal Fabrication.

Special Requirements:  Student workbook, safety glasses, project material, overalls, safety boots, hat and drawing equipment.

Contribution to the VCE

The certificate II in Engineering Studies provides a Unit 1-4 sequence for satisfactory completion purposes.

There is scored assessment and the study score can be fully counted as one of the student’s best four studies for ENTER purposes, or will count as a fifth or sixth study increment.

Units: Year one:- apply principles of Occupational Health and Safety in work environment; develop an individual career plan for the engineering industry; perform basic machining process; apply basic fabrication techniques; use computers for engineering related work activities; apply basic computational principles in engineering work activities; use hand tools.

Note: The computer module is currently completed at TAFE (Warrnambool Campus) – 2-3 days.

Units: Year two:- Apply electro technology principles in an engineering work environment, produce basic engineering sketches and drawings; use basic engineering concepts to plan the manufacture of engineering components; handle engineering materials, produce basic engineering components and products using fabrication and machining.

Note: The electrical module is currently completed At TAFE (Warrnambool) – 3 days.

VET Engineering students: manufacturing shelving for the Engineering room.
CERTIFICATE II IN HOSPITALITY (OPERATIONS)

The VET in VCE program Certificate II in Hospitality (Operations) aims to provide young people with the opportunity to gain entry level training and skill development in areas leading to Commercial Cookery, Food and Beverage Services and Accommodation Services. The program provides a means of enhancing prospects of employment and career pathways within the hospitality industry together with articulation to a range of tertiary courses.

VCE VET Hospitality units 1 and 2 (minimum 186 hours required) provide an overview of the Hospitality Industry and the potential career paths within it. In addition, these units provide training and skill development and the opportunity for students to become competent in areas leading to Food and Beverage Service, Front Office, Housekeeping and Commercial Cookery.

The VET in VCE program is fully recognised within the unit's 1-4 structure of the VCE and by successfully completing VCE VET units 1 and 2 in Hospitality; students receive a Certificate II in Hospitality (Operations). Students completing VCE VET units 3 and 4 participate in an enhancement program to gain credit units towards a Certificate III qualification.

The Training Package incorporates the following Modules.
- Clean and maintain premises.
- Develop and update Hospitality Industry Knowledge.
- Develop and update local knowledge.
- Follow health, safety and security procedures.
- Follow workplace hygiene procedures.
- Organise and prepare food.
- Present food.
- Provide Responsible Serving of Alcohol.
- Use basic methods of cookery.
- Work in a socially diverse environment.
- Work with colleagues and customers.
- Answering the telephone.
CERTIFICATE II IN MUSIC INDUSTRY (FOUNDATION)

Certificate II in Music Industry (Foundation) is designed to provide students with broad based knowledge and skills required to be able to work in the music industry in a variety of sectors, including performance/composition, business and technology.

At the completion of Certificate II in Music Industry (Foundation) students will be able to:
- Gain an insight into the industry sectors and career opportunities
- Explain how the music industry works in their local environment
- Identify music styles, production processes and promotional opportunities
- Write a song
- Gain basic skills in performance, technology and/or business practice
- Demonstrate appropriate health, safety and security procedures
- Work with others through organising a music act and event

CERTIFICATE III IN MUSIC

Certificate III is a step up from Certificate II and is designed to provide students with a wide range of knowledge and skills to be able to maximise their employment as a performer or composer in the music industry.

At the completion of Certificate III in Music, students will be able to:
- Explain how the Australian music industry works
- Promote their works
- Build business and management skills – depending on electives taken, students will be able to:
  - Perform in a local amateur environment, in a group and/or as a soloist, using improvisation
  - Compose and arrange a song