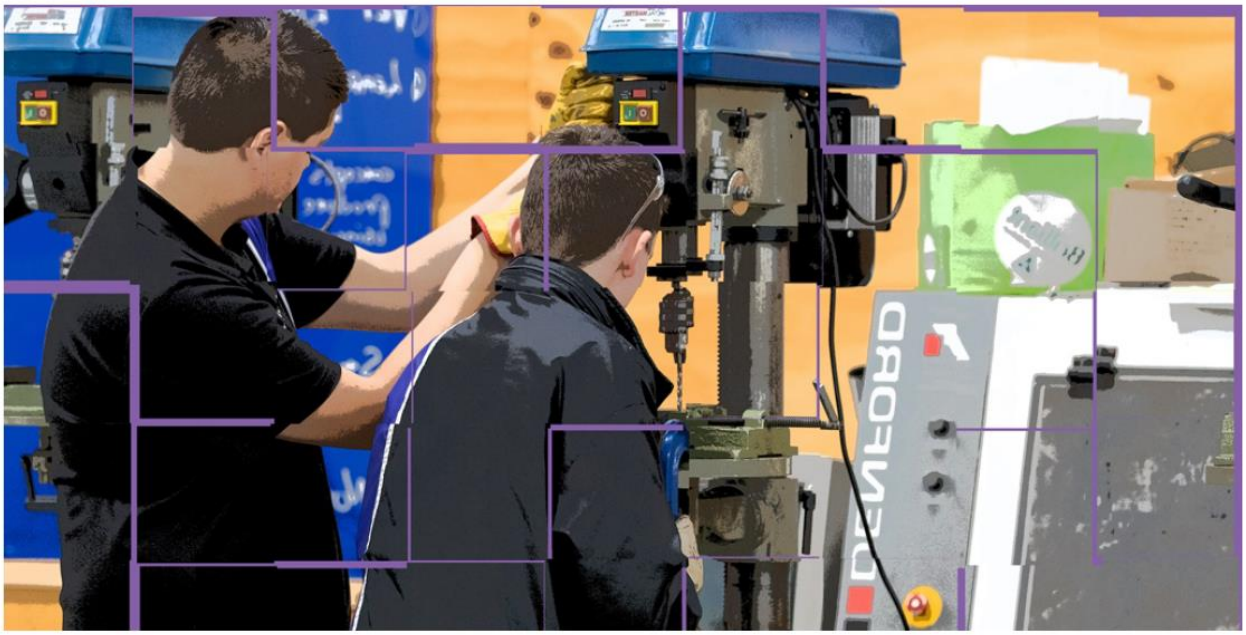
VCE HANDBOOK 2018

Northern Bay P–12 College



Includes VET options

Contents

VCE Subjects at a glance

The following table lists the units that will be offered at Northern Bay for 2018

Study	Unit 1	Unit 2	Subject fees 1&2	Excursion levy 1&2	Unit 3	Unit 4	Subject fees 3&4	Excursion levy 3&4
Accounting	✓	✓						
Biology	✓	✓		$50	✓	✓		
Business Management	✓	✓		$20	✓	✓		$30
Chemistry	✓	✓	$45		✓	✓	$45	
Computing	✓	✓	$30					
Computing: Informatics					✓	✓	$30	
English	✓	✓	$10		✓	✓	$10	$20
English (EAL)	✓	✓	$10	$60	✓	✓	$10	$60
Food Studies	✓	✓	$160		✓	✓	$160	
Geography	✓	✓		$40				
Health and Human Development	✓	✓	$20		✓	✓	$20	
History: Ancient	✓	✓		$20	✓	✓		$20
History : Twentieth Century	✓	✓		$20				
History: Revolutions					✓	✓		
Australian History					✓	✓		$22
Legal Studies	✓	✓		$20	✓	✓		$20
Literature	✓	✓	$10	$50				
Mathematics: Foundation	✓	✓		$34				
Mathematics: General	✓	✓						
Mathematics: Further					✓	✓		
Mathematics: Methods	✓	✓	$45		✓	✓	$45	
Mathematics Specialist	✓	✓			✓	✓		
Media	✓	✓	$45	$38	✓	✓	$45	$38
Music Performance	✓	✓	$30	$35				
Outdoor & Environmental Studies	✓	✓		$300	✓	✓		$300
Physical Education	✓	✓		$40	✓	✓		$40
Physics	✓	✓			✓	✓		
Product Design and Technology: Textiles	✓	✓	$60					
Product Design and Technology: Wood	✓	✓	$150	$20				
Product Design and Technology: Metal	✓	✓	$150	$20				
Psychology	✓	✓	$40	$40	✓	✓	$40	$40
Sociology	✓	✓		$20	✓	✓		$55
Studio Arts	✓	✓	$60	$55	✓	✓	$60	$55
Systems Engineering	✓	✓	$70	$20				
Visual Communication and Design	✓	✓	$40	$35	✓	✓	$40	$35

What is the VCE?

The VCE is governed by the Victorian Curriculum and Assessment Authority (VCAA) which is responsible for the curriculum, assessment and reporting of both the Victorian Certificate of Education (VCE) and the Victorian Certificate of Applied Learning (VCAL).

For further information, refer to the VCAA website: www.vcaa.edu.au

VCE studies are made up of semester length units, representing approximately 100 hours of work. Students Northern Bay P-12 College will usually study twelve Units 1 and 2 in Year 11 and ten Units 3 and 4 in Year 12. Over the two VCE years, students will aim to complete a total of 22 units from a range of studies. Units 3 and 4 must be studied as a sequence and have external assessments, while Units 1 and 2 are assessed by the College. To be awarded the VCE Certificate the minimum requirement for the VCE is satisfactory completion of 16 units which include:

- three sequential units of English
- three sequences of Units 3 and 4 studies other than English, which can include VCE VET Unit 3 & 4.

English

VCE English focuses on how English language is used to create meaning in written, spoken and multimodal texts of varying complexity. Literary texts selected for study are drawn from the past and present, from Australia and from other cultures. Other texts are selected for analysis and presentation of argument.

The study is intended to meet the needs of students with a wide range of expectations and aspirations, including those for whom English is an additional language. 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.

The study is made up of four units. Each unit deals with specific content contained in areas of study and is designed to enable students to achieve a set of outcomes for that unit.

Unit 1: **Area of study 1 – Reading and Creating Texts**
Area of study 2 – Analysing and Presenting Argument

The focus of Unit 1 is the reading of a range of texts, with comprehension, enjoyment and discrimination, development of competence and confidence in writing, and the use of and response to oral language in different contexts.

Unit 2: **Area of study 1 – Reading and Comparing texts**
Area of Study 2 – Analysing and Presenting Argument

The focus of Unit 2 is on a variety of forms of response to texts, experimentation with different written forms, and the use of oral language to interact positively, critically and confidently with audiences in formal and informal settings.

Unit 3: **Area of study 1 – Reading and Creating texts**
Area of study 2 – Analysing Argument

The focus of Unit 3 is the development of critical responses to (both print and non-print) texts, including media texts and the use of oral language to interact positively, critically and confidently with audiences in formal and informal settings. Students also develop ideas in different writing styles and forms within the framework of a chosen context.

Unit 4: **Area of study 1 – Reading and Comparing Texts**
Area of study 2 –Presenting Argument

The focus of Unit 4 English is the development of critical responses (to both print and non print texts), and the achievement of competence and confidence in writing for different purposes and audiences in a variety of forms, within the framework of a chosen context.

Literature

Unit 1: Approaches to literature

- **Area of Study 1 Reading practices**
- **Area of Study 2 Ideas and concerns in texts**

In this area of study students consider how language, structure and stylistic choices are used in different literary forms and types of text. They consider both print and non-print texts, reflecting on the contribution of form and style to meaning. Students reflect on the degree to which points of view, experiences and contexts shape responses to text. They engage with other views about texts and develop an awareness of how these views may influence and enhance their own reading of a text. They develop an awareness of initial readings of texts against more considered and complex response to texts.

Students investigate the ideas and concerns raised in texts and the ways social and cultural contexts are represented. They consider how texts may reflect or comment on the interests of individuals and particular groups in society and how texts may support or question particular aspects of society. Students learn to select and discuss aspects of the texts that facilitate their interpretation and understanding of the point of view being presented. They consider those facets of human experience that are seen as important within the texts and those that are ignored or disputed. They examine the ways texts explore different aspects of the human condition.

Unit 2: Context and connections

- **Area of Study 1 The text, the reader and their contexts**
- **Area of Study 2 Exploring connections between texts**

Students focus on the interrelationships between the text, readers and their social and cultural contexts. Students reflect upon their own backgrounds and experience in developing responses to texts from a past era and/or another culture. Students explore the text to understand its point of view and what it reflects or comments on. They identify the language and the representations in the text that reflect the period or culture, its ideas and concepts. Students develop an understanding that contextual meaning is already implicitly or explicitly inscribed in a text and that textual details and structures can be scrutinised to illustrate its significance. They examine and reflect on how the reader's interpretation is influenced by what they bring to the text. Students develop ability to analyse language closely, recognising that words have historical and cultural import.

Students focus on the ways that texts relate to and influence each other. They learn that meanings of texts are evolving and open to a range of interpretations and change in relation to other texts. Students consider how the reading of a text can change according to the form of the text and its context. They investigate and analyse how different interpretations of texts are influenced by language features and structures.

Unit 3: Form and transformation

- **Area of Study 1 Adaptations and transformations**
- **Area of Study 2 Creative responses to texts**

In this area of study students focus on how the form of text contributes to the meaning of the text. Students develop an understanding of the typical features of a particular form of text and how the conventions associated with it are used, such as the use of imagery and rhythm in a poem or the use of setting, plot and narrative voice in a novel. Students use this understanding to reflect upon the extent to which changing the form of the text affects its meaning.

Students focus on the imaginative techniques used for creating and recreating a literary work. Students use their knowledge of how the meaning of texts can change as form changes to construct their own creative transformations of texts. They learn how writers develop images of people and places, and they develop an understanding of language, voice, form and structure. Students draw inferences from the original text and speculate about the writer's purpose. In their adaptation of the tone and the style of the original text, students develop an understanding of the concerns and attitudes explored.

Unit 4: Interpreting texts

- **Area of Study 1 Literary perspectives**
- **Area of Study 2 Close analysis**

In this area of study students focus on how different readings of texts may reflect the views and values of both writer and reader. Students consider the ways in which various interpretations of texts can contribute

to understanding. They compare and analyse two pieces of literary criticism reflecting different perspectives, assumptions and ideas about the views and values of the text studied. Students identify the issues, ideas and contexts writers choose to explore, the way these are represented in the text/s and the cultural, social, historical and ideological contexts in which they were created. Students enquire into the ways readers may arrive at differing interpretations about a text and the grounds on which they are developed. Through close attention to two pieces of literary criticism reflecting different perspectives, students develop their own response to a text.

Students focus on detailed scrutiny of the language, style, concerns and construction of texts. Students attend closely to textual details to examine the ways specific features and/or passages in a text contribute to their overall interpretations. Students consider features of texts including structure, context, ideas, images, characters and situations, and the language in which these are expressed. They develop their interpretations using detailed reference to the text, logical sequencing of ideas and persuasive language.

English as an Additional Language (EAL)

English as an Additional Language (EAL) students will complete Units 1 and 2 as below but have more suitable assessment tasks devised for them to support their language needs. In Units 3 and 4, EAL students need to meet certain criteria for enrolment in VCE EAL. They will also complete an extra Area of Study in Unit 3 to develop and refine their listening skills.

Enrolment in this course is available to qualifying students only.

Unit 1:

- **Area of Study 1 – Reading and Creating Texts**
- **Area of Study 2 – Analysing and Presenting Argument**

In Unit 1 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.

Unit 2:

- **Area of Study 1 – Reading and Comparing Texts**
- **Area of Study 2 – Analysing and Presenting Argument**

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.

Unit 3:

- **Area of Study 1 – Reading and Creating Texts**
- **Area of Study 2 – Analysing Argument**
- **Area of Study 3 – Listening to Texts**

In this Unit, students read and respond to texts analytically and creatively. They analyse arguments and the use of persuasive language in texts. They listen to a range of spoken texts and use active listening strategies to understand information, ideas and opinions presented in texts.

Unit 4:

- **Area of Study 1 – Reading and Comparing Texts**
- **Area of Study 2 – Presenting Argument**

The focus of this Unit is about comparing the presentation of ideas, issues and themes in texts. Students create an oral presentation intended to position audiences about an issue debated in the media.

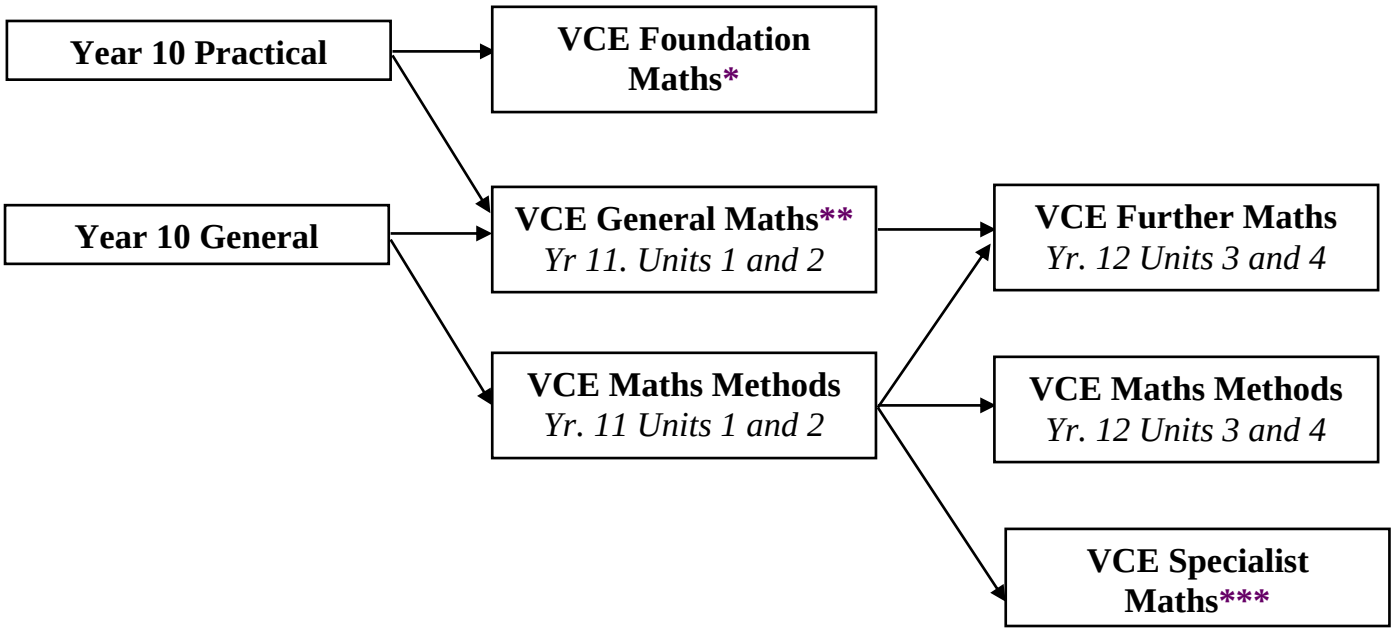
Mathematics

VCE Mathematics Overview Year 11 and Year 12

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 solving.

The study of mathematics is designed to provide access to worthwhile and challenging 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.

There are a number of different combinations of units or pathways in mathematics. These are described below. Make your decision



**VCE Foundation Maths is a Units 1 & 2 subject ONLY. Students who later decide they will need to complete Further Math Units 3 and 4 as part of their pathway will need to undertake supplementary study, in regards to assumed knowledge and skills.*

***Students whose pathway requires moving from Year 10 Practical Math to VCE General Math Units 1 and 2 should only do so with advice from their Year 10 teacher. Extra work will be required to go over assumed knowledge that may have been missed or presented differently in Year 10 Practical Math. A transition to Year 10 General Mathematics in Term 4 (or earlier) is recommended for these students.*

****Specialist Mathematics was not on offer at Goldsworthy in 2016 and it not currently planned for 2017. However, with student input and recommendation by staff about students who might succeed in this subject, Specialist Mathematics Units 3 and 4 is a possible pathway in the future. Please note that enrolment in Specialist Mathematics Units 3 and 4 assumes current or previous enrolment in Mathematical Methods Units 3 and 4.*

Foundation Maths

Year 11 Units 1 and 2

In Foundation Mathematics there is a strong emphasis on the use of mathematics in practical contexts encountered in everyday life in the community, at work and at study. The areas of study for Units 1 and 2 of Foundation Mathematics are 'Space, shape and design', 'Patterns and number', 'Data' and 'Measurement'. In each, the skills and knowledge help to build towards assessments that include investigations, projects, small assignments and tests of skills developed in application contexts.

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. Students completing this course would need to undertake additional targeted mathematical study in order to attempt Further Mathematics Units 3 and 4.

Unit 1 and 2:

Area of Study 1 - Space, shape and design Skills and knowledge include: Geometric shapes and objects, mathematical language in everyday contexts, the use and interpretation of maps and an exploration of Pythagoras' Theorem

Area of Study 2 - Patterns and number Skills and knowledge include: Movement between representations such as integers, ratios, decimals and percentages, place value and rounding in contexts and strategies for estimation.

Area of Study 3 – Data Skills and knowledge include: data types and the methods for collecting and presenting them, interpretation of graphs and tables, ways to describe and discuss distribution of data and analysing data sets.

Area of Study 4 – Measurement Skills and knowledge include: units of length and their symbols and conversion, tools and instruments used for measurement in real-world situations and calculations of measurements like area and volume

General Mathematics

Year 11 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' and 'Statistics'.

In each unit at least 4 topics are presented from at least 3 different areas of study, based on factors such as student interest, previous areas of strength and preparation for further study into Units 3 and 4. Throughout each Unit, a Casio ClassPad is recommended to help with calculation and the investigation of problems and their solution – this item is included in the booklist for the subject and is especially important for students looking to complete Further Maths Units 1 and 2.

In undertaking these units, students are expected to be able to apply techniques, routines and processes involving rational and real arithmetic, sets, lists and tables, diagrams and geometric constructions, algebraic manipulation, equations and graphs with and without the use of technology. They should have facility with relevant mental and by-hand approaches to estimation and computation. The use of numerical, graphical, geometric, symbolic, financial and statistical functionality of technology for teaching and learning mathematics, for working mathematically, and in related assessment, is to be incorporated throughout each unit as applicable.

Topics to be chosen based on the selection of Areas of Study across Units 1 and 2

Area of Study 1 - Algebra and structure

Linear Equations and Relations

Area of Study 2 - Arithmetic and number

Computational and Practical Arithmetic, Financial Arithmetic

Area of Study 3 - Discrete mathematics
Matrices, Graphs and Networks, Number Patterns and Recursion

Area of Study 4 - Geometry, measurement and trigonometry
Shape & Measurement, Applications of Trigonometry

Area of Study 5 - Graphs of linear and non-linear relations
Linear Graphs and Models, Inequalities and Linear Programming, Variation

Area of Study 6 – Statistics
Investigation &Comparing Data Distributions, Investigating Relationships Between Two Numerical Variables

On completion of these units the student should be able to define and explain key concepts as specified in the content from the areas of study, and apply a range of related mathematical routines and procedures. Students should be able to apply mathematical processes in non-routine contexts, including situations requiring problem-solving, modelling or investigative techniques or approaches, and analyse and discuss these applications of mathematics. Finally, students should be able to use numerical, graphical, symbolic and statistical functionalities of technology to develop mathematical ideas, produce results and carry out analysis in situations requiring problem-solving, modelling or investigative techniques or approaches.

Further Mathematics

Year 12 Unit 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' and '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' and 'Graphs and relations'. 'Data analysis' comprises 40 per cent of the content to be covered, 'Recursion and financial modelling' comprises 20 per cent of the content to be covered, and each selected module comprises 20 per cent of the content to be covered. Assumed knowledge and skills for the Core – and for each module selected for Unit 2 - are contained in the General Mathematics Units 1 and 2 topics covered in the previous year. A Casio ClassPad is required for calculation and the investigation of problems and their solution – this item is included in the booklist for this subject.

In undertaking these units, students are expected to be able to apply techniques, routines and processes involving rational and real arithmetic, sets, lists and tables, diagrams and geometric constructions, algebraic manipulation, equations, and graphs. They should have a facility with relevant mental and by-hand approaches to estimation and computation. The use of numerical, graphical, geometric, symbolic, financial and statistical functionality of technology for teaching and learning mathematics, for working mathematically, and in related assessment, is to be incorporated throughout each unit as applicable.

Unit 3: Area of Study 1 - Data Analysis
On completion of this unit the student should be able to define and explain key concepts and apply related mathematical techniques and models as specified in Area of Study 1 in routine contexts. The student should be able to select and apply the mathematical concepts, models and techniques as specified in Area of Study 1 in a range of contexts of increasing complexity. On completion of this unit the student should be able to select and appropriately use numerical, graphical, symbolic and statistical functionalities of technology to develop mathematical ideas, produce results and carry out analysis in situations requiring problem-solving, modelling or investigative techniques or approaches.

Unit 4: Area of Study 2 - Applications
On completion of this unit the student should be able to define and explain key concepts as specified in the content from the two selected modules, and apply related mathematical techniques and models in routine contexts. The student should be able to select and apply the mathematical concepts, models and techniques from the two selected modules in a range of contexts of increasing complexity. On completion of this unit the student should be able to select and appropriately use numerical, graphical, symbolic and statistical functionalities of technology to develop mathematical ideas, produce results and carry out analysis in situations requiring problem-solving, modelling or investigative techniques or approaches.

Mathematical Methods

Year 11 and 12

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.

The focus of Unit 1 is simple algebraic functions, and the areas of study are 'Functions and graphs', 'Algebra', 'Calculus' and 'Probability and statistics'. At end of Unit 1, students are expected to have covered the content outlined in each area, with the exception of 'Algebra', which extends across Units 1 and 2.

In Unit 2 students focus on the study of simple transcendental functions and the calculus of simple algebraic functions. This content will be presented so that there is a balanced and progressive development of skills and knowledge from each of the four areas of study with connections between and across the areas of study being developed consistently throughout both Units 1 and 2.

Unit 1:

Area of Study 1 – Functions and graphs:

introduction to function notation and vocabulary, to examine and interpret a range of graphs involving relations (e.g circles) and functions (e.g. polynomials and powers)

Area of Study 2 – Algebra:

use of symbolic notation, recognition of equivalent expressions and forms, families of functions and transformations on them and solutions to polynomial and simultaneous linear equations.

Area of Study 3 – Calculus:

calculation and interpretation of rates of change, both instantaneous and average

Area of Study 4 – Probability and Statistics:

events, frequency and the probability & representation of sample spaces and events are explored using simulations and extended using the rules and laws of probability.

Unit 2:

Area of Study 1 – Functions and graphs:

exploring trigonometric concepts and properties as well as exponential and logarithmic functions – with applications of these to the real world.

Area of Study 2 – Algebra:

continued from Unit 1, with the possible extension into the use of inverse functions

Area of Study 3 – Calculus:

exploring connections between differentiation and anti-differentiation

Area of Study 4 – Probability and Statistics:

introductory counting principles and the law of total probability in the case of two events.

In successfully undertaking both units, students are expected to be able to apply techniques, routines and processes involving rational and real arithmetic, sets, lists and tables, diagrams and geometric constructions, algebraic manipulation, equations, graphs, differentiation and anti-differentiation with and without the use of technology. They should have facility with relevant mental and by-hand approaches to estimation and computation. The use of numerical, graphical, geometric, symbolic and statistical functionality of technology for teaching and learning mathematics, for working mathematically, and in related assessment, is to be incorporated throughout the unit as applicable.

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

Unit 3:

- **Area of Study 1 - Functions and graphs**
- **Area of Study 2 - Algebra**

Unit 3 as a selection of content would typically include the areas of study 'Functions and graphs' and 'Algebra', and applications of derivatives and differentiation, and identifying and analysing key features of the functions and their graphs from the 'Calculus' area of study. For Unit 4, this selection would typically consist of remaining content from the areas of study: 'Functions and graphs', 'Calculus' and 'Algebra', and the study of random variables and discrete and continuous probability distributions and the distribution of sample proportions.

Unit 4:

- **Area of Study 3 - Calculus**
- **Area of Study 4 - Probability and Statistics**

In Unit 4, the content from the 'Calculus' area of study would be likely to include the treatment of anti-differentiation, integration, the relation between integration and the area of regions specified by lines or curves described by the rules of functions, and simple applications of this content.

In undertaking these units, students are expected to be able to apply techniques, routines and processes involving rational and real arithmetic, sets, lists and tables, diagrams and geometric constructions, algebraic manipulation, equations, graphs, differentiation, anti-differentiation, integration and inference with and without the use of technology. They should have facility with relevant mental and by-hand approaches to estimation and computation. The use of numerical, graphical, geometric, symbolic and statistical functionality of technology for teaching and learning mathematics, for working mathematically, and in related assessment, is to be incorporated throughout each unit as applicable.

Specialist Mathematics

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.

Unit 1:

Area of Study 1 – Algebra and Structure:

- substitution into, and transposition of linear relations, such as scale conversion
- solution of linear equations, including literal linear equations
- numerical, graphical and algebraic solutions of simultaneous linear equations in two variables

Area of Study 2 –Arithmetic and Number:

- sequences and series as maps between the natural numbers and the real numbers, the use of technology to generate sequences and series and their graphs, and sequences generated by recursion, including arithmetic and geometric sequences
- proof by mathematical induction.
- definition and properties of the complex numbers C, arithmetic, modulus of a complex number, the representation of complex numbers as points on an argand diagram, general solution of quadratic equations, with real coefficients, of a single variable over C and conjugate roots

Area of Study 3 – Principles of Counting:

- the concept of one-to-one correspondence of sets and its application to consideration of countability
- the pigeon-hole principle as a problem-solving technique
- techniques of counting such as permutations and combinations and the inclusion–exclusion principle
- identities involving Pascal's triangle.

Area of Study 4 – Geometry, Measurement and Trigonometry

- standard geometric conventions and notation for points, lines and angles, and the definitions of parallel lines, transversals and related angles
- the definitions and properties of common polygons, circle and related geometric constructs
- notions of congruence and similarity and conditions for congruence and similarity, and the sine and cosine rules and conditions for their application

- geometric theorems involving lines, polygons and circles, including Pythagoras' theorem and its converse.

Unit 2:

Area of Study 1 – Graphs of Linear and non Linear Relations:

- interpreting graphical representations of data such as daily UV levels or water storage levels over time
- graphs of simple reciprocal functions, including those for sine, cosine and tangent
- locus definition and construction in the plane of lines, parabolas, circles, ellipses and hyperbolas
- cartesian, polar and parametric forms and graphs of lines, parabolas, circles, ellipses and hyperbolas

Area of Study 2 – Transformation, Trigonometry and Matrices:

- points in the plane, coordinates and their representation as 2 × 1 matrices (column vectors)
- effect of these linear transformations and their inverse transformations, and compositions of these transformations on subsets of the plane such as points, lines, shapes and graphs
- Invariance of properties under transformation and the relationship between the determinant of a transformation matrix and the effect of the linear transformation on area

Area of Study 3 – Vectors in the Plane:

- representation of plane vectors as directed lines segments, examples involving position, displacement & velocity
- magnitude and direction of a plane vector, and unit vectors
- geometric representation of addition, subtraction (triangle and/or parallelogram rules) scalar multiple and linear combination of plane vectors

Area of Study 4 – Kinematics:

- the concepts of position, time, average and instantaneous speed, velocity and acceleration, displacement and distance travelled
- formulas for rectilinear motion involving constant acceleration
- central difference, step functions, numerical approximation and limiting value

Specialist Mathematics 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. The selection of content for Unit 3 and Unit 4 should be constructed so that there is a balanced and progressive development of knowledge and skills with connections among the areas of study being developed as appropriate across Unit 3 and Unit 4.

Specialist Mathematics Units 3 and 4 assumes familiarity with the key knowledge and skills from Mathematical Methods Units 1 and 2, the key knowledge and skills from Specialist Mathematics Units 1 and 2 topics 'Number systems and recursion' and 'Geometry in the plane and proof', and concurrent or previous study of Mathematical Methods Units 3 and 4. Together these cover the assumed knowledge and skills for Specialist Mathematics, which are drawn on as applicable in the development of content from the areas of study and key knowledge and skills for the outcomes.

Unit 1:

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 nature / 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

Unit 2:

Area of Study 1 – 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 2 – Mechanics: In this area of study students cover an introduction to Newtonian mechanics, for both constant and variable acceleration.

Area of Study 3 – 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.

Chemistry

Unit 1: Ho*w can the diversity of materials be explained?*

- **Area of Study 1 How can knowledge of elements explain the properties of matter?**
- **Area of Study 2 How can the versatility of non-metals be explained?**
- **Area of Study 3 Research investigation**

The development and use of materials for specific purposes is an important human endeavour. 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. They are introduced to quantitative chemistry concepts.

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

- **Area of Study 1 How do substances interact with water?**
- **Area of Study 2 How are substances in water measured and analysed?**
- **Area of Study 3 Practical investigation**

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 How can chemical processes be designed.to optimise efficiency?

- **Area of Study 1: What are the options for energy production?**
- **Area of Study 2: How can the yield of a chemical product be optimised?**

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, including fossil fuels, biofuels, galvanic cells and fuel cells.

UNIT 4 How are organic compounds categorised, analysed and used?

- **Area of Study 1: How can the diversity of carbon compounds be explained and categorised?**
- **Area of Study 2: What is the chemistry of food?**
- **Area of Study 3: Practical Investigation**

In this unit students investigate the structural features, bonding, typical reactions and uses of the major families of organic compounds including those found in food. Students study the ways in which organic structures are represented and named.

Biology

Unit 1: How do living things stay alive?

- **Area of Study 1:** How do organisms function?
- **Area of study 2:** How do living systems sustain life?
- **Area of study 3:** Practical investigation

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?

- **Area of Study 1 How does reproduction maintain the continuity of life?**
- **Area of Study 2 How is inheritance explained?**
- **Area of Study 3 Investigation of an issue**

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 2.

Unit 3: How do cells maintain life?

- **Area of study 1: How do cellular processes work?**
- **Area of study 2:How do cells communicate?**

The cell is a dynamic system of interacting molecules that define life. An understanding of the workings of the cell enables an appreciation of both the capabilities and the limitations of living organisms whether animal, plant, fungus or microorganism. The convergence of cytology, genetics and biochemistry makes cell biology one of the most rapidly evolving disciplines in contemporary biology.

Here students investigate the workings of the cell from several perspectives. They explore the importance of the insolubility of the plasma membrane in water and its differential permeability to specific solutes in defining the cell, its internal spaces and the control of the movement of molecules and ions in and out of such spaces. Students consider base pairing specificity, the binding of enzymes and substrates, the response of receptors to signalling molecules and reactions between antigens and antibodies to highlight the importance of molecular interactions based on the complementary nature of specific molecules.

Students study the synthesis, structure and function of nucleic acids and proteins as key molecules in cellular processes. They explore the chemistry of cells by examining the nature of biochemical pathways, their components and energy transformations. Cells communicate with each other using a variety of signalling molecules. Students consider the types of signals, the transduction of information within the cell and cellular responses. At this molecular level students study the human immune system and the interactions between its components to provide immunity to a specific antigen.

A student practical investigation related to cellular processes and/or biological change and continuity over time is undertaken in either Unit 3 or Unit 4, or across both Units 3 and 4, and is assessed in Unit 4, Outcome 3. The findings of the investigation are presented in a scientific poster format.

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

- **Area of study 1: How are species related?**
- **Area of study 2: How do humans impact on biological processes?**
- **Area of study 3: Practical investigation**

In this unit students consider the continual change and challenges to which life on Earth has been subjected. They investigate the relatedness between species and the impact of various change events on a population's gene pool. The accumulation of changes over time is considered as a mechanism for biological evolution by natural selection that leads to the rise of new species. Students examine change in life forms using evidence from palaeontology, biogeography, developmental biology and structural morphology. They explore how technological developments in the fields of comparative genomics, molecular homology and bioinformatics have resulted in evidence of change through measurements of relatedness between species. Students examine the structural and cognitive trends in the human fossil record and the interrelationships between human biological and cultural evolution. The biological consequences, and social and ethical implications, of manipulating the DNA molecule and applying biotechnologies is explored for both the individual and the species. A student practical investigation related to cellular processes and/or biological change and continuity over time is undertaken in either Unit 3 or Unit 4, or across both Units 3 and 4, and is assessed in Unit 4, Outcome 3. The findings of the investigation are presented in a scientific poster.

Physics

Unit 1:

- **Area of Study 1- Nuclear physics and radioactivity**
- **Area of Study 2 - Electricity**
- **Area of Study 3 - Detailed Study**

This unit focuses on Physics as a human endeavour. Observations and ideas about the physical world related to aspects of energy are organised and explained through the use of conceptual models. The detailed studies provide opportunities to explore the application of energy concepts and models in nuclear energy, sustainable energy sources, flight, space and medical contexts. They undertake regular experimental work in the lab starting with simple observations and measurements. A quantitative investigation involving collection and analysis of sufficient data points for at least one independent variable will be undertaken. The investigation should be at least partly student designed.

The use of simple mathematical modelling, including calculations, is introduced to organise first-hand and second-hand data in order to make predictions and link concepts. Students begin to solve qualitative and quantitative problems in familiar contexts. Computer and/or graphics calculator programs are used to collect and analyse first-hand and second-hand data and to present investigation findings.

In this unit, students make and test predictions, identify discrete and continuous variables, select relevant independent variables and recognise controlled variables. They apply a given method for a simple investigation to control variables and collect relevant data. Students record raw qualitative and quantitative data and present processed data, including correct use of units, symbols and formulas, appropriately. They use suitable materials, apparatus and measurement procedures to ensure reliability in the data. When drawing relevant conclusions from their investigations, students recognise sources of uncertainty and error. When completing independent and collaborative investigations, they identify alternative interpretations of data and results. They use appropriate sources to identify and assess risks to themselves, other living things and the environment of Physics related principles and procedures, and they use this knowledge to apply safe, ethical and responsible practices.

Unit 2:

- **Area of Study 1 - Motion**
- **Area of Study 2 - Wave-like properties of light**
- **Area of Study 3 Detailed Study**

This unit focuses on the application of models to more complex phenomena – motion and light – developed within contexts that are familiar to students and relevant to their experiences. Newtonian ideas of motion are extended to include a range of movements and more abstract ideas, while the wave and particle models of light provide a framework for exploring light phenomena in real world applications. The detailed studies provide opportunities to explore motion and/or light in nuclear, sustainable energy, flight, space and medical contexts.

Students continue to undertake extensive and regular experimental work in the laboratory. They design and undertake more complex investigations involving at least one independent, continuous variable, and take increasing responsibility for the design of investigations. The use of simple mathematical modelling, including calculations, to organise first-hand and second hand data, to make predictions and to link concepts is further developed and applied to more extensive data. Students begin to analyse and solve quantitative and qualitative problems in familiar contexts.

Computer and graphics calculator programs are used to collect and analyse first-hand and second-hand data, and to present investigation findings. Unit 2 consists of two prescribed areas of study: Motion and Wave-like properties of light; and a third area of study to be chosen from one of six detailed studies: Astronomy, Astrophysics, Energy from the nucleus, Investigations: Flight, Investigations: Sustainable energy sources and Medical physics.

The detailed study chosen in Unit 2 must be a different detailed study from that chosen in Unit 1.
In this unit, students identify a problem or research question and formulate a prediction or hypothesis, select at least one relevant independent continuous variable and recognise controlled variables. They adapt or extend given methods, or at least partly design their own methods, for the control of variables and the systematic collection and recording of sufficient relevant data for simple investigations.

Students record raw qualitative and quantitative data and present processed data, including correct use of units, symbols and formulas, appropriately. They select and use appropriate materials, apparatus and measurement procedures to ensure reliability in the data. When drawing relevant conclusions from their investigations,

students take into account sources of error and uncertainty. They evaluate limitations of, and weaknesses and errors in, techniques and equipment. Alternative interpretations of data and results are identified. Students identify and apply safe and responsible practices when completing independent and collaborative investigations. They use appropriate information sources to assess risk.

Unit 3:

- **Area of Study 1- Motion in one and two dimensions**
- **Area of Study 2- Electronics and photonics**

Unit 3 consists of two prescribed areas of study: Motion in one and two dimensions; and Electronics and photonics. A detailed study is to be chosen in either Unit 3 or Unit 4 from one of six detailed studies:

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

Students continue to have regular experience in experimental investigation in the laboratory. They design and carry out an extended practical investigation. They collect accurate data, evaluate the quality of data and measurement processes, and make conclusions based on the data. Mathematical modelling, including calculations, is applied to all areas of study to organise first-hand and second-hand data, make predictions and link concepts. Students analyse and solve more complex qualitative and quantitative problems. Computer and/or graphics calculator programs are used to collect and analyse data, and to present investigation findings.

In this unit, students select focused research questions and formulate a quantitatively testable hypothesis. Students identify variables of significance to an investigation and decide the appropriate variables to be controlled. They adapt or extend given methods, and design their own methods, for the control of variables and the systematic collection of sufficient relevant data for focused investigations.

Students record raw qualitative and quantitative data accurately and present processed data, including correct use of units, symbols and formulas, to ensure that relationships between variables are evident. Students interpret their results to draw relevant conclusions from their investigations. They identify sources of error and estimate uncertainties in, and reliability of, data and derived quantities. They analyse procedures and results, taking into account limitations of, and weaknesses and errors in, techniques and equipment. Alternative interpretations of data and results are identified and explained. They identify and apply safe and responsible practices when designing and completing independent and collaborative investigations. Students select and use appropriate information sources to assess risk.

Unit 4:

- **Area of Study 1 Electric power**
- **Area of Study 2 Interactions of light and matter**
- **Area of Study 3 Detailed Study**

Unit 4 consists of two prescribed areas of study: Electric power and Interactions of light and matter. A detailed study is to be chosen in either Unit 3 or Unit 4 from one of six detailed studies: Einstein's special relativity, Materials and their use in structures, Further electronics, Synchrotron and its applications, Photonics, and Sound.

This unit focuses on the development and limitations of models in explaining
Students continue to undertake extensive and regular experimental work in the laboratory. They design and carry out investigations, collect accurate data, evaluate the quality of data and measurement processes and make conclusions based on the data. Mathematical modelling, including calculations, continues to be used to organise first-hand and second-hand data, to link concepts, to make predictions and to identify trends. Students analyse and solve more complex qualitative and quantitative problems. Computer and/or graphical calculator programs are used to collect and analyse first-hand and second hand data, and to present investigation findings.

In this unit, students develop conceptual understanding by investigating practical activities and demonstrations. Students record raw qualitative and quantitative data and present processed data, including correct use of units, symbols and formulas, accurately and to ensure that relationships between variables are evident. They select and use appropriate materials, apparatus and measurement procedures to ensure a high degree of reliability and accuracy in the data. Students analyse their results to draw relevant conclusions. They identify sources of error and uncertainties to determine the reliability of data and derived quantities. Alternative interpretation of data and results are identified and explained. They identify and apply safe and responsible practices when completing independent and collaborative investigations.

Psychology

Unit 1 Introduction to Psychology:

- **Area of Study 1- What is psychology?**
- **Area of Study 2 Lifespan psychology**

In this unit students are introduced to the development of psychology from its philosophical beginnings to a scientific study of the human mind and behaviour. Students explore the scope of psychology, its specialist disciplines such as neuropsychology, cognitive, social and human developmental psychology, and its fields of application. Students consider influences on perception and human behaviour from biological, behavioural, cognitive and socio-cultural perspectives. They examine the contribution classic and contemporary studies have made to the development of different psychological theories used to predict and explain the human mind, and behaviours associated with particular stages of development over a lifespan. 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 2 Self and Others:

- **Area of Study 1 - Interpersonal and group behaviour**
- **Area of Study 2 - Intelligence and personality**

A person's attitudes and behaviours affect the way they view themselves and the way they relate to others. Understanding what influences the formation of attitudes of individuals and behaviours of groups can inform and contribute to explanations of individual aggression or altruism, the positive and negative power of peer pressure and responses to group behaviour.
Differences between individuals can also be ascribed to differences in intelligence and personality, but conceptions of intelligence and personality and their methods of assessment are contested. Differences between individuals, groups and cultures can be analysed in varied ways through different psychological perspectives informed by both classic and contemporary theories.

In this unit 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 3 How does experience affect behaviour and mental processes?

- **Area of Study 1 How does the nervous system enable psychological functioning?**
- **Area of Study 2 How do people learn and remember?**

How does experience affect behavior and mental processes? The nervous system influences behavior and the way people experience the world. In this unit students examine both macro-level and micro-level functioning of the nervous system to explain how the human nervous system enables a person to interact with the world around them. They explore how stress may affect a person's psychological functioning and consider the causes and management of stress. Students investigate how mechanisms of memory and learning lead to the acquisition of knowledge, the development of new capacities and changed behaviours. They consider the limitations and fallibility of memory and how memory can be improved.

Students examine the contribution that classical and contemporary research has made to the understanding of the structure and function of the nervous system, and to the understanding of biological, psychological and social factors that influence learning and memory. A student practical investigation related to mental processes and psychological functioning is undertaken in either Unit 3 or Unit 4, or across both Units 3 and 4, and is assessed in Unit 4. The findings of the investigation are presented in a scientific poster format.
Students explore the role of different branches of the nervous system in enabling a person to integrate, coordinate and respond to internal and external sensory stimuli. They explore the specialised structures and functioning of neurons that allow the nervous system to transmit neural information. Students evaluate how biological, psychological and social factors can influence a person's nervous system functioning. In particular, they consider the ways in which stress can affect the mind and body, the role that the nervous system plays in these processes and how stress can be managed
.
Completion of this unit the student should be able to explain how the structure and function of the human

nervous system enables a person to interact with the external world and analyse the different ways in which stress can affect nervous system functioning
On completion of this unit the student should be able to apply biological and psychological explanations for how new information can be learnt and stored in memory, and provide biological, psychological and social explanations of a person's inability to remember information.

Unit 4 How is wellbeing developed and maintained?

- **Area of Study 1 - How do levels of consciousness affect mental processes and behaviour?**
- **Area of Study 2 - What influences mental wellbeing?**
- **Area of Study 3 - Practical investigation**

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, as a scientific model, to analyse mental health and disorder. They use specific phobia to illustrate how the development and management of a mental disorder can be considered as an interaction between biological, psychological and social factors. Students examine the contribution that classical and contemporary research has made to the understanding of consciousness, including sleep, and the development of an individual's mental functioning and wellbeing. A student practical investigation related to mental processes and psychological functioning is undertaken in either Unit 3 or Unit 4, or across both Units 3 and 4, and is assessed in Unit 4, Outcome 3. The findings of the investigation are presented in a scientific poster format.

Differences in levels of awareness of sensations, thoughts and surroundings influence individuals' interactions with their environment and with other people. In this area of study students focus on states of consciousness and the relationship between consciousness and thoughts, feelings and behaviours. They explore the different ways in which consciousness can be studied from physiological and psychological perspectives and how states of consciousness can be altered. Students consider the nature and importance of sleep and apply biological, psychological and social factors to analyse the effects of sleep disturbances on psychological functioning, including mood, cognition and behaviour. On completion of this unit the student should be able to explain consciousness as a continuum, compare theories about the purpose and nature of sleep, and elaborate on the effects of sleep disruption on a person's functioning.

Student should be able to explain the concepts of mental health and mental illness including influences of risk and protective factors, apply a biopsychosocial approach to explain the development and management of specific phobia, and explain the psychological basis of strategies that contribute to mental wellbeing.

The research methodologies and ethical principles for Units 1 to 4 are:

- *experimental research:* construction of research hypotheses; identification and operationalization of independent and dependent variables; identification of extraneous and potential confounding variables including individual participant differences, non-standardised instructions and procedures, order effects, experimenter effect, placebo effects; ways of minimising confounding and extraneous variables including type of sampling procedures, type of experiment, counterbalancing, single and double blind procedures, placebos, standardised instructions and procedures; evaluation of different types of experimental research designs including independent-groups, matched-participants, repeated-measures; reporting conventions as per American Psychological Association (APA) format
- *sampling procedures in selection and allocation of participants:* random sampling; stratified sampling; random-stratified sampling; convenience sampling; random allocation of participants to groups; control and experimental groups
- *techniques of qualitative and quantitative data collection:* case studies; observational studies; self-reports; questionnaires
- *statistics*: measures of central tendency including mean, median and mode; interpretation of p-values and conclusions; evaluation of research in terms of generalising the findings to the population
- *ethical principles and professional conduct*: the role of the experimenter; protection and security of participants' rights; confidentiality; voluntary participation; withdrawal rights; informed consent procedures; use of deception in research; debriefing.

Twentieth Century History

Year 11 Units 1 and 2

History Unit 1: Twentieth century history 1918 - 1939

Unit 1 Area of Study 1 Ideology and conflict

In this area of study students explore:

- Ideologies and movements of the period after World War One.
- The causes of World War Two.
- The impact of the treaties which ended the Great War and which redrew the map of Europe.
- The achievements and limitations of the League of Nations.
- New ideologies of socialism, communism and fascism.
- Economic instability, territorial aggression and totalitarianism which combined to draw the world into a second major conflict in 1939.

Area of Study 2 Social and cultural change

In this area of study student's focus on:

- Social life and cultural expression in the 1920s and 1930s.
- Technological, political and economic changes of the period.
- Cultural expression from the period contrasting and comparing the USSR and the USA.
- The optimism and material prosperity of the1920s
- The Great Depression.
- The establishment of a communist regime in USSR in 1917 was initially greeted with support.
- How Stalin treated his people - state-owned factories and farms, and dissenters sent to labour camps.
- Prohibition and race segregation in the USA.
- The distribution of mass entertainment and information by means of radio and film.

History Unit 2: Twentieth century history 1945 –2000

Area of Study 1 Competing ideologies

In this area of study students focus on

- Causes and consequences of the Cold War;
- Competing ideologies that underpinned events,
- Significant events and developments in the period 1945 –1991.
- International conflicts/proxy wars such as those in Berlin, Korea, Cuba and Vietnam.
- Reasons for the end of the long-running period of ideological conflict and 1991 collapse of the Soviet Union.

Area of Study 2 Challenge and change

In this area of study students focus on

- *Traditional ideas, values and political systems that were challenged and changed by individuals and/or groups during the period 1945 to 2000.*
- Explore the causes of significant political and social events and movements, and their consequences for nations and people.
- Political and social challenges and changes that occurred within and between nations based on religion, nationalism, race, gender and human rights.
- Developments in mass communication such as the internet and satellite television that meant political and social movements transcended national boundaries and were exposed to a global audience.
- Independence movements led to the emergence of new nations.
- Terrorism and its change to become an increasingly globalised problem.
- Conflicts such as the Arab–Israeli conflict, the struggle against Apartheid in South Africa and conflict in Northern Ireland.

Australian History

Year 12 Unit 3 and 4

Unit 3: Transformations: Colonial society to nation

- **Area of Study 1 The reshaping of Port Phillip District/Victoria, 1834 –1860**
- **Area of Study 2 Making a people and a nation 1890 –1920**

In this unit students explore the transformation of the Port Phillip District (later Victoria) from the 1830s through to the end of the tumultuous gold rush decade in 1860. They consider the dramatic changes introduced as the British colonisers swiftly established themselves, taking possession of the land and then it's newly discovered mineral riches.
Students examine transformations in the way of life of the Aboriginal peoples and to the environment as the European society consolidated itself. They also consider how new visions for the future created by the gold rush and the Eureka rebellion further transformed the new colony.
Students explore the type of society Australians attempted to create in the early years of the newly federated nation. Much of the legislation debated and passed by the Commonwealth Parliament was relatively advanced and Australia was seen as a social laboratory exploring new forms of rights and benefits for its citizens. Students evaluate the effect that Australian involvement in World War One had on the country's egalitarian and socially progressive aspirations.

Unit 4: Transformations: Old certainties and new visions

- **Area of Study 1 Crises that tested the nation 1929 –1945 – World War Two**
- **Area of Study 2 Voices for change 1965 –2000 – Vietnam War & Immigration**

In this unit students investigate the continuing development of the nation in the early part of the twentieth century and the dramatic changes that occurred in the latter part of the century. After World War One the process of nation building was renewed. However, world events soon intruded again into the lives of all Australians. The economic crisis of the 1930s followed by another world war redirected the nation's priorities for a time as it struggled to
regain economic stability and defeat its military enemies. The experience of both the Depression and World War Two gave rise to renewed thinking by Australians about how to achieve the type of society envisaged at the time of Federation.

Revolutions History

Year 12 Unit 3 and 4

Unit 3 is the study of The American Revolution of 1776.
Unit 4 is the study of The French Revolution of 1789.

Area of Study 1: Unit 3 and Unit 4 Causes of revolution

- What were the significant causes of revolution?
- How did the actions of popular movements and particular individuals contribute to triggering a revolution?
- To what extent did social tensions and ideological conflicts contribute to the outbreak of revolution?

Area of Study 2: Unit 3 and Unit 4

Consequences of revolution

- How did the consequences of revolution shape the new order?
- How did the new regime consolidate its power?
- How did the revolution affect the experiences of those who lived through it?
- To what extent was society changed and revolutionary ideas achieved?

Ancient History

Unit 1: Ancient Mesopotamia:

Students explore Ancient Mesopotamia. The lands between the rivers Tigris and the Euphrates have been described as the 'cradle of civilisation'. Although this view is now contested in ancient history and archaeology, the study of Ancient Mesopotamia provides important insights about the growth of cities. Students investigate the creation of city-states and empires. They examine the invention of writing – a pivotal development in human history. This unit highlights importance of primary sources to historical inquiry about the origins of civilisation.

Unit 2: Ancient Egypt

Ancient Egypt gave rise to a civilisation that endured for approximately three thousand years. Unlike Mesopotamia, Egypt was not threatened by its neighbours for the greater part of its history. The Nile served as the lifeblood of urban settlements in Upper and Lower Egypt. Kingdoms rose, flourished and fell around the banks of this great river. This unit highlights the importance of primary sources to historical inquiry about Old and Middle Kingdom Egypt.

Unit 2: Early China

The foundations of civilisation in China have traditionally been located in the Yellow River Valley, but archaeological evidence now suggests that early settlement was not confined to this area. Life in small agricultural communities, with distinct regional identities, marks the beginnings of civilisation in China. Interactions between these small and diverse settlements led to the formation of rival states, and then to the growth of an enduring civilisation. The development of a series of empires was central to Chinese civilisation.

Early China refers to what is known as the pre-imperial and early imperial periods. Historians and archaeologists refer to the pre-imperial period (up to 221 BC) as Ancient China. This unit begins with Ancient China and concludes with the end of the Han Empire in AD 220. It highlights the importance of primary sources (the material record and written sources) to historical inquiry about Early China.

Unit 3 and 4: Ancient history

Egypt, Greece and Rome were major civilisations of the ancient Mediterranean. They have bestowed a powerful legacy on the contemporary world. In each of Units 3 and 4, students explore the structures of one of these societies and a period of crisis in its history. Life in these ancient societies was shaped by the complex interplay of social, political and economic factors. Trade, warfare and the exchange of ideas between societies also influenced the way people lived. Furthermore, all three societies experienced dramatic crises which caused massive disruption. During these times of upheaval, individuals acted in ways that held profound consequences for themselves and for their society.

These units highlight the importance of primary sources to historical inquiry about ancient civilisations.

In developing a course, teachers select two societies to be studied from Egypt, Greece and Rome, one for Unit 3 and one for Unit 4. For the two selected societies, 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

Accounting

Unit 1: Establishing and operating a service business

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

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

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

Unit 2: Accounting for a trading business

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

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

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

Unit 3: Recording and reporting for a trading business

This unit focuses on financial accounting for a single activity trading business as operated by a sole trader and emphasises the role of accounting as an information system. Students use the double entry system of recording financial data and prepare reports using the accrual basis of accounting. The perpetual method of stock recording with the First In, First Out (FIFO) method is used.

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

Unit 4: Control and analysis of business performance

This unit provides an extension of the recording and reporting processes from Unit 3 and the use of financial and non-financial information in assisting management in the decision-making process. The unit is based on the double entry accounting system and the accrual method of reporting for a single activity trading business using the perpetual inventory recording system.

Students investigate the role and importance of budgeting for the business and undertake the practical completion of budgets for cash, profit and financial position. Students interpret accounting information from accounting reports and graphical representations, and analyse the results to suggest strategies to the owner on how to improve the performance of the business.

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

Sociology

Unit 1 Youth and family:

- **Area of Study 1 - Category and experience of youth**
- **Area of Study 2 - The family**

This unit uses sociological methodology to explore the social categories of youth and adolescence and the social institution of family. Sociologists draw on methods of science to understand how and why people behave the way they do when they interact in a group. Sociology attempts to understand human society from a holistic point of view, including consideration of its composition, how it is reproduced over time and the differences between societies. When sociologists investigate a topic, they attempt to do so with a reflective, critical mindset. Sociologists are guided by theories, or frameworks, to explain and analyse how social action, social processes and social structures work.

Area of Study 1 explores the way youth and adolescence are constructed as social categories, in the light of differing experiences of young people. There is a range of potential negative impacts of categorisation, including stereotyping, prejudice and discrimination.

Students explore how and why the experience of being young differs across time and space. They examine the tension between a perceived need to define categories of youth and adolescence, for example, for the purposes of government policy response to issues, and the potential negative impacts of homogenous categorisation, such as stereotypes of young people in a context characterised by a rich diversity in the ways young people live.

In Area of Study 2, students investigate the social institution of the family. There is a range of theoretical approaches used by sociologists to explain the purpose and experiences of family life, including functionalist and feminist approaches. Factors such as globalisation, feminism, individualism, technology, changes in the labour market, and government policies have been identified as influencing the traditional view of the family. In a multicultural society like Australia, different communities have different kinds of families and experiences of family life.
Students draw on quantitative and qualitative sources in their study. These sources may be drawn from secondary sources and from primary research undertaken by the student. The Safety and Wellbeing section on page 9 contains advice for the conduct of primary research.

Unit 2 Social norms: breaking the code:

- **Area of Study 1 Deviance**
- **Area of Study 2 Crime**

In this unit students explore the concepts of deviance and crime. The study of these concepts from a sociological perspective involves ascertaining the types and degree of rule breaking behaviour, examining traditional views of criminality and deviance and analysing why people commit crimes or engage in deviant behaviour. It also involves consideration of the justice system, how the understanding of crime and deviance has changed over time, and the relationship between crime and other aspects of a society, such as age and socioeconomic status.
In Area of Study 1 students explore the concept of deviance. There are different explanations of what constitutes deviant behaviour. Generally, it is defined as involving actions that are considered to be outside the normal range of behaviour according to the majority of members of a society. Students investigate the functionalist, interactionist and social control theories of deviance.

Students also explore the phenomenon known as moral panic. This refers to the belief that a subculture or group poses a threat to the social values and culture of broader society. The event is often presented in a stereotypical fashion by the mass media. In Area of Study 2, students investigate crime and punishment. They explore patterns of crime and consider the significance of a range of factors, such as class, gender, age and race/ethnicity. Students explore different methods of punishment and the extent to which each of these methods serves its aims.

Unit 3 Culture and Ethnicity :

- **Area of study 1 – Australian Indigenous Culture**
- **Area of study 2 - Ethnicity**

Is Australia a racist country? Are we really all equal? Australia is one of the most culturally diverse countries in the world. This unit investigates expressions of culture and ethnicity within Australian society in two different contexts: Australian Indigenous culture, and ethnicity in relation to migrant groups through: Learning Activities Representation analysis, Multimedia Presentations, Written reports, Extended Responses, Film Analysis, Excursion Report, Tests, Research Report conducting Ethical Methodology.

They will explain the meaning of culture, race and ethnicity, ethnic hybridity, cultural relativism and ethnocentrism. They analyse representations of Australian Indigenous culture and explain and apply sociological concepts and evidence. In class they discuss the social, political and economic impact of immigration, assimilation and multiculturalism, define the sociological imagination and explain connection to the study of culture and source and evaluate relevant evidence to support observations and analysis.

Students outline Australia's ethnic diversity through the use of comparative methodology, explain how social institutions engage with and respond to the needs of ethnic groups and analyse the experience of a specific ethnic group with reference to relevant sociological concepts and theory.

Unit 4 Community, Social Movements & Social Change:

- **Area of study 1 – Community**
- **Area of study 2 – Social movement and social change**

Here students explore ways sociologists have thought about the idea of community and how the various forms of community are experienced. They examine the relationship between social movements and social change.

Students produce Learning Activities Representation analysis, Multimedia Presentations, Written reports, Extended Responses, Film analysis, Tests and a Research Report conducting Ethical Methodology.
At the completion of this unit Students will be able to explain the factors that help maintain, weaken and strengthen a community, analyse the impact of technological, economic, social, political and environmental changes on the experience of community, using relevant theories and research, explain how social movements are created, how they exert power and lead to change and source and use a range of relevant evidence to support analysis and draw conclusions

Business Management

Unit 1 Planning a business:

- **Area of Study 1 – The business idea**
- **Area of Study 2 – The external environment**
- **Area of Study 3 – The internal environment**

Businesses of all sizes are major contributors to the economic and social wellbeing of a nation. 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:

- **Area of Study 1 – Legal requirements and financial considerations**
- **Area of Study 2 – Marketing a business**
- **Area of Study 3 – Staffing a business**

This unit focuses on the establishment phase of a business's life. This unit examines the legal requirements that must be satisfied to establish a business, features of effective marketing and 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:

- **Area of Study 1 – Business foundations**
- **Area of Study 2 – Managing employees**
- **Area of Study 3 – Operations management**

This unit examines the different types of businesses and their respective objectives. Key elements of managing a business including corporate culture, management styles, management skills and the relationship between each of these are explored. Strategies to manage staff and business operations to meet objectives are investigated using contemporary business case studies from the past four years.

Unit 4 Transforming a business:

- **Area of Study 1 – Reviewing performance - The need for change**
- **Area of Study 2 – Implementing change**

Businesses are under constant pressure to adapt and change to meet their objectives. This unit considers the importance of reviewing key performance indicators to determine current performance and the strategic management necessary to position a business for the future. Successfully managing and leading change within a business is investigated using a theoretical model and contemporary business case studies from the past four years.

Legal Studies

Unit 1 Criminal law in action:

- **Area of Study 1- Law in society**
- **Area of Study 2 - Criminal law**
- **Area of Study 3 - The criminal courtroom**

The law influences all aspects of society – at home, at work and in the wider community. Laws are used by society to preserve social cohesion, and to ensure the protection of people from harm and from the infringement of their rights. These laws can be grouped according to their source and whether they are criminal or civil in nature. Following an overview of the law in general, this unit focuses on criminal law.

Students examine the need for laws in society. They investigate the key features of criminal law, how it is enforced and adjudicated and possible outcomes and impacts of crime. Through a consideration of contemporary cases and issues, students learn about different types of crimes and explore rights and responsibilities under criminal law. Students also consider the role of parliament and subordinate authorities in law-making, as well as the impact of the Victorian Charter of Rights and Responsibilities on law enforcement and adjudication in Victoria. Students investigate the processes and procedures followed by courts in hearing and resolving criminal cases. They explore the main features and operations of criminal courts and consider the effectiveness of the criminal

Unit 2 Issues in Civil Law:

- **Area of Study 1 - Civil law**
- **Area of Study 2 - The civil law in action**
- **Area of Study 3 - The law in focus**
- **Area of Study 4 - A question of rights**

The civil law regulates the rights and responsibilities that exist between individuals, groups and organisations. If legal rights have been infringed, the aggrieved party may pursue legal action through the court system, through a tribunal, or by using one of the methods of dispute resolution.

Students examine the rights that are protected by civil law, as well as obligations that laws impose. They investigate types of civil laws and related cases and issues and develop an appreciation of the role of civil law in society and how it affects them as individuals.
The unit also focuses on the resolution of civil disputes through judicial determination and alternative methods in courts, tribunals and independent bodies. Students examine these methods of dispute resolution and evaluate their effectiveness.

Individuals can influence a change in the law by taking a case to court. Students focus on cases that have had a broader impact on the legal system and on the rights of individuals. Students develop an appreciation of the role played by such cases and undertake an analysis of relevant legal issues.

Unit 3 Law-making:

- **Area of Study 1- Parliament and the citizen**
- **Area of Study 2 - The Constitution and the protection of rights**
- **Area of Study 3 - Role of the courts in law-making**

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

Central to the investigation of law-making is the role played by the Commonwealth Constitution.
Students develop an understanding of the importance of the Constitution in their lives and on society as a whole, and undertake a comparative analysis with another country. They learn of the importance of the role played by the High Court of Australia in interpreting and enforcing the Constitution, and ensuring that parliaments do not act outside their areas of power nor infringe protected rights.

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

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

Unit 4 Resolution and justice:

- **Area of Study 1 - Dispute resolution methods**
- **Area of Study 2 - Court processes and procedures, and engaging in justice**
- **Area of Study 3 - The law in focus**

The legal system provides mechanisms by which legal disputes of both a criminal and a civil nature can be resolved in a fair and just manner. Dispute resolution bodies such as courts and tribunals employ a range of means and processes that enables the resolution of legal disputes.

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

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

Geography

TBA

Physical Education

Unit 1 The human body in motion:

- **Area of Study 1 – How does the musculoskeletal system work to produce movement?**
- **Area of Study 2 How does the cardiorespiratory system function at rest and during physical activity?**

In this area of study students examine the musculoskeletal system of the human body and how the muscles and bones work together to produce movement. Through practical activities they explore the major components of the musculoskeletal system and their contributions and interactions during physical activity, sport and exercise. Students evaluate the social, cultural and environmental influences on movement, and how the capacity and functioning of the muscular and skeletal systems may act as an enabler or barrier to participation in physical activity. Sedentary behaviour, overtraining and participation at the elite and recreational level are investigated as possible causes of illness and injury to the musculoskeletal system. They also consider a variety of legal and illegal practices and substances used to enhance performance from an ethical and a biophysical perspective.

Unit 2 Physical activity, sport and society:

- **Area of Study 1 – What are the relationships between physical activity, sport, health and society?**
- **Area of Study 2 – What are the contemporary issues associated with physical activity and sport?**

This unit develops students' understanding of physical activity, sport and society from a participatory perspective. Types of physical activity are introduced and the role participation in physical activity and sedentary behaviour not only plays in their health and wellbeing but in other people's lives in different population groups.

Through a series of practical activities, students experience and explore different types of physical activity promoted in their own and different population groups. They gain an appreciation of the level of physical activity required for health benefits. Students investigate how participation in physical activity varies across the lifespan. They explore a range of factors that influence and facilitate participation in regular physical activity. They collect data to determine perceived enablers of and barriers to physical activity and the ways in which opportunities for participation in physical activity can be extended in various communities, social, cultural and environmental contexts. Students investigate individual and population-based consequences of physical inactivity and sedentary behaviour. They then create and participate in an activity plan that meets the physical activity and sedentary behaviour guidelines relevant to the particular population group being studied.

Students apply various methods to assess physical activity and sedentary behaviour levels at the individual and population level, and analyse the data in relation to physical activity and sedentary behaviour guidelines. Students study and apply the social-ecological model and/or the Youth Physical Activity Promotion Model to critique a range of individual- and settings-based strategies that are effective in promoting participation in some form of regular physical activity.

Unit 3 Movement skills and energy for physical activity:

- **Area of Study 1 – How are movement skills improved?**
- **Area of Study 2 – How does the body produce energy?**

This unit introduces students to the biomechanical and skill acquisition principles used to analyse human movement skills and energy production from a physiological perspective. Students use a variety of tools and techniques to analyse movement skills and apply biomechanical and skill acquisition principles to improve and refine movement in physical activity, sport and exercise. They use practical activities to demonstrate how correct application of these principles can lead to improved performance in physical activity and sport.

Students investigate the relative contribution and interplay of the three energy systems to performance in physical activity, sport and exercise. In particular, they investigate the characteristics of each system and the interplay of the systems during physical activity. Students explore the causes of fatigue and consider different strategies used to postpone fatigue and promote recovery.

Unit 4 Training to improve performance:

- **Area of Study 1 – What are the foundations of an effective training program?**
- **Area of Study 2 – How is training implemented effectively to improve fitness?**

In this unit students analyse movement skills from a physiological, psychological and sociocultural perspective, and apply relevant training principles and methods to improve performance within physical activity at an individual, club and elite level. Improvements in performance, in particular fitness, depend on the ability of the individual and/or coach to gain, apply and evaluate knowledge and understanding of training. Students analyse skill frequencies, movement patterns, heart rates and work to rest ratios to determine the requirements of an activity. Students consider the physiological, psychological and sociological requirements of training to design and evaluate an effective training program. Students participate in a variety of training sessions designed to improve or maintain fitness and evaluate the effectiveness of different training methods. Students critique the effectiveness of the implementation of training principles and methods to meet the needs of the individual, and evaluate the chronic adaptations to training from a theoretical perspective.

Outdoor and Environmental Studies

Unit 1: Exploring Outdoor Experiences

- **Area of Study 1 - Motivations for outdoor experiences**
- **Area of Study 2 – Influences on outdoor experiences**

This unit examines some of the ways in which humans understand and relate to nature through experiences of outdoor environments. The focus is on individuals and their personal responses to, and experiences of, outdoor environments. Students are provided with the opportunity to explore the many ways in which nature is understood and perceived. Students develop a clear understanding of the range of motivations for interacting with outdoor environments and the factors that affect an individual's access to outdoor experiences and relationships with outdoor environments.

Through outdoor experiences, students develop practical skills and knowledge to help them live sustainably in outdoor environments. Students understand the links between practical experiences and theoretical investigations, gaining insight into a variety of responses to, and relationships with, nature.

Unit 2: Discovering outdoor environments

- **Area of Study 1 - Investigating outdoor environments**
- **Area of Study 2 - Impacts on outdoor environments**

This unit focuses on the characteristics of outdoor environments and different ways of understanding them, as well as the impact of humans on outdoor environments. In this unit students study the impact of nature on humans, and the ecological, social and economic implications of the impact of humans on outdoor environments. Students develop a clear understanding of the impact of technologies and changing human lifestyles on outdoor environments.

Students examine a number of case studies of specific outdoor environments, including areas where there is evidence of human intervention. They develop the practical skills required to minimise human impact on outdoor environments. By practical experiences they are able to make comparisons between, and to reflect upon, outdoor environments, as well as to develop theoretical knowledge about natural environments.

Unit 3: Relationships with outdoor environments

- **Area of Study 1 - Historical relationships with outdoor environments**
- **Area of Study 2 - Relationships with Australian environments since 1990**

This unit's focus is the ecological, historical and social contexts of relationships between humans and outdoor environments in Australia. Case studies of a range of impacts on outdoor environments are examined in the context of the changing nature of human relationships with outdoor environments.

Students consider a number of factors that influence relationships with outdoor environments and examine the dynamic nature of relationships between humans and their environment. They are involved in one or more experiences in outdoor environments, including areas where there is evidence of human interaction. Through these practical experiences they are able to make comparisons between and reflect upon outdoor environments, as well as to develop theoretical knowledge and skills about specific natural environments.

Unit 4: Sustainable outdoor relationships

- **Area of Study 1 - Healthy outdoor environments**
- **Area of Study 2 - Sustainable outdoor environments**

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

Students engage in one or more related experiences in outdoor environments. They learn and apply the practical skills and knowledge required to sustain healthy outdoor environments, and evaluate the strategies and actions they employ. Through these practical experiences students are able to make comparisons between and to reflect upon outdoor environments, as well as to develop and apply theoretical knowledge about outdoor environments.

Health and Human Development

Unit 1 Understanding health and wellbeing:

- **Area of Study 1- Health perspectives and influences**
- **Area of Study 2 – Health and nutrition**
- **Area of Study 3 – Youth health and wellbeing**

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

In this unit students identify personal perspectives and priorities relating to health and wellbeing, and enquire into factors that influence health attitudes, beliefs and practices, including among Aboriginal and Torres Strait Islanders. Students look at multiple dimensions of health and wellbeing, the complex interplay of influences on health and wellbeing and the indicators used to measure and evaluate health status. With a youth focus, they consider both health as individuals and as a cohort. They build health literacy through interpreting and using data, through investigating the role of food, and through extended inquiry into one youth health focus area.

Unit 2 Managing health and development:

- **Area of Study 1 – Developmental transitions**
- **Area of Study 2 – Health care in Australia**

This unit investigates transitions in health and wellbeing, and development, from lifespan and societal perspectives. Students look at changes and expectations that are part of the progression from youth to adulthood. This unit promotes the application of health literacy skills through an examination of adulthood as a time of increasing independence and responsibility, involving the establishment of long-term relationships, possible considerations of parenthood and management of health-related milestones and changes. We enquire into the Australian healthcare system and extend capacity to access and analyse health information. We investigate the challenges and opportunities presented by digital media and health technologies, and consider issues surrounding the use of health data and access to quality health care.

Unit 3 Australia's Health in a globalised world:

- **Area of Study 1- Understanding health and wellbeing**
- **Area of Study 2 - Promoting health and wellbeing**

This unit looks at health, wellbeing and illness as multidimensional, dynamic and subject to different interpretations and contexts. Students begin to explore health and wellbeing as a global concept and to take a broader approach to inquiry. As they consider the benefits of optimal health and wellbeing and its importance as an individual and a collective resource, their thinking extends to health as a universal right. Students look at the fundamental conditions required for health improvement, as stated by the World Health Organization (WHO). They use this knowledge as background to their analysis and evaluation of variations in the health status of Australians. Area of Study 2 focuses on health promotion and improvements in population health over time. Students look at various public health approaches and the interdependence of different models as they research health improvements and evaluate successful programs. While the emphasis is on the Australian health system, the progression of change in public health approaches should be seen within a global context.

Unit 4 Health and human development in a global context:

- **Area of Study 1 – Health and wellbeing in a global context**
- **Area of Study 2 – Health and the Sustainable Development Goals**

This unit examines health and wellbeing, and human development in a global context. Students use data to investigate health status and burden of disease in different countries, exploring factors that contribute to health inequalities between and within countries, including the physical, social and economic conditions in which people live. Students build their understanding of health in a global context through examining changes in burden of disease over time and studying the key concepts of sustainability and human development. They consider the health implications of increased globalisation and worldwide trends relating to climate change, digital technologies, world trade and the mass movement of people. Area of Study 2 looks at global action to improve health and wellbeing and human development, focusing on the United Nations' (UN's) Sustainable Development Goals (SDGs) and the work of the World Health Organization (WHO). Students also investigate the role of non-government organisations and Australia's overseas aid program. Students evaluate the effectiveness of health initiatives and programs in a global context and reflect on their capacity to take action.

Computing

Unit 1: Area of Study 1 - Data and graphic solutions

- **Area of Study 2 - Networks**
- **Area of Study 3 - Collaboration and communication**

In this unit students focus on how data, information and networked digital systems can be used to meet a range of users' current and future needs. In Area of Study 1 students collect primary data when investigating an issue, practice or event and create a digital solution that graphically presents the findings of the investigation. In Area of Study 2 students examine the technical underpinnings of wireless and mobile networks, and security controls to protect stored and transmitted data, to design a network solution that meets an identified need or opportunity.

They predict the impact on users if the network solution were implemented. In Area of Study 3 students acquire and apply their knowledge of information architecture and user interfaces, together with web authoring skills, when creating a website to present different viewpoints on a contemporary issue. When creating solutions students need to apply relevant stages of the problem-solving methodology as well as computational, design and systems thinking skills.

Unit 2: Area of Study 1 - Programming

- **Area of Study 2 - Data analysis and visualisation**
- **Area of Study 3 - Data management**

In this unit students focus on data and how the application of computational, design and systems thinking skills support the creation of solutions that automate the processing of data. In Area of Study 1 students develop there computational thinking skills when using a programming or scripting language to create solutions. They engage in the design and development stages of the problem-solving methodology. In Area of Study 2 students develop a sound understanding of data and how a range of software tools can be used to extract data from large repositories and manipulate it to create visualisations that are clear, usable and attractive, and reduce the complexity of data. In Area of Study 3 students apply all stages of the problem-solving methodology to create a solution using database management software and explain how they are personally affected by Interactions with a database system.

Unit 3 Informatics: **Area of Study 1 - Organisations and data management**
Area of Study 2 - Data analytics: drawing conclusions

In Informatics Units 3 and 4 students focus on data, information and information systems. In Unit 3 students consider data and how it is acquired, managed, manipulated and interpreted to meet a range of needs. In Area of Study 1 students investigate the way organisations acquire data using interactive online solutions, such as websites and applications (apps), and consider how users interact with these solutions when conducting online transactions. They examine how relational database management systems (RDBMS) store and manipulate data typically acquired this way. Students use software to create user flow diagrams that depict how users interact with online solutions, and acquire and apply knowledge and skills in the use of an RDBMS to create a solution. They develop an understanding of the power and risks of using complex data as a basis for decision making.

In study area 2 students complete the first part of a project. They frame a hypothesis and then select, acquire and organise data from multiple data sets to confirm or refute this hypothesis. This data is manipulated using tools such as spread sheets or databases to help analyse and interpret it so that students can form a conclusion regarding their hypothesis. Students take an organised approach to problem solving by preparing project plans and monitoring the progress of the project. The second part of the project is completed in Unit 4.

Unit 4 Informatics: **Area of Study 1 - Data analytics: presenting the findings**
Area of Study 2 - Information management

In this unit students focus on strategies and techniques for manipulating, managing and securing data and information to meet a range of needs. In Area of Study 1 students draw on the analysis and conclusion of their hypothesis determined in Unit 3, Outcome 2, and then design, develop and evaluate a multimodal, online solution that effectively communicates the conclusion and findings. The evaluation focuses on the effectiveness of the solution in communicating the conclusion and the reasonableness of the findings. Students use their project plan to monitor their progress and assess the effectiveness of their plan and adjustments in managing the project. In Area of Study 2, they explore how different organisations manage the storage and disposal of data and information to minimise threats to the integrity and security of data and information and to optimise the handling of information.

Food Studies

Unit one Food Origins:

- **Area of Study 1 – Food around the World**
- **Area of Study 2 - Food in Australia**

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.

In Area of Study 2 students look at Australian indigenous food prior to European settlement and how food patterns have changed since, particularly through the influence of food production, processing and manufacturing industries and immigration. Students investigate cuisines that are part of Australia's culinary identity today and reflect on the concept of an Australian cuisine. They consider the influence of technology and globalisation on food patterns. Throughout this unit students complete topical and contemporary practical tasks to enhance, demonstrate and share their learning with others.

Unit 2: Food Makers

- **Area of Study 1 – Food Industries**
- **Area of Study 2 – Food in the Home**

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:

- **Area of Study 1 – The Science of Food**
- **Area of Study 2 - Food choice, health and wellbeing**

This unit investigates the many roles and everyday influences of food. Area of Study 1 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 and develop their understanding of diverse nutrient requirements.

Area of Study 2 focuses on influences on food choice: how communities, families and individuals change their eating patterns over time and how our food values and behaviours develop within social environments. Students inquire into the role of food in shaping and expressing identity and connectedness and the ways in which food information can be filtered and manipulated. They investigate behavioural principles that assist in the establishment of lifelong, healthy dietary patterns.

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

Unit 4 Food issues, challenges and futures:

- **Area of Study 1 – Environment and Ethics**
- **Area of Study 2 – Navigating Food Information**

In this unit students examine debates about global and Australian food systems. Area of Study 1 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. Area of Study 2 focuses on individual responses to food information and misinformation and the development of food knowledge, skills and habits to empower consumers to make discerning food choices.

Students consider how to assess information and draw evidence-based conclusions. They apply this methodology to navigate contemporary food fads, trends and diets. They practise and improve their food selection skills by interpreting food labels and analysing the marketing terms used on food packaging. The practical component of this unit provides students with opportunities to apply their responses to environmental and ethical food issues, and to extend their food production repertoire reflecting the Australian Dietary Guidelines and the Australian Guide to Healthy Eating.

Systems Engineering

Unit 1 Introduction to mechanical:

- **Area of Study 1 - Fundamentals of mechanical system design**
- **Area of Study 2 - Producing and evaluating mechanical systems**

This unit focuses on engineering fundamentals as the basis of understanding underlying principles and the building blocks that operate in simple to more complex mechanical devices. While this unit contains the fundamental physics and theoretical understanding of mechanical systems and how they work, the main focus is on the construction of a system. The construction process draws heavily upon design and innovation.

Students apply their knowledge to design, construct, test and evaluate operational systems. The focus of the system should be mechanical; however, it may include some electronic components. The constructed operational systems demonstrate selected theoretical principles studied in this unit. All systems require some form of energy to function. Through research, students explore and quantify how systems use or convert the energy supplied to them.
In this unit, students are introduced to the Systems Engineering Process. They are introduced to the fundamental mechanical engineering principles, including recognition of mechanical subsystems and devices, their motions, the elementary applied physics, and the related mathematical calculations that can be applied to define and explain the physical characteristics of these systems.

Unit 2 Introduction to electrotechnology:

- **Area of Study 1 - Fundamentals of electrotechnology system design**
- **Area of Study 2 - Producing and evaluating electrotechnology systems**

In this unit students study fundamental electrotechnology engineering principles. Through the application of their knowledge and the Systems Engineering Process, students produce operational systems that may also include mechanical components. In addition, students conduct research and produce technical reports. While this unit contains fundamental physics and theoretical understanding of electrotechnology systems and how they work, student focus remains on the construction of electrotechnology systems.

The construction process draws heavily upon design and innovation.
Electrotechnology is experiencing rapid developments and changes through technological innovation. The contemporary design and manufacture of electronic equipment involves increased levels of automation and inbuilt control through the inclusion of microcontrollers. In this unit students explore some of these new and emerging technologies.

Students study fundamental electrotechnology principles including applied electrical theory, representation of electronic components and devices, elementary applied physics in electrical circuits, and mathematical calculations that can be applied to define and explain electrical characteristics of circuits. The unit offers opportunities for students to apply their knowledge in the design, construction, testing and evaluation of an operational system. The system should be predominately electrotech based, but would generally have

electro-mechanical components within the system. The constructed system should provide a tangible demonstration of some of the theoretical principles studied in this unit.

Unit 3 Integrated systems engineering and energy:

- **Area of Study 1 - Controlled and integrated systems engineering desi gn**
- **Area of Study 2 - Clean energy technologies**

In this unit students study the engineering principles that are used to explain the physical properties of integrated systems and how they work. Through the application of their knowledge, students design and plan an operational, mechanical-electrotechnology integrated and controlled system. They learn about the technologies used to harness energy sources to provide power for engineered systems.

Students commence work on the design, planning and construction of one substantial controlled integrated system. This project has a strong emphasis on designing, manufacturing, testing and innovation. Students manage the project throughout the Systems Engineering Process, taking into consideration the factors that will influence the design, planning, production and use of their integrated system. The systems engineering principles underpin students' understanding of the fundamental physics and applied mathematics needed to provide a comprehensive understanding of mechanical and electrotech systems and how they function.

Students learn about sources and types of energy that enable engineered technological systems to function. Comparisons are made between the impacts of the use of renewable and non-renewable energy sources. Students learn about the technological systems developed to capture and store renewable energy and technological developments to improve the credentials of non-renewables.

Unit 4 Systems control and new and emerging technologies:

- **Area of Study 1 - Producing, testing and evaluating integrated technological systems**
- **Area of Study 2 - New and emerging technologies**

In this unit students complete the production work and test and evaluate the integrated controlled system they designed in Unit 3. Students investigate new and emerging technologies, consider reasons for their development and analyse their impacts.

Students use their investigations, design and planning to continue the fabrication of their mechanical electrotechnology integrated and controlled system using the Systems Engineering Process. They use project and risk management methods through the construction of the system and use a range of materials, tools, equipment, and components. In final stages of the Systems Engineering Process, they test, diagnose and analyse the performance of the system. They evaluate their processes and the system.

Students expand their knowledge of new and emerging developments and innovations through their investigation and analysis of a range of engineered systems. They analyse a specific new or emerging innovation, including its impacts.

Product, Design & Technology: Wood

Unit 1 Product re-design and sustainability:

- **Area of Study 1 - Product re-design for improvement**
- **Area of Study 2 - Producing and evaluating a re-designed product**

This unit focuses on the analysis, modification and improvement of a product design with consideration of the materials used and issues of sustainability. Finite resources and the proliferation of waste require sustainable product design thinking. Many products in use today have been redesigned to suit the changing needs and demands of users but with little consideration of their sustainability. Knowledge of material use and suitability for particular products is essential in product design. Additionally, knowledge of the source, origin and processing of materials is central to sustainable practices. Students consider the use of materials from a sustainable viewpoint. Sustainable practices claimed to be used by designers are examined.

Area of Study 1 provides an introduction and structured approach towards the Product design process and Product design factors. Students learn about intellectual property (IP), its implications related to product design and the importance of acknowledging the IP rights of the original designer.

In Area of Study 2, students produce a re-designed product safely using tools, equipment, machines and materials, compare it with the original design and evaluate it against the needs and requirements outlined in their design brief. If appropriate, a prototype made of less expensive materials can be presented; however, the specific materials intended for the final product would need to be indicated. A prototype is expected to be full scale and considered to be the final design of a product before production of multiples.

Unit 2 Collaborative design:

- **Area of Study 1- Designing within a team**
- **Area of Study 2 - Producing and evaluating a collaboratively designed product**

In this unit students work in teams to design and develop an item in a product range or contribute to the design, planning and production of a group product. They focus on factors including: human needs and wants; function, purpose and context for product design; aesthetics; materials and sustainability; and the impact of these factors on a design solution.
Teamwork encourages communication between students and mirrors professional design practice where designers often work within a multi-disciplinary team to develop solutions to design problems. Students also examine the use of ICT to facilitate teams that work collaboratively but are spread across the globe.

In this unit students are able to gain inspiration from an historical and/or a cultural design movement or style and its defining factors such as ideological or technological change, philosophy or aesthetics.

In Area of Study 1, students work both individually and as members of a small design team to address a problem, need or opportunity and consider the associated human-centred design factors. They design a product within a range, based on a theme, or a component of a group product. They research and refer to a chosen style or movement. In Area of Study 2 the product produced individually or collectively is evaluated.

Unit 3 Applying the Product design process:

- **Area of Study 1 The designer, client and/or end-user in product development**
- **Area of Study 2 - Product development in industry**
- **Area of Study 3 - Designing for others**

In this unit students are engaged in the design and development of a product that meets the needs and expectations of a client and/or an end-user, developed through a design process and influenced by a range of complex factors. These factors include the purpose, function and context of the product; human centred design factors; innovation and creativity; visual, tactile and aesthetic factors; sustainability concerns; economic limitations; legal responsibilities; material characteristics and properties; and technology. Design and product development and manufacture occur in a range of settings. An industrial setting provides a marked contrast to that of a 'one-off situation' in a small 'cottage' industry or a school setting. Although a product design process may differ in complexity or order, it is central to all of these situations regardless of the scale or context. This unit examines different settings and takes students through the Product design process as they design for others. In the initial stage of the Product design process, a design brief is prepared. It outlines the context or situation around the design problem and describes the needs and requirements in the form of constraints or considerations.

Students examine how a design brief is structured, how it addresses particular Product design factors and how evaluation criteria are developed from the constraints and considerations in the brief. They develop an understanding of techniques using the design brief as a springboard to direct research and design activities.

Students examine how a range of factors, including new and emerging technologies, and international and Australian standards, influence the design and development of products within industrial manufacturing settings. They consider issues associated with obsolescence and sustainability models.

Students commence the application of the Product design process for a product design for a client and/or an end-user, including writing their own design brief which will be completed and evaluated in Unit 4.

Unit 4 Product development and evaluation:

- **Area of Study 1 - Product analysis and comparison**
- **Area of Study 2- Product manufacture**
- **Area of Study 3 - Product evaluation**

In this unit students learn that evaluations are made at various points of product design, development and production. In the role of designer, students judge the suitability and viability of design ideas and options referring to the design brief and evaluation criteria in collaboration with a client and/or an end-user. Comparisons between similar products help to judge the success of a product in relation to a range of Product design factors. The environmental, economic and social impact of products throughout their life cycle can be analysed and evaluated with reference to the Product design factors.

Students use comparative analysis and evaluation methods to make judgments about commercial product design and development. They continue to develop and safely manufacture the product designed in Unit 3 and students evaluate the effectiveness and efficiency of techniques they used and the quality of their product with reference to evaluation criteria and client and/or end-user feedback.

Students make judgments about possible improvements. They produce an informative presentation to highlight the product's features to the client and/or an end-user and explain its care requirements.

Product, Design & Technology: Textiles

Unit 1 Product re-design and sustainability:

- **Area of Study 1 - Product re-design for improvement**
- **Area of Study 2 -Producing and evaluating a re-designed product**

This unit focuses on the analysis, modification and improvement of a product design with consideration of the materials used and issues of sustainability. Finite resources and the proliferation of waste require sustainable product design thinking. Many products in use today have been redesigned to suit the changing needs and demands of users but with little consideration of their sustainability. Knowledge of material use and suitability for particular products is essential in product design. Additionally, knowledge of the source, origin and processing of materials is central to sustainable practices. Students consider the use of materials from a sustainable viewpoint. Sustainable practices used by designers are examined.

Area of Study 1 provides an introduction and structured approach towards the Product design process and Product design factors. Students learn about intellectual property (IP), its implications related to product design and the importance of acknowledging the IP rights of the original designer.

In Area 2, students produce a re-designed product safely using tools, equipment, machines and materials, compare it with the original design and evaluate it against the needs and requirements outlined in their design brief. If appropriate, a prototype made of less expensive materials can be presented; however, the specific materials intended for the final product would need to be indicated. A prototype is expected to be of full scale and considered to be the final design of a product before production of multiples.

Unit 2 Collaborative design:

- **Area of Study 1 - Designing within a team**
- **Area of Study 2 Producing and evaluating a collaboratively designed product**

In this unit students work in teams to design and develop an item in a product range or contribute to the design, planning and production of a group product. They focus on factors including: human needs and

wants; function, purpose and context for product design; aesthetics; materials and sustainability; and the impact of these factors on a design solution.
Teamwork encourages communication between students and mirrors professional design practice where designers often work within a multi-disciplinary team to develop solutions to design problems. Students also examine the use of ICT to facilitate teams that work collaboratively but are spread across the globe.

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Unit 3 Applying the Product design process:

- **Area of Study 1 The designer, client and/or end-user in product development**
- **Area of Study 2 - Product development in industry**
- **Area of Study 3 - Designing for others**

In this unit students are engaged in the design and development of a product that meets the needs and expectations of a client and/or an end-user, developed through a design process and influenced by a range of complex factors. These factors include the purpose, function and context of the product; human centred design factors; innovation and creativity; visual, tactile and aesthetic factors; sustainability concerns; economic limitations; legal responsibilities; material characteristics and properties; and technology. Design and product development and manufacture occur in a range of settings. An industrial setting provides a marked contrast to that of a 'one-off situation' in a small 'cottage' industry or a school setting. Although a product design process may differ in complexity or order, it is central to all of these situations regardless of the scale or context. This unit examines different settings and takes students through the Product design process as they design for others. In the initial stage of the Product design process, a design brief is prepared. It outlines the context or situation around the design problem and describes the needs and requirements in the form of constraints or considerations.

Students examine how a design brief is structured, how it addresses particular Product design factors and how evaluation criteria are developed from the constraints and considerations in the brief. They develop an understanding of techniques in using the design brief as a springboard to direct research and design activities. They also examine how a range of factors, including new and emerging technologies, and international and Australian standards, influence the design and development of products within industrial manufacturing settings. They consider issues associated with obsolescence and sustainability models.

Students commence the application of the Product design process for a product design for a client and/or an end-user, including writing their own design brief which will be completed and evaluated in Unit 4.

Unit 4 Product development and evaluation:

- **Area of Study 1 - Product analysis and comparison**
- **Area of Study 2- Product manufacture**
- **Area of Study 3 - Product evaluation**

In this unit students learn that evaluations are made at various points of product design, development and production. In the role of designer, students judge the suitability and viability of design ideas and options referring to the design brief and evaluation criteria in collaboration with a client and/or an end-user. Comparisons between similar products help to judge the success of a product in relation to a range of Product design factors. The environmental, economic and social impact of products throughout their life cycle can be analysed and evaluated with reference to the Product design factors.

Students use comparative analysis and evaluation methods to make judgments about commercial product design and development.
Students continue to develop and safely manufacture the product designed in Unit 3 and students evaluate the effectiveness and efficiency of techniques they used and the quality of their product with reference to evaluation criteria and client and/or end-user feedback.

Students make judgments about possible improvements. They produce an informative presentation to highlight the product's features to the client and/or an end-user and explain its care requirements.

Product, Design & Technology: Metal

Unit 1 Product re-design and sustainability:

- **Area of Study 1 Product re-design for improvement**
- **Area of Study 2 Producing and evaluating a re-designed product**

This unit focuses on the analysis, modification and improvement of a product design with consideration of the materials used and issues of sustainability. Finite resources and the proliferation of waste require sustainable product design thinking. Many products in use today have been redesigned to suit the changing needs and demands of users but with little consideration of their sustainability. Knowledge of material use and suitability for particular products is essential in product design. Additionally, knowledge of the source, origin and processing of materials is central to sustainable practices. Students consider the use of materials from a sustainable viewpoint. Sustainable practices claimed to be used by designers are examined.

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- **Area of Study 1 - Designing within a team**
- **Area of Study 2 - Producing & evaluating a collaboratively designed product**

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In Area of Study 1, students examine how a design brief is structured, how it addresses particular Product design factors and how evaluation criteria are developed from the constraints and considerations in the brief. They develop an understanding of techniques in using the design brief as a springboard to direct research and design activities.

In Area of Study 2, students examine how a range of factors, including new and emerging technologies, and international and Australian standards, influence the design and development of products within industrial manufacturing settings. They consider issues associated with obsolescence and sustainability models.

In Study 3, they commence the application of the Product design process for a product design for a client and/or an end-user, including writing own design brief, which will be completed and evaluated in Unit 4.

Unit 4 Product development and evaluation:

- **Area of Study 1 - Product analysis and comparison**
- **Area of Study 2 - Product manufacture**
- **Area of Study 3 - Product evaluation**

In this unit students learn that evaluations are made at various points of product design, development and production. In the role of designer, students judge the suitability and viability of design ideas and options referring to the design brief and evaluation criteria in collaboration with a client and/or an end-user. Comparisons between similar products help to judge the success of a product in relation to a range of Product design factors. The environmental, economic and social impact of products throughout their life cycle can be analysed and evaluated with reference to the Product design factors. In Area: Study 1, students use comparative analysis and evaluation methods to make judgments about commercial product design and development.

In Area of Study 2, students continue to develop and safely manufacture the product designed in Unit 3, Outcome 3, using materials, tools, equipment and machines, and record and monitor the production processes and modifications to the production plan and product.
In Area of Study 3, students evaluate the effectiveness and efficiency of techniques they used and the quality of their product with reference to evaluation criteria and client and/or end-user feedback.

Students make judgments about possible improvements. They produce an informative presentation to highlight the product's features to the client and/or an end-user and explain its care requirements.

Music Performance

Unit 1 Area of Study 1 - Performance

- **Area of Study 2 - Performance technique**
- **Area of Study 3 - Musicianship**

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

Unit 2 Area of Study 1 - Performance

- **Area of Study 2 - Performance technique**
- **Area of Study 3 - Musicianship**
- **Area of Study 4 - Organisation of sound**

In this unit students build their performance and musicianship skills. They present performances of selected group and solo music works using one or more instruments. Students study the work of other performers through listening and analysis and use specific strategies to optimise their own approach to performance. They also study strategies for developing technical and expressive performance skills.

They identify technical, expressive and stylistic challenges relevant to works they are preparing for performance and practise related technical work. They develop skills in performing previously unseen music and study specific concepts to build their musicianship knowledge and skills. Students also devise an original composition or improvisation.

Unit 3 Area of Study 1 - Performance

- **Area of Study 2 - Performance technique**
- **Area of Study 3 - Musicianship**

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

The focus for analysis in Area of Study 3 is works and performances by Australian musicians.

Unit 4 Area of Study 1 Performance

- **Area of Study 2 Performance technique**
- **Area of Study 3 Musicianship**

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

Visual Communication & Design

Year 11 and 12

Unit 1 Introduction to visual communication design:

- **Area of Study 1 - Drawing as a means of communication**
- **Area of Study 2 - Design elements and design principles**
- **Area of Study 3 - Visual communication design in context**

Focus on using visual language to communicate messages and ideas involving learning and applying design thinking skills as well as drawing skills. Students practise their ability to draw what they see and use visualisation drawing methods to record their own ideas. Students develop presentation drawing techniques to clearly communicate technical details of objects and accurately draw the effects of light and shade.

Study includes: The relationship between design elements and design principles, develop an understanding of how design elements and principles affect the visual message and the way information and ideas are read by an audience. Students investigate design styles, research the place and purpose of design. Introduction to the 3 stages of the design process: researching designers, generating ideas and applying design knowledge and drawing skills to visualise their ideas.

Unit 2 Applications of visual communication design:

- **Area of Study 1 - Technical drawing in context**
- **Area of Study 2 - Type and imagery**
- **Area of Study 3 - Applying the design process**

Focuses on the application of visual communication design knowledge, thinking skills and drawing. Students use presentation drawing methods and technical drawing conventions to communicate information about the environmental, industrial or communication design fields. They look at typography and imagery as used in design and apply design thinking skills when exploring ways in which images and type can be manipulated to communicate in different ways. This is used as a means of organising thinking when solving design problems and presenting ideas. In response to a brief, they engage in stages of research, generation of ideas and development to create a visual folio.

Unit 3 Design thinking and practice:

- **Area of Study 1 - Analysis and practice in context**
- **Area of Study 2 - Design industry practice**
- **Area of Study 3 - Developing a brief and generating ideas**

In this unit students gain an understanding of the process designers use to communicate ideas with clients, target audiences, other designers and specialists. Through investigation and analysis of existing visual communications, students gain insight into how the selection of methods, media, materials and the application of design elements and design principles can create effective visual communications for specific audiences and purposes. They investigate and experiment with the use of manual and digital methods, media and materials to make informed decisions when selecting suitable approaches for the development of their own design ideas and concepts. Students use their research and analysis to support the development of their own work. They establish a brief and apply the design process. They identify and describe a client and create a folio for two distinctly different needs of that client

Unit 4 Design development and presentation:

- **Area of Study 1 - Development of design concepts**
- **Area of Study 2 - Final presentations**
- **Area of Study 3 - Evaluation and explanation**

The focus of this unit is the development of two distinct final presentations of visual communications to meet the requirements of the brief. This involves applying the design process twice to meet each of the stated needs. Students utilise a range of digital and manual two- and three-dimensional methods, media and materials. They investigate design elements and design principles to create different communications to their target audience. As students undertake further research or idea generation they develop an understanding of the design process. Reflection and evaluation of design solutions against the brief helps students to stay focused. Finally, students evaluate their visual communications and devise a pitch to present their design thinking and decision making to the client.

Studio Arts

Year 11 and 12

Unit 1 Studio inspiration and techniques

- **Area of Study 1 – Researching and recording ideas**
- **Area of Study 2 – Studio practice**
- **Area of Study 3 - Interpreting art ideas and use of materials and techniques**

In this unit students focus on developing an individual understanding of the stages of studio practice and learn how to explore, develop, refine, resolve and present artworks. They explore sources of inspiration, research artistic influences, develop individual ideas and explore a range of materials and techniques related to specific art forms. Using documented evidence in a visual diary, they progressively refine and resolve their skills to communicate ideas in artworks. Students also research and analyse the ways in which artists from different times and cultures have developed their studio practice to interpret and express ideas, source inspiration and apply materials and techniques in artworks. The exhibition of artworks is integral to Unit 1 and students are encouraged to visit a variety of exhibition spaces throughout the unit, reflect on the different environments and examine how artworks are presented to an audience.

Unit 2 Studio exploration and concepts

- **Area of Study 1 – Exploration of studio practice and development of artwork**
- **Area of Study 2 - Ideas and styles in artworks**

In this unit students focus on establishing and using a studio practice to produce artworks. The studio practice includes the formulation and use of an individual approach to documenting sources of inspiration, and experimentation with selected materials and techniques relevant to specific art forms. Students explore and develop ideas and subject matter, create aesthetic qualities and record the development of the work in a visual diary as part of the studio process. Through the study of art movements and styles, students begin to understand the use of other artists' work in the making of new artworks. Students also develop skills in the visual analysis of artworks. Artworks made by artists from different times and cultures are analysed to understand developments in studio practice. Using a range of art periods, movements or styles, students develop a broader knowledge about the history of art. Analysis is used to understand the artists' ideas and how they have created aesthetic qualities and subject matter. Comparisons of contemporary art with historical art styles and movements should be encouraged. The exhibition of artworks is integral to Unit 2 and students are encouraged to visit a variety of exhibition spaces throughout the unit, reflect on the different environments and examine how artworks are presented to an audience.

Unit 3 Studio Production and professional art practices:

- **Area of Study 1- Exploration proposal**
- **Area of Study 2 - Studio process**
- **Area of Study 3 – Artists and studio practices**

In this unit students focus on the implementation of an individual studio process leading to the production of a range of potential directions. Students develop and use an exploration proposal to define an area of creative exploration. They plan and apply a studio process to explore and develop their individual ideas. Analysis of these explorations and the development of the potential directions is an intrinsic part of the studio process to support the making of finished artworks in Unit 4. For this study, the exploration proposal supports the student to identify a direction for their studio process. The student determines the studio process. This process records trialling, experimenting, analysing and evaluating the extent to which art practices successfully communicate ideas presented in the exploration proposal. From this process students progressively develop and identify a range of potential directions. Students will select some of these potential directions from which to develop at least two artworks in Unit 4. The study of artists and their work practices and processes may provide inspiration for students' own approaches to art making. Students investigate and analyse the response of artists to a wide range of source material and examine their use of materials and techniques. They explore professional art practices of artists from different historical and cultural contexts in relation to particular artworks and art forms. The exhibition of artworks is integral to Unit 3 and students are expected to visit a variety of exhibitions throughout the unit, reflect on the different environments where artworks are exhibited and examine how artworks are presented to an audience. Students are expected to visit at least two different exhibitions and study specific artworks displayed in these exhibitions during their current year of study.

Unit 4 Studio practice and art industry contexts:

- **Area of Study 1 – Production and presentation of artwork**
- **Area of Study 2 - Evaluation**
- **Area of Study 3 - Art industry contexts**

In this unit students focus on the planning, production and evaluation required to develop, refine and present artworks that link cohesively according to the ideas resolved in Unit 3. To support the creation of artworks, they present visual and written evaluation that explains why they selected a range of potential directions from Unit 3 to produce at least two finished artworks in Unit 4. The development of these should reflect refinement and skillful application of materials and techniques, and the resolution of ideas and aesthetic qualities discussed in the exploration proposal in Unit 3. Once the artworks have been made, students provide an evaluation about the cohesive relationship between them. This unit also investigates aspects of artists' involvement in the art industry, focusing on a least two different exhibitions, that the student has visited in the current year of study with reference to specific artworks in those exhibitions. Students investigate the methods and considerations of the artist and/or curator involved in the preparation, presentation and conservation of artworks displayed in exhibitions in at least two different galleries or exhibitions. Students examine a range of environments for the presentation of artworks including public galleries and museums, commercial and private galleries, university art galleries, artist-run spaces, alternative art spaces and online gallery spaces.

Media

Year 11 and 12

Unit 1 Representation and technologies of representation:

- **Area of Study 1 - Representation**
- **Area of Study 2 - Technologies of representation**
- **Area of Study 3 - New media**

In this unit students develop an understanding of the relationship between the media, technology and the representations present in media forms. We study the relationships between media technologies, audiences and society. Individually we develop practical and analytical skills, including an understanding of the codes and conventions used to create meaning in media products, the role audiences play in constructing meaning from media representations and the creative /cultural impact of new technologies.

Unit 2 Media production and the media industry:

- **Area of Study 1 - Media production**
- **Area of Study 2 - Media industry production**
- **Area of Study 3 - Australian media organisations**

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

Unit 3 Narrative and media production design:

- **Area of Study 1 - Narrative**
- **Area of Study 2 - Media production skills**
- **Area of Study 3 - Media production design**

In this unit students develop an understanding of film, television or print media production and story elements, and learn to recognise the role and significance of narrative organisation in fictional film, television or print media texts. Students examine how production and story elements work together to structure meaning in narratives to engage audiences. They also develop practical skills through undertaking exercises related to the design and production process and compile a media production design plan for a specific form and audience. This is presented as a written planning document with visual representations that use media planning conventions related to the media form the student chooses to produce.

Unit 4 Media: process, influence and society's values:

- **Area of Study 1 - Media processes**
- **Area of Study 2 - Media texts and society's values**
- **Area of Study 3 - Media influence**

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

Vocational Education and Training (VET)

Vocational Education and Training (VET) is a national system designed to skill workers to work in particular industries, e.g. Building Hospitality, Engineering, etc. Students in schools can also access this industry training. VET in Schools (VETiS) counts within their VCE or VCAL program in the same way as any VCE and VCAL subjects.

The VCAA has developed scored assessment for the majority of VET programs, so students also count VET programs in their ATAR if they undertake scored assessment.

Students may include a VET certificate in their VCE program or complete a VET in the VCAL program and undertake training in a specific vocational area. VET courses skill students in specific industry areas that directly relate to the requirements of that workplace. In most cases, a student will complete on-the-job and off-the-job training during their VET certificate, which adds value to each student's options for employment. Students receive a Nationally Accredited Industry Based Certificate at Level II or III and a Statement of Attainment with all industry units listed.

VET prepares students for their future working lives and is best suited to students who:

- are thinking of obtaining an apprenticeship or traineeship after school.
- are already skilled in an industry area and can gain excellent study scores for university entry
- would like to gain an industry qualification as well as the their VCE or VCAL
- enjoy a more hands-on learning environment
- want to keep their options open for completing Year 12
- want to obtain part-time work in an industry

In 2018 the following VET subjects are offered:

- **VET Automotive Studies**
- **VET Building and Construction**
- **VET Business**
- **VET Engineering Studies**
- **VET Retail Cosmetics**
- **VET Salon Assistance**
- **VET Screen and Media**
- **VET Information, digital media and technology.**
- **VET Dance**
- **VET Agriculture**
- **VET Hospitality (kitchen operations)**
- **VET Horticulture**
- **VET Animal Studies**
- **VET Music Industry Skills**
- **VET Sport and Recreation**

22015VIC Automotive Studies (Vocational Preparation)

Delivery Site: Geelong Industry Trade Training Centre

The Geelong Industry Trade Training Centre invites applications from students with an interest in Automotive Studies.

DO YOU ….
- Think about a career in the Automotive Retail, Service & Repair industry?
- Have a desire to work with advanced systems and technologies?
- Enjoy using practical skills?
- Enjoy working with others in a team environment?
- Want to broaden your skills for future employment?

Course Overview

Automotive Certificate II gives training for the automotive industry and is aimed at making students work ready or equipped for further study. When students complete the full Year 11 and 12 course they will receive dual credits – both for VCE units (1, 2, 3 and 4) and VET. VCAL hour requirements are also met. Whether you are interested in a career in the motor industry or just want to learn about cars, you will enjoy this subject

Enrolment

There are no pre-requisites for Automotive first year. Students must complete first year prior to enrolling in second year Automotive.

Outcomes

- Completion of a Certificate II.
- Be 'work ready' for the Automotive industry.
- A 10% increment towards their ATAR score on successful completion, or a credit towards a VCAL certificate.
- Gain valuable Industry specific knowledge and work skills allowing further opportunities such as Retail sales or Apprenticeships such as panel beating, Auto electrician, marine etc

Pathways

Career and employment opportunities in one of the largest industries, the industry employs more than 270,000 people with an annual turnover of over $80 Billion.

TAFE: for certificate level courses

University: when combined with your VCE. Degree and Diploma courses available through most universities.

Note: This Course is approximately 40% theory and 60% practical

VET Building & Construction 22216 VIC

Delivery Site: Geelong Industry Trade Training Centre

The Geelong Industry Trade Training Centre invites applications from students with a keen interest in the building industry.

DO YOU …
- Enjoy building things made out of timber?
- Like working outdoors?
- Enjoy working with others?
- Want many career choices?
- Pay attention to detail?
- Willingly follow instructions?
- Communicate well with others?

Course Overview

This course offers students the opportunity to complete 16+ modules of pre-Apprenticeship Building & Construction (Carpentry).

It combines accredited VET curriculum and credit of VCE units 1, 2 , 3 and 4 or the required VCAL VET hours while pursuing an interest in the Building industry

Enrolment

Students must have successfully completed Year 9. Selection will be based on application and possible interview.

Outomes:

- Complete two-thirds of pre-apprenticeship in Building & Construction (Carpentry).
- Meets all VCE unit and VCAL hour requirements.
- Extra units of competency are offered at the end of the year to complete full Pre-Apprenticeship.
- Gain valuable skills and experience.
- Gain industry Induction Card (at additional cost)
- The option of gaining a Limited Height Scaffolding Certificate.

Pathways:

TAFE:

Certificate level courses

University: Combined with your completed VCE. Degree and Diploma courses at most universities.

- Carpentry
- Builder
- Cabinet Maker

This Course is approximately 30% theory and 70% practical

BSB20107 VET Business

Year 11 & 12 Units 1 -4

Delivery Site: Northern Bay College

Northern Bay College invites applications from students with a keen interest in information technology.

DO YOU …
- think about a career in the business/finance industry?
- like to plan and organise activities?
- like to be well organised?
- enjoy working in a team situation?
- take pride in the presentation and accuracy of your work?
- want to broaden your skills for future employment?

Course Overview

This course provides the knowledge and practical skills necessary to work effectively in a wide range of business and office environments. Students will study office, communication and clerical procedures, as well as word processing, spread sheets and a range of presentation software. Students who wish to continue beyond a one year course, can transition to the 30112 Certificate III in Business in second year

Enrolment

There are no prerequisites for VET Business first Year.

Outcomes:

Certificate II in Business.
Eligible for up to four unit credits at VCE Units 1 & 2 level.
Eligible for two credits at unit VCE Unit 3 and 4 level.
Credit towards a VCAL certificate
Solid preparation for Year 12 Certificate III in Business modules.

Pathways

Business Administration Banking Travel & Tourism Your own business Public Relations Real Estate Retail & Sales Office Work Receptionist

This VET course is completely classroom based

22209VIC Engineering Studies

(Delivery Site: Geelong Industry Trade Training Centre)

Geelong Industry Trade Training Centre invites applications from students with a keen interest in engineering.

DO YOU …	Think about a career in the engineering industry?
	Have good hand eye coordination?
	Have good practical skills?
	Enjoy working in a team?
	Have a desire to work with up-to-date trade equipment?
	Want to broaden your skills for future employment?

Course Overview

The course provides the basic knowledge of practical skills at an entry level necessary to work effectively in a wide range of engineering environments. Students will study basic engineering and perform practical hand skills as well as welding, lathe operation and milling. It focuses on four main areas: Production, Mechanical, Engineering and Fabrication.

Enrolment

There are no pre-requisites for VET Engineering first year.
However, students must have a keen interest in the engineering industry and be supported by good literacy and numeracy levels with at least a pass at Year 9 level.

Outcomes

- Completion of a Certificate II in Engineering
- Contributes to VCE with Units 1, 2, 3, and 4
- Eligible to gain a study score contributing towards your ATAR results.
- Credit towards a VCAL certificate
- Gain valuable work skills in an industry work place.

Pathways

There are many career opportunities for students who have completed a VET Engineering Certificate, including:

TAFE: for certificate level courses
University: when combined with your VCE ATAR.
Degree and Diploma courses available through most universities.

SHB20116 VET Retail Cosmetics

(Delivery Site: Geelong Industry Trade Training Centre)

Geelong Industry Trade Training Centre and The Centre of Excellence invites applications from students with a keen interest in retail cosmetics.

DO YOU …	Think about a career in the retail cosmetic industry?
	Have good hand eye coordination?
	Have good practical skills?
	Enjoy retail environments?
	Want to broaden your skills for future employment?

Course Overview

This course provides the basic knowledge of practical skills at an entry level necessary to work effectively in a wide range of retail environments. Upon completion students will be able to gain employment in beauty and hairdressing salons, retail outlets and department stores.

Enrolment

There are no pre-requisites for VET Retail Cosmetics
However, students must have a keen interest in the beauty and retail industry.

Outcomes

- Completion of a Certificate II in Retail Cosmetics
- Credit towards a VCAL certificate
- Gain valuable work skills in an industry work place.

Pathways

There are many career opportunities for students who have completed a VET Retail Cosmetics Certificate, including:

TAFE: for certificate level courses
University: when combined with your VCE ATAR.

SHB20216 VET Salon Assistance

Year 11 and 12

(Delivery Site: Geelong Industry Trade Training Centre)

Geelong Industry Trade Training Centre and The Centre of Excellence invites applications from students with a keen interest in Salon Assistance.

DO YOU …	Think about a career in the hairdressing and beauty industry?
	Have good hand eye coordination?
	Have good practical skills?
	Enjoy retail environments?
	Want to broaden your skills for future employment?

Course Overview

This course provides the basic knowledge of practical skills at an entry level necessary to work effectively in a wide range of salon environments. Upon completion students will be able to apply for further study in hairdressing and beauty.

Enrolment

There are no pre-requisites for VET Salon Assistance.
However, students must have a keen interest in the hairdressing, beauty or retail industry.

Outcomes

- Completion of a Certificate II in Salon Assistance
- Credit towards a VCAL certificate
- Gain valuable work skills in an industry work place.

Pathways

There are many career opportunities for students who have completed a VET Salon Assistance Certificate, including:

TAFE: for certificate level courses
University: when combined with your VCE ATAR.

VET Information, Digital Media & Technology

Year 11 and 12

(Delivery Site: North Geelong Secondary College)

AIET invites applications from students with a keen interest in Information, digital media and technology.

DO YOU …
- Think about a career in the information technology field?
- Have good ICT skills?
- Have good practical skills?
- Want to learn about computer hardware and software?
- Want to broaden your skills for future employment?

Course Overview

This course provides the basic knowledge of practical skills at an entry level necessary to work effectively in a wide range of ICT environments. Upon completion students will be able to apply for employment or further study in ICT.

Enrolment

There are no pre-requisites for VET Information, digital media and technology.

Units included:

- Work and communicate effectively in an IT environment
- Run standard diagnostic tests
- Create user documentation
- Install and optimise operating system software
- Maintain equipment and software

Outcomes

Certificate III in Information, Digital Media & Technology
Eligible to gain a study score contributing towards your ATAR results.
Credit towards a VCAL certificate
Gain valuable work skills in an industry work place.

Pathways

There are many career opportunities for students who have completed a VET Information, digital media and technology Certificate, including:

TAFE: for certificate level courses
University: when combined with your VCE ATAR.

Please note this course 35% practical and 65% theory.

VET Dance

Year 11 and 12

(Delivery Site: Geelong High School)

Application are invited from students with a keen interest in dance.

DO YOU …	Think about a career in Dance?
	Have good performance skills?
	Want to learn about dance styles?
	Want to broaden your skills for future employment?

Course Overview

This course provides the basic knowledge of practical skills at an entry level necessary to work effectively in a wide range of dance environments. Upon completion students will be able to apply for employment or further study in dance.

Enrolment

There are no pre-requisites for VET dance.

Outcomes

Certificate II in Dance
Eligible to gain a study score contributing towards your ATAR results.
Credit towards a VCAL certificate
Gain valuable work skills in an industry work place.

Pathways

There are many career opportunities for students who have completed a VET Dance including:

TAFE: for certificate level courses
University: when combined with your VCE ATAR.

Career

Performer	Choreographer	Director
Dance Teacher	Stage Production	Dance Manager

VET Agriculture AHC20116

Year 11 and 12

Delivery site: Convent College Trade Skills Centre

Convent College Trade Skills Centre invites applications from students with a keen interest in agriculture.

DO YOU …	Have a passion to work with animals? Love the outdoors? Want to work in an agricultural environment? Enjoy working in a team?

Course Overview

Students enrolled in this course will gain skills and knowledge in a range of agricultural environments. Students will study time management, leadership, organisation of activities, using strategies, communication, and environmental awareness. The course is designed to skill students to work in agriculture. By the end of the first year they will have work-ready skills and have established the foundation for succeeding at Units 3 & 4 level.

Enrolment

There are no prerequisites for VET Agriculture. Units 1 & 2 need to be completed before attempting Units 3 & 4.

Core units include:

Work effectively in a team
Participate in environmentally sustainable work practices
Participate I work health and safety practices.

Pathways :

TAFE - Certificate Level courses
University – Diploma and degree courses

The Agriculture Course is approximately 50% theory and 50% practical

VET Hospitality SIT20312 (Kitchen Operations)

Year 11 and 12 Units 1-4

Delivery Site: Geelong Industry Trade Training Centre

The Geelong Industry Trade Training Centre invites applications from students with a keen interest in food.

DO YOU …
- Have a passion for cooking?
- Love food and its' preparation?
- Want to be a chef?
- Plan to work in hospitality?
- Enjoy working in a team?
- Have creative flair?

Course Overview

Students in the first year of the VET Hospitality course will gain skills and knowledge in the kitchen, including hygiene awareness, time management, leadership, organisation of activities, using ingredients, strategies, communication, and cultural awareness. The course is designed to skill students to work in a commercial kitchen By the end of the first year they will have work-ready skills and have established the foundation for succeeding at Units 3 & 4 level.

Enrolment

There are no prerequisites for VET Hospitality, although it is recommended that students complete Introduction to VET Hospitality before attempting this subject. However Units 1 & 2 need to be completed before attempting Units 3 & 4.

UNITS OF STUDY Year 1 VET Hospitality Units 1 & 2, including:

- Basic Cookery methods
- Basic Hygiene in the Kitchen
- Basic Health & Safety
- Working effectively with others
- How to maintain and clean premises
- Preparing simple dishes
- Year 2 VET Hospitality Units 3 & 4 including:
- Working with appetisers, salads, sauces vegetables, eggs, purchasing goods,
- Using cookery skills

VET Hospitality Units 3 & 4 including:

- Working with appetisers, salads, sauces vegetables, eggs, desserts
- poultry and food service
- Meets requirements for VCAL courses

Pathways:

TAFE - Certificate Level courses
University – Diploma and degree courses
Employment- Chef Restaurants Tourism Domestic science Catering

The Hospitality Course has approximately 30% theory and 70% practical

VET Horticulture

Year 11 and 12

Delivery site: Convent College Trade Skills Centre

Convent College Trade Skills Centre invites applications from students with a keen interest in horticulture.

DO YOU …	Have a passion to work outdoors? Love design and landscaping? Enjoy working in a team?

Course Overview

Students enrolled in this course will gain skills and knowledge in horticulture. Students will study time management, leadership, organisation of activities, using strategies, communication, and environmental awareness. The course is designed to skill students to work in horticulture. By the end of the first year they will have work-ready skills and have established the foundation for succeeding at Units 3 & 4 level.

Enrolment

There are no prerequisites for VET Horticulture. Units 1 & 2 need to be completed before attempting Units 3 & 4.

Core units of Study include:

- Participate in work health and safety processes
- Recognise plants
- Treat weeds
- Treat plant pests, diseases and disorders
- Assist with soil or growing media sampling and testing.

Pathways :

TAFE - Certificate Level courses
University – Diploma and degree courses

The Horticulture Course is approximately 50% theory and 50% practical

VET Animal Studies

Year 11 and 12

Delivery site: Convent College Trade Skills Centre

Convent College Trade Skills Centre invites applications from students with a keen interest in Animal Studies.

DO YOU …	Have a passion to work outdoors? Love animals? Enjoy working in a team?

Course Overview

Students enrolled in this course will gain skills and knowledge in an animal studies and care. Students will study time management, leadership, organisation of activities, using strategies, communication, and environmental awareness. The course is designed to skill students to work in animal studies. By the end of the first year they will have work-ready skills and have established the foundation for succeeding at Units 3 & 4 level.

Enrolment

There are no prerequisites for VET Animal Studies. Units 1 & 2 need to be completed before attempting Units 3 & 4.

Core units of Study include:

- Feed and water animals
- Work in the animal care industry
- Provide basic first aid for animals
- Source information for animal care needs
- Provide basic care for Dogs
- Provide basic care for Mammals
- Provide basic care for Birds
- Prepare for and conduct a tour or presentation

Pathways

TAFE - Certificate Level courses
University – Diploma and degree courses

The Animals Studies Course is approximately 50% theory and 50% practical

VET Music Industry Skills CUA30915

Year 11 and 12

Delivery Site: Northern Bay College

We invite application from students with a keen interest in the Music industry

DO YOU **Love listening to music?**
Love playing music?
Have an interest in computer music and audio recording?
Want to learn how to operate a PA system?

Course Overview

The Music Industry training package sets out the competencies required for many different careers across the industry including those in recording, live performance, computer software and multimedia, music publishing, advertising, music video, radio, film and television, music tuition, live theatre and music media.

Enrolment

Students must have up to a Year 10 standard in literacy and numeracy, and have a keen interest in the music industry. In the second year of the course students choose to specialize in either music performance or sound production. Classes are hands-on, with a strong emphasis on learning by doing.

Outcomes

- Complete the Certificate III in Music Industry over two years, or Certificate II in Music Industry over one year.
- Nationally accredited training.
- Can be undertaken as a VCE subject (scored assessment)

Pathways

Further education in Music Industry/Music Business at University or TAFE
Employment: Professional musician, Sound engineer, Band manager, Agent, Event Organiser, Lighting technician / designer, Music Journalism, Road Crew, Advertising, Stage and Production Management

This VET course is approximately 90% practical and 10% theory.

SIS30513 Sport and Recreation

Year 11 and 12
(Delivery Site: Northern Bay College)

Northern Bay College invites applications from students with a keen interest in Sport and Recreation.

DO YOU …

- think about a career in the Sport and Recreation?
- like to plan and organise activities?
- enjoy working in a team situation?
- want to broaden your skills for future employment?

Course Overview

This course provides students with the skills and knowledge that will enhance their employment prospects in the sport and recreation industries. Students can choose from a range of electives including teaching the fundamental skills of athletics, basketball, gymnastics or squash, maintaining sport and recreation facilities and applying legal and ethical coaching practices.

Enrolment

There are no pre-requisites for VET Sport and Recreation first Year.

Outcomes

- complete Certificate III in Sport and Recreation over two years.
- eligible for up to **four** unit credits at VCE Units 1 & 2 level.
- credit towards a VCAL certificate

Pathways

Further education in Outdoor Recreation field at University or TAFE

Employment:

pool lifeguard	sports retail
sports trainer	swim teacher
sport and recreation attendant	
recreation officer	leisure services officer

VCE Enrichment Programs

Study Residential

Year 12 students partake in a study residential at the start of the year, including an overnight experience. The activities build on the study skills previously presented at NBC, as well as further workshops on exam preparation and CAPs.

The program also consists of a tour of the ACU city campus that provides students with the opportunity to observe the facilities available at ACU and raise aspiration for future study options outside of Geelong. Library activities introduce and educate students about how to maximize library services and resources. Students take part in an interactive activity that will test the skills they have learned in the activity. The main section of the day involves the lectures' and current ACU students through an introduction to academic skills. These proactive learning practices develop skills relating to note taking, referencing and time management.

Deakin Experience

Year 11 Students in VCE undertake a day-long program at Deakin University in Geelong. This allows Year 11's to understand what University life is like, undertaking a range of engaging tutorial based activities and enjoying lunch in the pleasant surrounds of the University. This usually occurs in Term 3 and is compulsory for all Year 11 VCE students

Deakin Study Skills / Elevate Study Sensei

VCE students will have the opportunity to develop their study skills throughout their Senior Years. This includes presentations from both Deakin University and Elevate Education. Elevate's quest is to unlock the secret to the final years of school: Why do the top students get the top marks?

Having carried out an exhaustive process of benchmarking the study habits of thousands of past students, they have identified a number of areas where the practices of the top students differ from average or lower performing students. It is our belief and experience that any student can improve their marks by tapping into, replicating and using these study skills and techniques

Tertiary Information Service

Representatives from each of Victoria's universities, TAFEs and many independent colleges provide an information session to Year 12 students who are working to finalise their post-secondary study options.

Principal's Recommendation Program (PRP)

The Principal's Recommendation Program (PRP) at Australian Catholic University (ACU) has collaborated with Northern Bay College to encourage our VCE students to consider participation in higher education and to achieve higher education entrance. The PRP's main objective is to offer our current Year 12 students, a place in an ACU degree course or pathway course. It is negotiated with the College and identifies students who have experienced educational disadvantage. In consultation with the ACU Equity Pathways Officer a student may be eligible for consideration.

VCE Expo

VCE Students will also have the opportunity to look at careers and opportunities at the annual VCE Expo in Melbourne. This provides students with a range of study and employment options from a range of Universities, TAFE's and other Private Providers.

Private Study

Students who have spare sessions as part of their VCE program (Mainly Year 12 students) are expected to stay at school and undertake supervised private study. This allows support for students to maximise their study time, in a relaxed and resource rich environment within the VCE Centre.

Catch Up Classes

Students who fall behind in VCE are offered support through Catch Up Classes, which are available most nights in the VCE Centre. All students are welcome to attend. Students identified by their teacher as falling behind may be required to attend.

Extra-Curricular Programs

Instrumental Music Program

Northern Bay College Goldsworthy Campus provides an extra-curricula program where students can learn Guitar (Acoustic and Electric) Bass Guitar, Keyboard / Piano and Drums / Percussion. Lessons for orchestral instruments i.e. Woodwinds and Brass will be available soon. All students in the instrumental program are offered the opportunity to participate in various excursions and camps throughout the year. For example, camps provide opportunities for performances, rehearsals and workshops with students from other schools as well as encouraging new friendships. The program promotes teamwork and community involvement through having regular rehearsals and public performances. It is a fantastic opportunity for our students to be involved in such a program as an extension to their academic study as well as receiving a well-balanced schooling experience.

There is no prior musical knowledge required to enrol into the program. Students will be withdrawn from their normal classes to have a half hour lesson on a rotating timetable every week and an hour of band rehearsal after school.
Students begin lessons in small groups learning the rudiments of their instrument. When a degree of proficiency is achieved students are required to play in a school band e.g. Junior Rock Band. Promotion to other senior bands is possible at any time.
Learning a musical instrument can teach:

- Self Discipline
- Team connectivity
- Expression
- Musicianship
- Coordination
- Confidence

Learning an instrument can lead to VCE / VET Music Subjects. University and TAFE Diplomas and Degrees, as well as interesting and exciting careers.
In addition, the College is introducing various external music exams (i.e. AMEB, Trinity Rock and Pop, Rock School etc.) that students may wish to enter in April / May or June / July. Entry fees vary depending on exam grade.
If your child would like to learn a musical instrument please contact the College administration office. Students may also hire instruments.

Science Maths Technology (SMT) Learning Club

Year 10-12 Extra Curricular

SMT (Science Maths Technology) Learning Club offers extracurricular activities and excursions to 15 students from Years 10, 11 and 12 at Northern Bay P-12 College demonstrating high academic achievement in the areas of Science, Math's and Technology.

The SMT Club is supported by adult volunteer mentors from health and engineering fields who provide career and industry information, advice and guidance to participating students.

2017 for SMT included an excursion to VIVA Energy, Deakin University and the Melbourne Aquarium. The incursions will include guest speakers from the mining industry, 3D printing industry, avionics and robotics and CSIRO to promote discussion around careers, study pathways and employment opportunities.

The SMT students love this club. It is fun, flexible and innovative and most importantly, led by the students. We feel that this is a very successful experience for Northern Bay College students.

Year 7-12 Sports Program

At Northern Bay College all Year 7-12 students have the opportunity to participate in Interschool sport against other schools. The sport program is designed to give every student the opportunity to participate in the sports that they enjoy, and also experience sports they may not have been exposed to in the past.

In term 1 students' have the opportunity to represent the college in swimming. Swimming trials are held in the middle of February and those students who perform well go on to swim in the Barwon & Bellarine Divisions swimming carnival held at Kardinia Pool.

The Northern Bay College Year 7-12 athletics carnival is held at Landy Field in March with Year 7-12 students from the Goldsworthy, Hendy, Wexford, Tallis and Peacock campuses all competing in a house competition. Students who perform well on this day then represent the college in the Barwon Division Athletics Carnival in May. Students who excel in athletics have the opportunity to go all the way through to the State finals.

Senior Team Sport

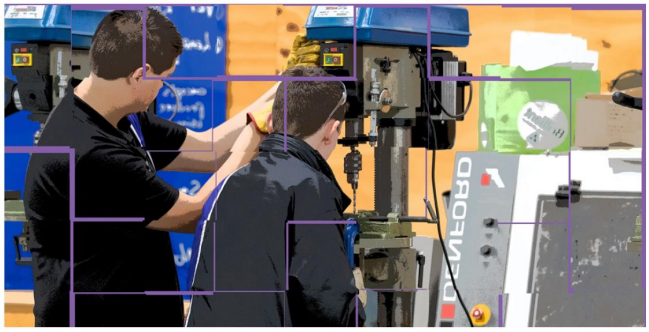
At Northern Bay College we recognise the benefits of sport for all children. Our sport program, along with the Physical Education program, allows students to work in teams, participate in sport/physical activity on a regular basis and represent our college against other schools in a well organised, enjoyable setting.

Students at the Goldsworthy campus (Years 9-12) can sign-up and/or participate in lunchtime training sessions in order to participate in competing teams.

Students have the opportunity to sign-up for the college team in the sport of their choice. Trials for each sport are then held and teams are picked from these trials. Participation has increased significantly in extra curricular sport teams over recent years.

VCE HANDBOOK 2018

Northern Bay P–12 College



Goldsworthy Campus VCE Booklet 2018