



Box Hill Senior Secondary College

**2025 Learning Program
Handbook**

Contents

Subject Selection	5
Year 9 Program	6
English	7
Mathematics	7
Humanities	7
Science	7
Health & Physical Education	8
Auslan	8
Year 10 Program	8
English	9
Mathematics	9
Year 9 &10 Elective Options.....	10
Arts	10
ART MAKING.....	10
FASHION ILLUSTRATION	10
CONTEMPORARY PAINTING AND DRAWING.....	10
STREET ART GRAFFITI	10
PHOTOGRAPHY.....	11
SONG MAKING AND SOUND PRODUCTION	11
MUSIC MAKING AND APPRECIATION	11
MEDIA STUDIES.....	11
PRINT MEDIA.....	12
English	12
CLASSIC LITERATURE & MODERN ADAPTATIONS.....	12
Humanities.....	12
HISTORY: MODERN HISTORY - FORGING A NATION	12
GEOGRAPHY	12
MAD FOR BUSINESS.....	13
MONEY MONEY MONEY	13
CHINESE (FIRST LANGUAGE).....	13
Health & Physical Education.....	13
SPORT SCIENCE.....	13
HUMAN MOVEMENT.....	14
SKILL ACQUISITION & COACHING	14
CERTIFICATE II IN OUTDOOR RECREATION	14
Technology	15
ELECTRONICS & ROBOTICS.....	15

FOOD CULTURE – MULTICULTURAL MELBOURNE.....	15
BAKERY BASICS.....	16
FOOD STUDIES.....	16
INTRODUCTION TO FOOD AND THE KITCHEN	16
METALS.....	16
WOOD & TECHNICAL DRAWING	17
Science	18
PHYSICS	18
BIOLOGY.....	18
CHEMISTRY	18
ENVIRONMENTAL SCIENCE.....	18
GENERAL SCIENCE	18
FORENSIC SCIENCE.....	19
SPORT PSYCHOLOGY	19
Senior School Certificates	20
Victorian Certificate of Education (VCE).....	20
Arts	21
ART MAKING & EXHIBITING	21
ART CREATIVE PRACTICE	21
MEDIA.....	22
MUSIC PERFORMANCE (CONTEMPORARY).....	23
English	24
ENGLISH (INCLUDING EAL)	24
LITERATURE	25
Languages	27
CHINESE (FIRST LANGUAGE).....	27
Health & Physical Education.....	27
HEALTH & HUMAN DEVELOPMENT	27
PHYSICAL EDUCATION	28
Humanities.....	30
ACCOUNTING	30
BUSINESS MANAGEMENT.....	31
HISTORY	31
LEGAL STUDIES.....	32
Mathematics	33
FOUNDATION MATHEMATICS	33
GENERAL MATHEMATICS.....	34
MATHEMATICAL METHODS.....	34

SPECIALIST MATHEMATICS	36
Science	37
BIOLOGY	37
CHEMISTRY	38
ENVIRONMENTAL SCIENCE	39
PHYSICS	40
PSYCHOLOGY	40
Technology	41
FOOD STUDIES.....	41
PRODUCT DESIGN & TECHNOLOGY.....	42
SYSTEMS ENGINEERING.....	44
VCE Vocational Major (VCE-VM).....	46
Vocational and Educational Training (VET) [all students]	47

Subject Selection

New students to the college will be supported through the subject selection process during their enrolment interview. **This includes all Year 9 students. Year 10 - 12 students** will have the opportunity to begin their subject selection process during GEM sessions at school during Term 3. This will involve students using the attached planner and selecting subjects from the list of VCE Units available at Box Hill Senior Secondary College. Once students have made their preferences, the college will decide based on interest, which studies will run in any given year. Effort and commitment will always be made to offer students who are in year 11 an opportunity to continue with their subjects into Year 12, however the viability of a class which falls to fewer than 5 students cannot be assured.

Students will select subjects based on their desired pathway and career. Ensuring that by the end of Year 12 they have met the required prerequisites for their chosen course of study and future.

Once course selection has been complete and parents will be required to attend a **Course Confirmation Interview** at the school. These interviews allow students to finalise their choices, ensure that their pathway is correct based on needs and interests and to discuss future directions. (Please note that students should select reserve subjects in case there is an irresolvable class or insufficient interest to offer the subject).

In discussion with the College, students may have the option of undertaking a subject through enrolment at Virtual Schools Victoria.

A VCE program at Box Hill Senior Secondary College will generally consist of 20 to 24 units taken over two to three years. **Year 11 students will select a minimum of 5 (five) and a maximum of six (6) VCE units each semester which may include an accelerated subject (if approved).**

Year 12 students will normally undertake five (5) sequences in their final year of schooling.

(Please note that any Sports Academy participation does not count towards these unit tallies)

Students can gain credit for any VCE studies that are satisfactorily completed at an approved VCE provider. This is usually a VCE Language Other Than English (LOTE) at community schools. Students who choose to include their external study within their program must study at an approved VCE provider. Approved providers may be the Victorian School of Languages (VSL) and community LOTE schools. Please include the details of this subject on your Course Selection form, along with the course you have selected for Box Hill Senior Secondary College.

CHANGING SUBJECTS AND SEQUENCES:

Depending on timetable options and available spaces in classes, changing from a Unit 1 study in Semester 1 to a different Unit 2 study in Semester 2 might be possible for students who realise that a particular subject does not suit their interests, strengths and aspirations. However, changes will only take place through application and attending a 'change in subject' interview with a Sub-School representative.

To qualify for the Victorian Certificate of Education, students must pass both units as a sequence in Units 3 and 4 to generate a successful completion.

Year 9 Program

The Year 9 Program enables students to participate in a number of student-led inquiry projects throughout the year based on the four General Capabilities of the Victorian Curriculum:

- Critical and Creative Thinking
- Ethical Capability
- Intercultural Capability
- Personal and Social Capability

These projects will be term based and link student learning to real world contexts.

Entrepreneurship

Through our partnership with 'Future Anything' students experience entrepreneurship workshops which sparks curiosity, a drive to collaborate with others and a passion for solving problems that matter to the school and local community.

Students co-design a 'mission' that they embark on; thus, empowering them to design solutions for contextually relevant school or local community issues. The final product will be an elevator pitch with a prototyped solution presented to a panel of peers, school leaders and community members.

Global Citizenship

Students have the opportunity to make a difference by creating awareness campaigns and/or engage with the community by addressing global issues such as social justice, human rights, poverty, environmental issues, and sustainability.

Students will collaborate in their project teams to research their issue, connect with organisations, create a campaign with a final celebration evening with families and the community to present their team projects.

Community Ambassadors

Students will develop their personal and social capability by participating in community projects led by senior students in their roles as Student Mentors. Collaborating with their Mentors, Year 9 students will participate in a series of practical workshops, they will design, and facilitate activities for the College and wider Communities, and will develop social awareness, interpersonal skills, and leadership capabilities.

With a focus on vocational pathways, our students will begin to consider their career aspirations, and by learning more about their community and what is available to them, they begin to develop confidence in setting goals for their own personal development.

Urban Project Week

This is a week-long collaborative project, designed to develop communication and leadership. While referring to literacy and numeracy skills developed throughout the year, students will be guided through a range of activities, including sight-seeing opportunities and research tasks.

Students will create a short film showcasing their urban experience based on a research task that focuses on the college values of 'Respect, Relationships, Resilience and Responsibility.'

English

In Year 9 English, students engage with a variety of texts for enjoyment. They interpret, create, evaluate, discuss, and perform a wide range of literary texts in which the primary purpose is aesthetic, as well as texts designed to inform and persuade. These include various types of media texts, including newspapers, film and digital texts, fiction, non-fiction, poetry, dramatic performances, and multimodal texts, with themes and issues involving levels of abstraction, higher order reasoning and intertextual references. Students develop a critical understanding of the contemporary media, and the differences between media texts. Students create a range of imaginative, informative, and persuasive types of texts including narratives, procedures, performances, reports, discussions, literary analyses, transformations of texts and reviews.

Mathematics

In Year 9, students will develop familiarity with a broader range mathematical concepts including measurement of three-dimensional shapes, statistical analysis, algebraic expressions and graphs, and financial mathematics. They will be engaging with a variety of hands-on and real-life application tasks to get contextual understanding of the concepts learnt during the year. A variety of assessment tasks such as assignments, projects, tests and exams will be used to assess student achievement throughout the year. The Year 9 mathematics program will lead the students to one of the three options in Year 10 which will be based on student's area of interest, strengths and future pathways.

Humanities

In Geography, students will investigate how people, through their choices and actions, are connected to places globally in a wide variety of ways, and how these connections help to make and change places and environments. In Civics and Citizenship, students will focus on the rights and responsibilities of citizens, how Australians can participate in their democracy and examine the principles and function of Australia's legal and political systems. In History, students will examine the origins of the Industrial Revolution, life in 19th century Australia, immigration and the lead up to federation in 1901. Students will also learn about the causes of World War One and Australia's involvement.

Science

In Year 9 students will be introduced to the world of science and scientific inquiry. The course will cover core topics in Chemistry, Biology, Physics, and Earth and Environmental Science. In Chemistry, students will explore how all matter is made of atoms and the interactions that occur between these atoms in chemical reactions. In Biology, students will learn about the transmission of diseases and how cells and body systems are impacted by pathogens. Students will investigate the energy transfers and transformations that occur in global systems and cycles. Practical reports, assignments, tests and presentations will be used to assess student knowledge and understanding throughout the subject.

Health & Physical Education

This subject empowers students to take proactive steps in enhancing their health, wellbeing, safety, and physical activity participation. Through the development of personal, social, and cognitive skills, students foster a strong personal identity, build meaningful relationships, and make informed choices. They acquire and apply movement skills in diverse contexts, engaging in regular movement-based learning experiences.

Additionally, students explore the influences and significance of health behaviours across various contexts, including personal, social, cultural, environmental, and global settings. By understanding these influences, students learn to navigate and adapt to different situations, promoting a holistic approach to health and wellbeing.

The course encourages students to critically analyse health information, develop strategies for improving health outcomes, and advocate for healthy practices within their communities. Through active participation and reflection, students build a foundation for lifelong health and wellbeing, preparing them to lead healthier, more informed lives.

Auslan

Students develop their communication skills into more abstract and nuanced dialogues. Students are introduced to and create a range of texts in Auslan and English. Students also explore the use and changes in technology, and their impacts on the Deaf Community. The unit also includes genuine opportunities to connect and communicate with members of the Deaf community using Auslan.

Year 10 Program

The Year 10 Pathway program extends students experiences from Year 9, building on the breadth of experience and supporting everyone in developing a pathway into the post compulsory years and beyond.

Students at Box Hill Senior Secondary will be invited to apply for acceleration into our Early Start VCE program. This allows Year 10 students the ability to select a study from the list of Unit 1 and 2 subjects offered that compliments their chosen pathway.

The advantage of the Early Start VCE / VET program is that it prepares students to gain a 'flying start' on their Senior School Certificate and allows students to maximise their ATAR score by completing an additional subject. Students interested in Early Start VCE / VET should speak with the Sub-School team. Academic performance in Year 9 plays an important part in determining a student's readiness for an Early Start program. BHSSC uses the following measures to determine individual student suitability:

- o **Current Year 9 students** have a consistent and average GPA of 3.0 and above,
- o **New and future Year 10 students** have reporting or a reference from their current school as evidence of aptitude and learning ability to meet the demands of an early start program.

All students in Year 10 are required to undertake English (or EAL) and a Mathematics subject for the duration of the year. Beyond these core classes, all other subjects and programs are elective and choice-based.

All Year 10 students are required to be enrolled in six (6) subjects per semester, inclusive of English and Maths.

English

In Year 10 English, students evaluate how text structures can be used in innovative ways by different authors. They explain how the choice of language features, images and vocabulary contributes to the development of individual style. They develop and justify their own interpretations of texts and they evaluate other interpretations, analysing the evidence used to support them. Students develop their own style by experimenting with language features, stylistic devices, text structures and images. They create a wide range of texts to articulate complex ideas and propose solutions to issues impacting society. They demonstrate understanding of grammar, vary vocabulary choices for impact, and accurately use spelling and punctuation when creating and editing texts.

Mathematics

In Year 10, students extend their use of mathematical models to a wide range of familiar and unfamiliar contexts. The students will be offered three options for Year 10 Mathematics based on their interest, areas of strength and future pathways. It is important that students consider their academic results in Year 9, their career pathway goals and course entry requirements, and teacher recommendations when choosing the most appropriate Year 10 pathway.

Advanced Mathematics:

Year 10 Advanced Maths is offered to prepare students for a pathway into Mathematical Methods and beyond. The skills and knowledge obtained in Advanced Math will extend students beyond the Victorian Curriculum and provide them with a broader understanding of Mathematics. Students should seek teacher recommendations prior to selecting this subject.

Core Mathematics:

Core Mathematics will focus on gaining skills and knowledge outlined in the Year 10 Victorian Curriculum content and achievement standards. Core Mathematics will lead into the VCE General Mathematics Units 1&2.

Foundation Mathematics:

Foundation Mathematics focuses on key fundamental skills and the use of Mathematics in practical contexts. The skills and knowledge gained will be beneficial for the students keen to seek pathway of VCE - Vocational Major or VCE Foundation Mathematics Unit 1&2. Whilst the selection of a Mathematics subject beyond Year 10 is always encouraged, this course is best suited to students who are also certain to not select Maths in their academic programs in the future.

Year 9 &10 Elective Options

Arts

ART MAKING

The course will focus on developing individual potential as an art maker, focusing on painting, drawing, 3D sculptures, digital art and photography. Using inspiration from different cultures and looking at different visual styles past and present, students will be taken through a range of activities that will spark their imagination and creativity. This elective area will be excellent preparation for VCE Art Creative Practice and VCE Art Making & Exhibiting. Every student will create their own unique artworks in their visual art journal and finished artwork that can be taken home. Students who select this elective at Year 10 may choose to follow this into VCE in the subject areas of VCE Art Creative Practice, VCE Art Making & Exhibiting and Media.

FASHION ILLUSTRATION

The Fashion Illustration course is designed to build students fashion drawing and illustration skills, using various rendering mediums. Students will learn how to find inspiration and build their design ideas. Students will learn techniques for illustrating design details to improve their fashion illustration skills and how to professionally layout a portfolio, using techniques to enhance the design's impact, communicate a design theme or story and create a flow through:

- Creating Fashion Stories.
- Colour Schemes.
- Using fashion figure templates/coqui.
- Understanding the fashion figure proportions. Using various rendering techniques and materials.
- Mixed media techniques to create visually stunning presentations using watercolour pencils, gouache and watercolour paints, pantone marker pens, graphite and Photoshop.
- Creating different illustration styles.

Students who select this elective at Year 10 may choose to follow this into VCE in the subject areas of Studio Art, Fine Art, Media and Visual Communication and Design.

CONTEMPORARY PAINTING AND DRAWING

The course will focus on some fun and exciting ways to paint and draw using inspiration from popular culture, looking at different visual styles present in fantasy, movies and concept art. Students will be taken through a range of activities that will spark your imagination. Every student will create their own unique artworks in their visual diaries and on a canvas, both of which can be taken home.

Students who select this elective at Year 10 may choose to follow this into VCE in the subject areas of Studio Art, Fine Art, Media and Visual Communication and Design.

STREET ART GRAFFITI

Students will participate in an excursion to Melbourne's most famous street Art precincts and a professional street art/ stencil demonstration. They will experience a variety of hands-on classes and workshops with a focus on having fun while learning new skills in stencil art. Every student will create their own re-useable stencils and artwork on a canvas, which can be taken home.

Students who select this elective at Year 10 may choose to follow this into VCE in the subject areas of VCE Art Creative Practice, VCE Art Making & Exhibiting and Media.

PHOTOGRAPHY

In this program students develop photographic skills, processes and will learn the operation and function of a digital camera. Students will produce a folio of photographs which will include planning, documenting processes in the form of contact sheets and annotations and refining artworks. Students learn digital manipulation skills using Adobe Photoshop and study varies photographic styles, such as portraiture, street, documentary, and movement. Students will analyse and evaluate photography artists and their practice. Students will develop their skills and knowledge of art elements and principles in their own work practice.

SONG MAKING AND SOUND PRODUCTION

Upon completion of this Unit, students in Song Making will be led through online music production, through interactive participation in practical lessons. Students will be guided to learn the elements of song writing and sound production. Students will develop an understanding of the available technologies to allow creativity and develop their expertise in this area. Students will be introduced to online systems and programs, such as Musecore and Soundtrap.

MUSIC MAKING AND APPRECIATION

Throughout this course, students study the influences of a range of musical styles, traditions and genres. Students are exposed to the historical influences upon modern music, and elect areas of focus to study, based on their experience and interests.

The aims of the course are to increase student's understanding of basic music theory and aural skills, while engaging in the basic structures of music making and practical ability with an instrument; including basic music theory and aural skills; and the ability to describe pieces of music using appropriate musical language.

Students build their skills in music making and performance, through the application and trial of a range of instruments. Students also build an appreciation and understanding of different genres of music by studying a range of artists and composers and researching the diverse applications of music in media and pop culture, (including song writing, movie soundtracks, sound effects, and social media applications).

Students undertaking this subject may enrol in formal instrumental music lessons.

MEDIA STUDIES

Have you ever wanted to learn how to create your own media content? Wondered how the media industry works? Are you interested in social media? Then Media is the class for you!

In Media, students will have the opportunity to examine the media in both historical and contemporary contexts while developing skills in media design and production in a range of media forms. Students discover, experiment and problem-solve, developing their perceptions about visual images, sound, and text. They will practise and experiment with a range of media forms from TV, media, publication, and photography.

Students will have the opportunity to learn how to deconstruct media forms to further develop their own skills and be able to understand ways that creators use codes and conventions to impact an audience.

Media is for students who want to incorporate their own interests with school outcomes, and to produce something they are proud of. Students who select this elective at Year 10 may choose to follow this into VCE in Media, Studio Art, Visual Communication Design and Fine Art studies.

PRINT MEDIA

Students develop print and publishing skills, processes and will learn how to create, engage and develop print media. Students will produce a folio of print pieces which will include planning, documenting processes in the form of mock-ups, typography, and refined media works.

Students learn digital manipulation skills using Adobe Photoshop and study various print formats including magazines, e-zines, posters, and advertisements. Students will understand how audiences engage with print media through analysing and evaluating print layouts, designs, and their practise. Students will develop their skills and knowledge of art elements and principles in their own work practice. Students who select this elective at Year 10 may choose to follow this into VCE in Media, Studio Art, Visual Communication Design and Fine Art studies.

English

CLASSIC LITERATURE & MODERN ADAPTATIONS

(Please note: electives in the English learning area are selected in addition to core English)

This subject offers a different look at literature, through studying classic tales and their modernised adaptations. This elective will focus on the study of classic Brothers Grimm fairy tales and contrasting the morals and messages within those stories to the modern-day adaptations. The second half of this elective will look at classic, revered works like Shakespeare and Jane Austen, and the modernised films. Students will discuss how messages, themes and ideas shift when updating a text for a modern-day audience, while understanding that some stories and characters are timeless.

Humanities

HISTORY: MODERN HISTORY - FORGING A NATION

Students study the history of the modern world and Australia from 1914 to 1945, with an emphasis on Australia in its global context. The Twentieth Century became a critical period in Australia's social, cultural, economic and political development. The transformation of the modern world during a time of political turmoil, global conflict and international cooperation provides a necessary context for understanding Australia's development, its place within the Asia-Pacific region, and its global standing.

Students study World War I, the 'Roaring Twenties', the Great Depression, World War II, and the foundations of modern political ideologies. Students investigate global, national, and local differences in human wellbeing between places. They examine the different concepts and measures of human wellbeing and spatial differences in wellbeing and evaluate the differences from a variety of perspectives. They explore programs designed to reduce the gap between differences in wellbeing in the modern world.

GEOGRAPHY

Do you want to know more about the world around us? Geographers will explore both the physical properties of Earth's surface and the human societies spread across it. We will examine how human culture interacts with the natural environment and the way that locations and places can have an impact on people. As we develop

our knowledge, we will evaluate alternative views on geographical challenges and alternative strategies to address these challenges. Students will link this knowledge with Indigenous knowledge and management techniques.

The study of Geography will draw on students' curiosity about the diversity of the world's places and their peoples, cultures and environments. It will enable students to appreciate the complexity of our world and the diversity of its environments, economies and cultures.

MAD FOR BUSINESS

Students will learn about how to succeed in business. This elective focuses on you the individual, and the skills required of an entrepreneur. Learn about the importance of goal setting and motivational theories to inspire you to flourish. You will also be given the opportunity to develop and run your own business idea.

MONEY MONEY MONEY

Students study economics at a national and global scale. We investigate how businesses influence consumers and the impact of innovation and competition in the marketplace, as well as analyse the way the work environment is changing in contemporary Australia. We consider the implications of these changes for current and future work environments and rights within the workplace.

CHINESE (FIRST LANGUAGE)

The Chinese (First Language) subject is designed for students with a Chinese background who come from a Chinese-speaking country. The course prepares students for VCE Chinese and involves reading, writing, listening and speaking tasks. Students will learn to write evaluative and persuasive essays, study novels and movies and discuss current issues in Chinese. Students will be communicating and writing in Chinese.

Health & Physical Education

SPORT SCIENCE

The Year 10 Sport Science elective offers an in-depth exploration of the principles of fitness, strength, and conditioning to enhance sports performance. Students engage in data and activity analysis, fitness testing, and the design of tailored training programs.

In this course, students investigate various methods of collecting and analysing data to understand athletic performance better. They perform fitness tests to assess different components of fitness, including strength, endurance, flexibility, and speed. Using the results, students learn to design and implement training programs that optimise performance for specific sports.

The course includes practical sessions where students apply strength and conditioning techniques, monitor progress, and adjust training plans based on data analysis. Emphasis is placed on the scientific principles underpinning fitness and conditioning strategies, ensuring that students understand the theory behind their practical activities.

Assessment involves data collection and analysis projects, fitness testing, training program design, and practical performance evaluations. This elective is ideal for students interested in VCE Physical Education and in sports science, coaching, physiotherapy, and related fields. Regular participation in practical activities is essential for success in this course.

HUMAN MOVEMENT

The Year 10 elective "Human Movement" provides students with a comprehensive understanding of functional anatomy and effective movement in both sports and everyday life.

In this course, students study anatomical movements, muscle actions, and how the body moves. They learn to analyse effective movement by connecting fundamental movement skills in sport to everyday activities. The course emphasises the importance of strength and conditioning to reduce injury risk and enhance performance.

Through practical and theoretical sessions, students explore the principles of movement and apply them to various contexts. They investigate how proper technique and conditioning can improve performance and prevent injuries. This course fosters an appreciation of how the body's mechanics impact both sporting and lifestyle activities.

Assessment includes practical activities, movement analysis projects, and evaluations of strength and conditioning programs. This elective is ideal for students interested in VCE Physical Education and in sports science, physiotherapy, and related fields. Regular participation in practical activities is essential for success in this course.

SKILL ACQUISITION & COACHING

The "Skill Acquisition and Coaching" elective equips students with a comprehensive understanding of how skills are learned and refined, and how effective coaching enhances performance. Students explore skill acquisition principles, learning about different types of skills and the factors influencing their development. The course covers information processing, highlighting how cognitive processes translate into physical actions.

Students examine the stages of learning, from novice to expert, understanding the progression and characteristics of each stage. Emphasis is placed on the importance of practice and feedback in skill development, exploring various methods to optimize performance. Coaching styles and techniques are studied to understand how coaches effectively develop athletes' skills and confidence.

The game sense approach to coaching teaches students to foster tactical awareness and decision-making. Assessment includes theoretical exams, practical demonstrations, coaching assignments, and project work. By the end, students are well-prepared for further studies or careers in sports science, physical education, and coaching. Regular participation in practical activities is essential for success.

CERTIFICATE II IN OUTDOOR RECREATION

(Please note: this is a VET course and will require a full year commitment to complete)

The Certificate II in Outdoor Recreation offers students the opportunity to engage in a variety of outdoor activities while developing essential skills for personal enjoyment or a career in the outdoor recreation industry.

This program includes core units applicable to all outdoor recreation settings, with electives tailored to suit the specific environment and resources available. Students experience high levels of engagement through adventure activity excursions and camps, enhancing their learning through real-world applications.

Key learning areas include conducting outdoor recreation sessions, providing first aid and emergency response, minimising environmental impact, and participating in adventure activities. These fundamental competencies form a strong foundation for a lifetime of outdoor adventure or employment in the industry.

Graduates of this qualification are equipped to assist in delivering outdoor recreation activities, making them valuable assets in the outdoor recreation sector. This course also prepares students for further studies in vocational education and training or higher education, especially for those aiming for leadership roles in outdoor recreation.

Technology

ELECTRONICS & ROBOTICS

Electronics and robotics is a one semester course that is divided into two terms covering different aspects of electronics. During the first term students are introduced to the basic concepts of electricity and electronics whilst discovering how components work through practical applications. In the second term students are given an Arduino microcontroller which they are taught to program and connect. Using the skills from earlier units, students can complete a project using their microcontrollers as a final project.

This first term introduces students to the basic concepts of electricity and electronic circuitry. Students learn about the following concepts;

- Atomic theory
- Static, direct current and alternating current electricity
- Voltage, current and resistance
- Ohms law
- Series and parallel circuits
- Components
- Electronic drawings and schematics
- Etching of circuit boards

There is a heavy emphasis on practical work in the elective subject and students must always observe safe practices.

During the second term students will focus on the following;

- Connecting the Arduino to a computer
- Basic outputs
- Programming techniques including
- Integers
- Loops
- Functions
- Digital/analog outputs
- Connecting the Arduino to real life applications

Students will be assessed on their ability to code and the construction of the final project.

FOOD CULTURE – MULTICULTURAL MELBOURNE

Let's explore Multicultural Melbourne. We are fortunate to live in a city with a thriving food culture. Australian cuisine has evolved to be a complex hybrid of various cultures as migrants have come to Australia sharing their knowledge, ingredients and food preparation practices. Students explore what really is Australian cuisine – beginning with native Indigenous flavours before extending to the small pockets of food culture in Melbourne. Italian (Lygon St), Greek (Lonsdale St), Vietnamese (Victoria St) or Chinese (Little Bourke St) and everything in between. Let's go on a food expedition exploring food cultures and festivities and experiencing a whole lot of delicious foods and flavours.

BAKERY BASICS

Who doesn't love a classic pie, donut, or sneaky sweet treat from the bakery? If you have a sweet tooth or love to bake/eat then this unit is for you! Students will explore the elements of baking and patisserie to produce a range of mouth-watering, delicious morsels. They will develop their skills from a range of masterclasses and push the boundaries to create not only some of Australia's favourite bakery staples but to push the boundaries with some original recipe creations.

FOOD STUDIES

In Food Studies, students develop practical food skills that related to a variety of preparation and cooking methods that will allow them to cook a range of dishes. Students develop knowledge of and apply kitchen safety and hygienic preparation of food. Students learn about basic nutrition, catering to dietary requirements and maintaining a balanced diet in alignment with the Australian Guide to Healthy Eating. Students develop skills in planning a meal for a specific purpose and carrying out the cook.

INTRODUCTION TO FOOD AND THE KITCHEN

(Please note: this subject is designed for EAL students)

This elective is for students who are developing their understanding of food, cooking, kitchen equipment, safety and hygiene. Students develop knowledge of a range of ingredients for use in both sweet and savoury cooking; and of kitchen equipment such as measuring cups and spoons, utensils and pans. Students learn methods such as mixing, whisking, folding, baking, steaming, boiling and frying. Students will begin by cooking simple and practical dishes and build on these knowledge and skills throughout the semester.

METALS

METALS 1

Metalwork/engineering is popular with students interested in pursuing a career or interest in automotive, plumbing, electrical and general engineering.

In this unit, students become familiar with a wide variety of hand tools, machinery, metals and processes. They complete the making of a range of set products, such as a bevel square, plumb bob and a toolbox saw.

At the end of the unit, students will be able to develop a design brief, and select appropriate tools, equipment and materials to manufacture a range of products in a safe and correct manner.

This elective area will be excellent preparation for VCE Product Design & Technology.

Major topics covered: Workshop safety; Marking out; Design; Correct use of hand tools; Machine tools – Lathe & Milling; Precision measurement; Finishing techniques

METALS 2

Prerequisite: Metals 1

This unit takes the skills developed in Metals 1 to the next level.

This elective is recommended to students wishing to study Engineering, Plumbing, Electrical and Automotive.

Students complete a range of set products including a drill gauge, soft face hammer, G-Clamp and the making of negotiated products. Applying their knowledge and skills of workshop safety, marking out, design, correct use of hand and machine tools, precision measurement, and finishing techniques. Students will develop a

design brief select appropriate tools, equipment and materials to manufacture a product in a safe and correct manner. Students also use a range of fabrication and general sheet metal equipment.

This elective area will be excellent preparation for VCE Product Design & Technology.

Major topics covered: Workshop safety; Marking out; Design; Correct use of hand tools; Machine tools – Lathework & Milling; Precision measurement; Fabrication techniques and general sheetmetal work.

WOOD & TECHNICAL DRAWING

Woodwork & Technical Drawing 1

Woodwork and Technical Drawing is an elective for students who are interested in a career in Carpentry, Cabinet making or Product Design.

In this unit students by becoming familiar with several three-dimensional drawing methods that they then use in creating design solutions. As well as a wide range of hand tools, machinery and joinery techniques.

Students use the 'product design process' to design and construct wooden products in response to a 'design brief'. They learn to use a range of hand and power tools, complex systems and finishing methods safely and competently during the construction or production stage of the program and evaluate both their finished products and processes.

This elective leads into VCE Product Design & Technology and VET Building & Construction.

Major topics covered: The product design process; Workshop safety; How to select and use woodworking tools correctly; Suitable methods of joining timber; Finishing techniques; Three-dimensional drawing methods (Perspective, Paralane drawing systems, Orthogonal drawing, Freehand sketching).

Woodwork & Technical Drawing 2

Prerequisite: Woodwork & Technical Drawing 1

This unit takes the skills developed in Woodwork and Technical Drawing 1 to the next level.

This elective is recommended to students wishing to further build their skills to study Product Design & Technology, Carpentry or Cabinet Making.

Students further developing their competency in three-dimensional drawing methods. They demonstrate these skills through the construction of negotiated products. They design and produce more complex solutions looking at more advanced production and joinery techniques.

This elective will be excellent preparation into VCE Product Design & Technology and VET Building & Construction.

Major topics covered: The product design process; Workshop safety; Selection and correct use of woodworking tools; Advanced methods of timber joinery; Finishing techniques; Three-dimensional drawing methods (CAD modelling, Paralane drawing systems, Sectioning and dimensioning, Freehand sketching).

Science

PHYSICS

This elective is highly recommended for students interested in studying VCE Physics.

In this elective, students experiment with electric circuits and explore concepts used to model the nature of electricity. Use the laws of physics to describe and predict the motion of objects. Take a detailed look at forces, including gravity.

BIOLOGY

This elective is highly recommended for students interested in studying VCE Biology.

This subject allows students to explore how DNA and genes are involved in heritable characteristics being passed from one generation to the next. The importance of proteins in living organisms is also investigated and looked at the steps involved in protein formation from the original DNA blueprint. Students consider the genetic mechanism of changes in populations over time. Evolution is examined through first considering adaptations. The notion of evolution through natural selection is covered through practical work and sample case studies.

CHEMISTRY

This elective is highly recommended for students interested in studying VCE Chemistry.

Year 10 Chemistry begins with the key understanding that matter is made up of atoms that are in turn composed of protons, neutrons and electrons. Students will use this understanding to explain and investigate chemical phenomena such as chemical bonding and various chemical reactions. Students will develop their science skills through regular practical experiments and research tasks into key chemical reactions and phenomena. Student coursework along with tests and assignments will be used to evaluate academic performance in this subject.

ENVIRONMENTAL SCIENCE

This elective is highly recommended for students interested in studying VCE Environmental Science.

Environmental Science is the study of the interactions between physical, chemical and biological components of the Earth's natural environment. These include the atmosphere, components of the Earth's Crust, Ecosystems, and Pollution. Environmental Science also closely examines the human impact on the environment. This subject explores how past and current human actions impact future generations. Environmental Science is a multidisciplinary approach that studies how nature and other stakeholders impact the Earth.

GENERAL SCIENCE

This elective is highly recommended for students not planning to do a science subject in VCE or doing VM. It is recommended for students doing another science elective to not enrol in this elective as there will be overlaps in course content.

This is a general science elective that involves biology, chemistry, physics, and space and earth sciences.

- Learn about how and why living things are classified. Investigate the relationships between living and non-living things, and the flow of energy and matter in ecosystems.

- Explore the Periodic Table, the role of energy and combustion. How do atoms rearrange?
- What is the Universe? Examine theories of how it evolved, and how it might change in the future.
- How does the theory of plate tectonics explain global patterns of geological activity and continental drift?
- Consider the earth as a global system. Examine cycles, climate patterns and catastrophic events.

FORENSIC SCIENCE

(Note: this subject is a Year 9 only elective)

Through application and experiments, students learn how forensic scientists apply key Science knowledge and skills to investigate various types of evidence at a crime scene. This subject involves collecting evidence through fingerprinting, fibre and hair analysis and samples. Forensic Science also offers forensic psychology and how human and eyewitness memory can be inaccurate at times.

SPORT PSYCHOLOGY

This elective focuses on integrating sport science and psychology principles to enhance both athletic performance and everyday life skills. The course emphasizes mindset techniques and the power of thought in improving performance, offering students valuable tools for sporting, personal and academic success.

Students will delve into motivation and confidence-building strategies, mindfulness techniques, and self-reflection practices. They will learn about the critical role of sleep in achieving optimal performance. The course also covers the impact of stress, performance anxiety, and arousal on sports performance, providing strategies to manage these factors effectively.

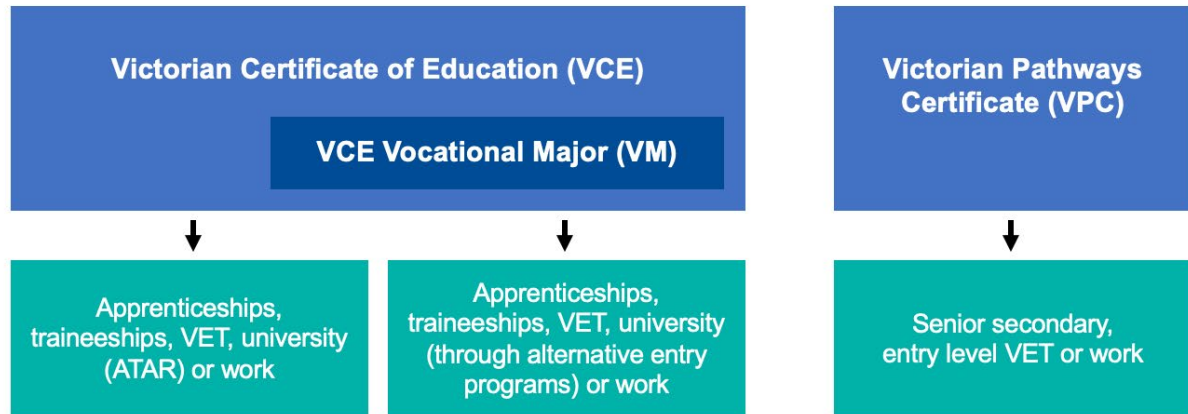
Exploring goal setting and mental imagery, students will understand how these techniques can enhance their athletic and personal achievements. Through experiments and practical activities, students will apply sports psychology principles and develop key science skills, reinforcing their understanding through real-world applications.

This elective not only prepares students for careers in sports science and psychology but also equips them with life skills such as stress management, goal setting, and self-motivation, which are essential for success in any field.

Senior School Certificates

Choosing the correct VCE certification pathway is individualised and dependent on the aspirations of the individual student. At Box Hill Senior Secondary we offer a variety of options for students dependent on their chosen program, pathway, and career interests. The diagram below highlights ways in which students can gain their Victorian Certificate of Education.

Certificate options



Victorian Certificate of Education (VCE)

VCE is usually completed over two years. At Box Hill Senior Secondary College students must ensure that they meet the following conditions to be eligible for the Victorian Certificate of Education

- In **Year 11** you will undertake six (6) Units in Semester 1 and six (6) Units in Semester 2 making a total of twelve (12) units across the year.
 - In **Year 11**, you must undertake at least two (2) Units from the English group (**English; EAL; Literature**)
- In **Year 12** you will undertake five (5) Unit 3 and 4 sequences making a total of ten (10) units.
 - In **Year 12** one of the sequences of units **MUST** be from the English group (**English; EAL; Literature**).

The Victorian Certificate of Education requires a student to have satisfactorily met at least 16 units which must include:

- Three (3) units of an English subject from the English Group (English, English Language, Literature and EAL) including the satisfactory completion of the Unit 3 and 4 sequences.
- At least three (3) sequences of Units 3 & 4 studies in addition to the Unit 3 & 4 sequence from the English group, which may include any number of English sequences once the English requirement has been met.

The following subjects are offered by the college. For detailed elaborations on each study, the types of assessment and content covered, please refer to the relevant learning area leader and the VCAA Study Design specific to that VCE study:

<https://www.vcaa.vic.edu.au/curriculum/vce/vce-study-designs/Pages/vce-study-designs.aspx>

Arts

ART MAKING & EXHIBITING

VCE Art Making and Exhibiting introduces students to the methods used to make artworks and how artworks are presented and exhibited.

Unit 1 Explore, Expand, and Investigate

Students use inquiry learning to explore, develop and refine the use of materials, techniques and processes and to develop their knowledge and understanding of the ways artworks are made. They learn how art elements and art principles are used to create aesthetic qualities in artworks and how ideas are communicated through the use of visual language. Their knowledge and skills evolve through the experience of making and presenting their own artworks and through the researching, viewing and analysis of artworks by other artists.

Unit 2 Understand, Develop and Resolve.

Students will understand how to work independently and collaboratively to develop ideas and an understanding of the sources that inform and influence art making. They will investigate the practices of artists from different periods of time and cultures and their use of materials, techniques and processes, and how these contribute to the making of their Artworks. Students will develop, refine and resolve their personal themes, aesthetic qualities and style.

Unit 3 Collect, Extend and Connect

Students will collect inspiration, influences and images develop an understanding of the sources that inform their art making. Their knowledge and skills will evolve through the experience of making and presenting their own artworks and through the viewing and analysis of artworks by other artists. A strong focus on the way we respond to artworks in galleries, museums, other exhibition spaces and site-specific spaces is integral to study and research in VCE Art Making and Exhibiting.

Unit 4 Consolidate, Present and Conserve

Students will refine and resolve their artworks by further developing their knowledge and skills. They will understand how exhibitions are planned and by galleries, museums, other exhibition spaces and produced site-specific spaces and how artworks are curated and displayed for audiences. Students will understand the methods used and considerations involved in the preparation, presentation, and conservation of artworks.

ART CREATIVE PRACTICE

In the study of VCE Art Creative Practice, research and investigation inform art making. Through the study of artworks, the practices of artists and their role in society, students develop their individual art practice, and communicate ideas and meaning using a range of materials, techniques and processes.

Unit 1

Inquiry learning- Students use inquiry learning as an active process of exploration and experimentation where the end result is not fixed or known. Through making and responding, students acquire experimental and analytical skills to develop their art practice.

Experiential learning – will guide the students through a series of experiences in Making and Responding to art. Student reflect on their experiences and conceptualise the ideas evoked by their experiences. They will experiment with and expand upon these ideas in their art practice.

Unit 2

Inquiry learning- Students use inquiry learning to understand how the practices of artists and artworks reflect the values, beliefs and traditions of their own and other cultures. Students will develop personal ideas and expression through Making and Responding in creative art practice and collaboration. Students will discuss, reflect and evaluate their own work and the work of others.

Unit 3

Project-based learning- Students will focus on specific projects that engages the students in problem solving, decision- making and reflection using their art practice. they will develop personal ideas and expression through Making and Responding in art practice. This will include research and investigation of Artists and artworks, developing ideas and issues, exploration and presentation of artworks. They will employ practical skills in art making and develop conceptual understanding to inform aesthetic awareness and creative art practice. Students will develop creative and critical thinking skills in individual responses to artworks and art practice.

Unit 4

Project-based learning- Students will continue their specific projects through creative art practice, documentation, reflection, evaluation and critique. They will refine and resolve a body of work for presentation. Inquiry learning- Students will continue their inquiry learning of artists and understand how the practices of artists and artworks reflect the values, beliefs and traditions of their own and other cultures using the support of the Interpretive lenses.

MEDIA

Unit 1: Media representations

Students are introduced to the concept of audience. They consider different readings of media products and how meaning is suggested through the complex relationships between content creators and producers, media forms and audiences. They consider how audiences engage with the media to construct and negotiate understandings of the world and themselves through their participation in the consumption, reception, production, curation, and distribution of media products. Students also gain an understanding of audiences as producers of media products, who create and share their own representations. Notions of identity and self are implicit in the ways that audiences select, create, share, engage with and read media products. Through the examination of a range of media forms and products, students consider how representations of self and identity are constructed, distributed, engaged with, consumed, and read.

Unit 2: Narrative across media forms

In this unit, students further develop an understanding of the concept of narrative in media products and forms in different contexts. Narratives in both traditional and newer forms include film, television, digital streamed productions, audio news, print, photography, games, and interactive digital forms. Students analyse the influence of developments in media technologies on individuals and society; design, production, and distribution of narratives in the media; and audience engagement, consumption, and reception. Students undertake production activities to design and create narratives that demonstrate an awareness of the structures and media codes and conventions appropriate to corresponding media forms.

Unit 3: Media narratives, contexts, and pre-production

In this unit, students explore stories that circulate in society through a close analysis of a media narrative. They examine one fictional or non-fictional narrative in the form of film and/or television and/or radio and/or audio product (that may be broadcast or streamed) and/or photographic products.

Students investigate aspects of the media form in which they will make their productions, developing knowledge of narrative, genre, style, media codes and conventions and aspects of the works of media practitioners relevant to their proposed production. These investigations develop the student's style as a media creator and inform the development of their individual media product. Students also experiment with media technologies and media production processes to inform and document the plan for a media production.

Students use industry specific planning, using both written and visual documentation, to complete a preproduction plan. The plan incorporates a clear fictional, non-fictional or fictional/non-fictional narrative for a specified audience in a selected media form as outlined below. Students consider the relevant media codes and conventions of the selected media form.

Unit 4: Media production and issues of agency and control in media

In this unit students focus on the production and post-production stages of the media production process, bringing the pre-production plans created in Unit 3 to their realisation. Students refine their media production in response to feedback and through personal reflection, documenting the iterations of their production as they work towards completion.

Students explore the relationship between the media and audiences, focusing on the opportunities and challenges afforded by current developments in the media industry. They consider the nature of communication between the media and audiences, explore the capacity of the media to be used by governments, institutions, and audiences, and analyse the role of the Australian government in regulating the media.

Students move from production into post-production, where the manipulation, arrangement or layering of the ideas and material generated in pre-production and production leads to the realisation of their preproduction plans.

MUSIC PERFORMANCE (CONTEMPORARY)

Unit 1

This unit focuses on developing skills in music performance in solo and group contexts, studying performance and performing, and developing skills in aural comprehension and organisation of sound. Students present solo and ensemble performances, demonstrate technical work and perform previously unseen music. Students also develop their listening, aural, theoretical and analytical musicianship skills.

Unit 2

In this unit, students focus on the way music can be used to create an intended effect. By performing, analysing and responding to music works/examples that create different effects, students explore and develop their understanding of the possibilities of how effect can be created. Through creating their own music, they reflect this exploration and understanding.

Students prepare and perform ensemble and/or solo musical works to develop technical control, expression and stylistic understanding using their chosen instrument/sound source. They should perform at least one work to convey a specified effect and demonstrate this in performance.

They create (arrange, compose or improvise) short music exercises that reflect their understanding of the organisation of music and the processes they have studied.

As they analyse and respond to a wide range of music, they become familiar with the ways music creators treat elements and concepts of music and use compositional devices to create works that communicate their ideas. They continue to develop their understanding of common musical language concepts by identifying, recreating and notating these concepts.

Unit 3

In this unit students begin developing the program they will present in Unit 4. Students should refer to the examination specifications to make sure that the works selected allow them to best meet the requirements and conditions of this task. They use music analysis skills to refine strategies for developing their performances.

Students analyse interpretation in a wide range of recorded music, responding to and analysing music elements, concepts, compositional devices and music language. Students also learn how to recognise and recreate music language concepts such as scales, melodies, chords, harmony and rhythmic materials that relate to contemporary music.

Unit 4

Students continue to work towards building a performance program they will present at their end-of-year examination in line with their Statement of Intent. The program will contain at least one performance that is a reimagined version of an existing work and an original work created by an Australian artist since 1990.

Students continue to study the work of other performers and their approaches to interpretation and personal voice in performing music works. They refine selected strategies to optimise their own approach to performance.

Students further develop strategies to address the technical, expressive and stylistic challenges relevant to works they are preparing for performance.

Students listen and respond to a further range of recorded music by a variety of performers in contemporary styles. They continue to study music language concepts that relate to contemporary music.

English

ENGLISH (INCLUDING EAL)

Unit 1

Reading and exploring texts – Students engage in reading and viewing texts with a focus on personal connections with the texts. They contemplate the ways that a text can present and reflect human experiences. Students will develop and strengthen inferential reading and viewing skills, and explore how vocabulary, text structures and language features create story and meaning. Students will plan and develop personal and analytical writing through reflection, editing and feedback.

Crafting texts - Students apply, extend, and challenge their understanding and use of texts to argue, express, reflect, and explain through a growing awareness of situated contexts, stated purposes and audiences. Students read and engage imaginatively and critically with mentor texts that can include short stories, speeches, monologues, essays, podcasts, poetry/songs, feature articles, memoir, and biography. They craft their own texts and can articulate their writing processes through a reflective commentary.

Unit 2

Reading and exploring texts – Students read or view a text, engaging with the ideas, concerns and tensions, and recognise ways vocabulary, text structures, language features and conventions of text work together to create meaning. They examine the ways readers understand text considering its historical context, and social and cultural values. They also explore the text through the prism of their own cultural knowledge, experiences and understanding of the world and extend their observations into analytical and abstract explorations.

Exploring argument – Students consider the way arguments are developed and delivered in many forms of media. Through the prism of a contemporary and substantial local and/or national issue, students read, view

and listen to a range of texts that attempt to position an intended audience. Students analyse persuasive texts through formal, analytical writing and construct a point of view text for oral presentation.

Unit 3

Reading and responding to texts- Students apply reading and viewing strategies to critically engage with a text, considering its dynamics and complexities. They analyse the ways authors construct meaning and are provided with opportunities to understand and explore the context and values of a text and recognise how these elements influence the way a text is read and understood. Students write analytically about a text to provide opportunities to further develop skills to engage with and challenge ideas, to refine the application of appropriate metalanguage, to integrate evidence from a text to support key points.

Creating texts - Students read and engage imaginatively and critically with mentor texts. Through close reading, students expand their understanding of the diverse ways that vocabulary, text structures, language features, conventions and ideas can interweave to create compelling texts. They further consider mentor texts through their understanding of the ways that purpose, context, and specific audiences influence and shape writing. Students form their own creative piece, drawing inspiration from mentor texts.

Unit 4

Reading and responding to texts - Students apply reading and viewing strategies to engage with a text to deconstruct ways authors create meaning in a text. They engage with the dynamics of a text and explore the ideas and values presented in a text. They also recognise and explain the ways the context, and values can affect a reader and how these values are presented and interpreted. Students write analytically about a text to provide opportunities to further develop skills to engage with and challenge ideas, to refine their application of appropriate metalanguage, to integrate evidence from a text to support key points.

Analysing argument- Students analyse the use of argument, language, and visuals in texts that debate a contemporary and significant national or international issue. Students read, view and listen to a variety of texts from the media and develop their understanding of the ways in which arguments and language position an intended audience in relation to a selected issue. Students plan and develop written analyses in response to their explorations. Students also apply their understanding of the use of argument and language to create a point of view text for oral presentation. Students monitor and evaluate arguments on a topic of their choice, and then plan and develop their own point of view text on that topic. They present their points of view as a discussion, dialogue, debate, or in a presentation.

LITERATURE

Unit 1

Reading Practices: 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 their own and others' interpretations of text. Students closely examine the literary forms, features and language of texts. They begin to identify and explore textual details, including language and features, to develop a close analysis response to a text.

Exploration of Literary Movements and Genres: Students explore conventions common to a selected movement or genre, and engage with the ideas, concerns and representations from at least one complete text alongside multiple samples of other texts considered characteristic of the selected movement or genre.

Unit 2

Voices of Country: In this area of study students explore the voices, perspectives and knowledge of Aboriginal and Torres Strait Islander authors and creators. They consider the interconnectedness of place, culture and

identity through the experiences, texts and voices of Aboriginal and Torres Strait Islander peoples, including connections to Country, the impact of colonisation and its ongoing consequences, and issues of reconciliation and reclamation.

Students examine representations of culture and identity in Aboriginal and Torres Strait Islander peoples' texts and the ways in which these texts present voices and perspectives that explore and challenge assumptions and stereotypes arising from colonisation.

Students acknowledge and reflect on a range of Australian views and values (including their own) through texts. Within that exploration, students consider stories about the Australian landscape and culture.

The Text in its Context: Students focus on the text and its historical, social and cultural context. Students reflect on representations of a specific time period and/or culture within a text.

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 specific time period and/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.

Students develop the ability to analyse language closely, recognising that words have historical and cultural import.

Unit 3

Adaptations and Transformations: In this area of study students focus on how the form of a text contributes to its meaning. Students explore the form of a set text by constructing a close analysis of that text. They then reflect on the extent to which adapting the text to a different form, and often in a new or reimagined context, affects its meaning, comparing the original with the adaptation. By exploring an adaptation, students also consider how creators of adaptations may emphasise or minimise viewpoints, assumptions and ideas present in the original text.

Developing Interpretations: In this area of study students explore the different ways we can read and understand a text by developing, considering and comparing interpretations of a set text.

Students first develop their own interpretations of a set text, analysing how ideas, views and values are presented in a text, and the ways these are endorsed, challenged and/or marginalised through literary forms, features and language. These student interpretations should consider the historical, social and cultural context in which a text is written and set. Students also consider their own views and values as readers.

Students then explore a supplementary reading that can enrich, challenge and/or contest the ideas and the views, values and assumptions of the set text to further enhance the students' understanding. Examples of a supplementary reading can include writing by a teacher, a scholarly article or an explication of a literary theory. A supplementary reading that provides only opinion or evaluation of the relative merits of the text is not considered appropriate for this task.

Informed by the supplementary reading, students develop a second interpretation of the same text, reflecting an enhanced appreciation and understanding of the text. They then apply this understanding to key moments from the text, supporting their work with considered textual evidence.

Unit 4

Creative Responses to Texts: In this area of study 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 context and form change to construct their own creative transformations of texts. They learn how authors develop representations of people and places, and they develop an understanding of language, voice, form and structure. Students draw inferences from the original text to create their own writing. In their adaptation of the tone and the style of the original text, students develop an understanding of the views and values explored.

Students develop an understanding of the various ways in which authors craft texts. They reflect critically on the literary form, features and language of a text, and discuss their own responses as they relate to the text, including the purpose and context of their creations.

Close Analysis of Texts: In this area of study students focus on a detailed scrutiny of the language, style, concerns and construction of texts. Students attend closely to textual details to examine the ways specific passages in a text contribute to their overall understanding of the whole text. Students consider literary forms, features and language, and the views and values of the text. They write expressively to develop a close analysis, using detailed references to the text.

Languages

CHINESE (FIRST LANGUAGE)

This study develops students' ability to understand and use the language, which is spoken by about one quarter of the world's population. Chinese is especially important in Australia because it is widely spoken in the community. Studying a language other than English contributes to the overall education of students, particularly in communication, but also in cross-cultural understanding, cognitive development, and literacy.

Unit 1

This unit will allow the student to establish and maintain a spoken or written exchange, listen to, read and obtain information from written and spoken texts and produce a personal response to a task focusing on real or imaginary experience.

Unit 2

This unit will allow the student to participate in a spoken or written exchange, listen to, read and extract and use information and ideas from spoken and written texts and give expression to real or imaginary experience in written or spoken form.

Unit 3

In this unit students undertake a detailed study of Language and Culture through texts. Students should be able to express ideas through the production of original texts, analyse and use information from spoken and written texts and exchange information, opinions and experiences. They should also be able to respond critically to spoken and written texts, which reflect aspects of the language and culture of Chinese-speaking communities.

Unit 4

In this unit students undertake a detailed study of language and culture through texts. Students should be able to express ideas through the production of original texts, analyse and use information from spoken and written texts and exchange information, opinions and experiences. They should also be able to respond critically to spoken and written texts, which reflect aspects of the language and culture of Chinese-speaking communities.

Health & Physical Education

HEALTH & HUMAN DEVELOPMENT

In Year 11 Health and Human Development, students explore the multifaceted nature of health and wellbeing and the factors influencing health throughout life.

Unit 1

Focuses on understanding health and wellbeing through various perspectives, including the World Health Organization's definition and social justice considerations. Students examine health attitudes and practices, particularly among Aboriginal and Torres Strait Islander Peoples, and analyse the influences on youth health. They learn to interpret health data and conduct research on youth health issues.

Unit 2

Addresses managing health and development across the lifespan. Students explore transitions from youth to adulthood, focusing on health changes and responsibilities. They study the Australian healthcare system, analyse health information, and consider the impact of digital media on healthcare access and quality.

Assessment includes exams, practical activities, data interpretation, and research projects. This course is ideal for those interested in health sciences, community services, and public health. Regular participation in practical and research activities is essential.

In Year 12 Health and Human Development, students explore health and wellbeing on both national and global scales.

Unit 3

Focuses on Australia's health within a global context. Students examine the multidimensional nature of health and consider the benefits of optimal health and wellbeing and its importance as an individual and a collective resource. Students focus on health promotion and improvements in population health over time and evaluate various public health approaches, considering Australia's health status and its comparison to global standards.

Unit 4

Delves into health and human development globally, analysing health status and factors contributing to inequalities between countries. Students study sustainability, globalisation's impact on health, and initiatives like the UN's Sustainable Development Goals. They also evaluate global health programs and consider their own role in global health improvement.

Assessment includes exams, research projects, and evaluations of health initiatives. This course is ideal for those interested in health sciences and international development. Regular participation in practical and research activities is expected.

PHYSICAL EDUCATION

VCE Physical Education explores the complex interrelationships between biophysical (anatomical, biomechanical, physiological and skill acquisition) and psychosocial (psychological and sociocultural) principles to understand their role in producing and refining movement for participation and performance in physical activity, sport and exercise.

Through physical, written, oral and digital learning experiences, students apply theoretical concepts and reflect critically on factors that affect all levels of participation and performance in physical activity, sport and exercise.

Integrating theoretical understanding and practice is central to the study of VCE Physical Education. Theoretical knowledge and skills are developed and utilised in and through practical activities, which can be opportunistic, structured or investigative experiences. Practical activities challenge students to reflect on and share their participatory perspectives, while emphasising the educational value of human movement to develop theoretical understanding. These opportunities ultimately help students to develop deeper holistic connections that support their understanding of biophysical and psychosocial movement concepts.

Unit 1: The human body in motion

In this unit, students explore how the musculoskeletal and cardiorespiratory systems work together to produce movement. Students investigate the role and function of the main structures in each system and how they respond to movement. Through participation in practical activities, students explore and analyse the relationships between the body systems and movement, and how these systems interact and respond at various intensities. Students investigate possible conditions and injuries associated with the musculoskeletal system and recommend and implement strategies to minimise and manage such injuries and conditions. They consider the ethical implications of using permitted and prohibited practices to improve the performance of the body systems, evaluating perceived physiological benefits and describing potential harms.

Unit 2: Physical activity, sport, exercise and society

This unit develops students' understanding of physical activity, sport and exercise from a participatory perspective. Students are introduced to types of physical activity and the role that physical activity participation and sedentary behaviour plays in their own health and wellbeing, as well as in other population groups and contexts.

Through a series of practical activities, students experience and explore different types of physical activity promoted within and beyond their community. They gain an appreciation of the movement required for health benefits and the consequences of physical inactivity and sedentary behaviour. Using various methods to assess physical activity and sedentary behaviour, students analyse data to investigate perceived barriers and enablers, and explore opportunities to enhance participation in physical activity. Students explore and apply the social-ecological model to critique a range of individual- and settings-based strategies that are effective in promoting participation in regular physical activity. They create and participate in a personal plan with movement strategies that optimise adherence to physical activity and sedentary behaviour guidelines.

By investigating a range of contemporary issues associated with physical activity, sport and exercise, students explore factors that affect access, inclusion, participation and performance. Students then select one issue at the local, national or global level and analyse key concepts within the issue, including investigating, participating in and prescribing movement experiences that highlight the issue.

Students develop an understanding of the historical and current perspectives on the issue and consider the future implications on participation and performance.

Unit 3: Movement skills and energy for physical activity, sport and exercise

This unit introduces students to principles used to analyse human movement from a biophysical perspective. Students use a variety of tools and coaching 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 correctly applying these principles can lead to improved performance outcomes.

Students consider the cardiovascular, respiratory and muscular systems and the roles of each in supplying oxygen and energy to the working muscles. They investigate the characteristics and interplay of the 3 energy systems for performance during physical activity, sport and exercise. Students explore the causes of fatigue and consider different strategies used to postpone fatigue and promote recovery.

Unit 4: Training to improve performance

In this unit, students' participation and involvement in physical activity will form the foundations of understanding how to improve performance from a physiological perspective. Students analyse movement skills and fitness requirements and apply relevant training principles and methods to improve performance at various levels (individual, club and elite).

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 assess fitness and use collected data to

justify the selection of fitness tests based on the physiological requirements of an activity, including muscles used, energy systems and fitness components. Students then consider all physiological data, training principles and methods to design a training program. The effectiveness of programs is evaluated according to the needs of the individual and chronic adaptations to training.

Humanities

ACCOUNTING

Unit 1: The role of accounting in business

This unit explores the establishment of a business and the role of accounting in the determination of business success or failure. It considers the importance of accounting information to stakeholders. Students analyse, interpret and evaluate the performance of the business using financial and non-financial information. They use these evaluations to make recommendations regarding the suitability of a business as an investment. Students record financial data and prepare reports for service businesses owned by sole proprietors.

Unit 2: Accounting and decision-making for a trading business

In this unit, students develop their knowledge of the accounting process for sole proprietors operating a trading business, with a focus on inventory, accounts receivable, accounts payable and non-current assets. Students use manual processes and ICT, including spreadsheets, to prepare historical and budgeted accounting reports.

Students analyse and evaluate the performance of the business relating to inventory, accounts receivable, accounts payable and non-current assets. They use relevant financial and other information to predict, budget and compare the potential effects of alternative strategies on the performance of the business. Using these evaluations, students develop and suggest to the owner strategies to improve business performance.

Unit 3: Financial accounting for a trading business

This unit focuses on financial accounting for a trading business owned by a sole proprietor, and highlights 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 and the perpetual method of inventory recording.

Students develop their understanding of the accounting processes for recording and reporting, and consider the effects of decisions made on the performance of the business. They interpret reports and information presented in a variety of formats and suggest strategies to the owner to improve the performance of the business.

Unit 4: Recording, reporting, budgeting and decision-making

In this unit, students further develop their understanding of accounting for a trading business owned by a sole proprietor and 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 and the perpetual method of inventory recording. Both manual methods and ICT are used to record and report.

Students extend their understanding of the recording and reporting processes, with the inclusion of balance day adjustments and alternative depreciation methods. They investigate both the role and the importance of budgeting in decision-making for a business. They analyse and interpret accounting reports and graphical representations to evaluate the performance of a business. Using this evaluation, students suggest strategies to business owners to improve business performance.

BUSINESS MANAGEMENT

Unit 1: Planning a business.

Businesses of all sizes are major contributors to the economic and social wellbeing of a nation. The ability of entrepreneurs to establish a business and the fostering of conditions under which new business ideas can emerge are vital for a nation's wellbeing. Taking a business idea and planning how to make it a reality are the cornerstones of economic and social development. In this unit students explore the factors affecting business ideas and the internal and external environments within which businesses operate, as well as the effect of these on planning a business. They also consider the importance of the business sector to the national economy and social wellbeing.

Unit 2: Establishing a business.

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

Unit 3: Managing a business.

In this unit students explore the key processes and considerations for managing a business efficiently and effectively to achieve business objectives. Students examine different types of businesses and their respective objectives and stakeholders. They investigate strategies to manage both staff and business operations to meet objectives and develop an understanding of the complexity and challenge of managing businesses. Students compare theoretical perspectives with current practice through the use of contemporary Australian and global business case studies from the past four years.

Unit 4: Transforming a business.

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

HISTORY

Unit 1: Change and Conflict

Students investigate the nature of social, political, economic, and cultural change in the later part of the 19th century and the first half of the 20th century. This unit explores the significant events, ideas, individuals, and movements that shaped the modern world, including the end of empires, the rise of nation-states, and the causes and consequences of World War I. Students examine the impact of the Treaty of Versailles, the rise of communism and fascism, and the global economic crisis of the Great Depression. They also analyse the factors that contributed to the outbreak of World War II, such as the failure of diplomacy, territorial aggression, and the rise of totalitarian regimes.

Unit 2: The Changing World Order

This unit focuses on the Cold War and its impact on global politics, society, and culture in the second half of the 20th century and the early 21st century. Students investigate the causes and consequences of the Cold War, including the ideological conflict between the United States and the Soviet Union, the arms race, proxy wars, and the collapse of the USSR. They also explore the rise of social movements that challenged existing values and traditions, such as the civil rights movement, feminism, and environmentalism. Additionally, students examine the impact of globalization, technological advancements, and terrorism on the changing world order.

Unit 3: History Revolutions: The Russian Revolution

Students investigate the causes, events, and consequences of the Russian Revolution, examining the social, political, and economic factors that led to the overthrow of the Tsarist regime and the establishment of the Soviet Union. They explore the rise of revolutionary movements, the role of key figures such as Lenin and Trotsky, the impact of World War I, and the challenges faced by the new communist government. Students analyse primary and secondary sources, including political manifestos, propaganda, and historical interpretations, to develop their understanding of this pivotal event in world history.

Unit 4: History Revolutions: The Chinese Revolution

This unit examines the causes, course, and consequences of the Chinese Revolution, focusing on the rise of communism under Mao Zedong and the establishment of the People's Republic of China. Students explore the long-term social and political changes in China, the impact of Japanese imperialism, the Chinese Civil War, and the challenges faced by the new communist regime, including the Great Leap Forward and the Cultural Revolution. They analyse a range of historical sources, such as personal accounts, official documents, and propaganda posters, to deepen their knowledge and understanding of this significant revolution.

LEGAL STUDIES

Unit 1: The presumption of innocence

Laws, including criminal law, aim to achieve social cohesion and protect the rights of individuals. Criminal law is aimed at maintaining social order. When a criminal law is broken, a crime is committed which is punishable and can result in criminal charges and sanctions. In this unit, students develop an understanding of legal foundations, such as the different types and sources of law, the characteristics of an effective law, and an overview of parliament and the courts. Students are introduced to and apply the principles of justice. They investigate key concepts of criminal law and apply these to actual and/or hypothetical scenarios to determine whether an accused may be found guilty of a crime. In doing this, students develop an appreciation of the manner in which legal principles and information are used in making reasoned judgments and conclusions about the culpability of an accused. Students also develop an appreciation of how a criminal case is determined, and the types and purposes of sanctions. Students apply their understanding of how criminal cases are resolved and the effectiveness of sanctions through consideration of recent criminal cases from the past four years.

Unit 2: Wrongs and rights

Civil law aims to protect the rights of individuals. When rights are infringed, a dispute may arise requiring resolution, and remedies may be awarded. In this unit, students investigate key concepts of civil law and apply these to actual and/or hypothetical scenarios to determine whether a party is liable in a civil dispute. Students explore different areas of civil law, and the methods and institutions that may be used to resolve a civil dispute and provide remedies. They apply knowledge through an investigation of civil cases from the past four years. Students also develop an understanding of how human rights are protected in Australia and

possible reforms to the protection of rights, and investigate a contemporary human rights issue in Australia, with a specific focus on one case study.

Unit 3: Rights and justice

The Victorian justice system, which includes the criminal and civil justice systems, aims to protect the rights of individuals and uphold the principles of justice: fairness, equality and access. In this unit, students examine the methods and institutions in the criminal and civil justice system, and consider their appropriateness in determining criminal cases and resolving civil disputes. Students consider the Magistrates' Court, County Court and Supreme Court within the Victorian court hierarchy, as well as other means and institutions used to determine and resolve cases. Students explore topics such as the rights available to an accused and to victims in the criminal justice system, the roles of the judge, jury, legal practitioners and the parties, and the ability of sanctions and remedies to achieve their purposes. Students investigate the extent to which the principles of justice are upheld in the justice system. Throughout this unit, students apply legal reasoning and information to actual and/or hypothetical scenarios.

Unit 4: The people, the law and reform

The study of Australia's laws and legal system includes an understanding of institutions that make and reform our laws. In this unit, students explore how the Australian Constitution establishes the law-making powers of the Commonwealth and state parliaments, and how it protects the Australian people through structures that act as a check on parliament in law-making. Students develop an understanding of the significance of the High Court in protecting and interpreting the Australian Constitution. They investigate parliament and the courts, and the relationship between the two in law-making, and consider the roles of the individual, the media and law reform bodies in influencing changes to the law, and past and future constitutional reform. Throughout this unit, students apply legal reasoning and information to actual and/or hypothetical scenarios.

Mathematics

FOUNDATION MATHEMATICS

In Foundation Mathematics there is an 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 'Algebra, Number and Structure', 'Data analysis, probability and statistics', 'Financial and Consumer Mathematics' and 'Space and Measurement'. All four areas of study are to be completed over the two units. In undertaking these units, students are expected to be able to apply number skills, involving arithmetic, lists, graphs and tables, diagrams and geometric constructions, equations and with and without the use of technology. 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.

Foundation Mathematics Units 3 and 4 focus on providing students with the mathematical knowledge, skills and understanding to solve problems in real contexts for a range of workplace, personal, further learning, community and global settings relevant to contemporary society. The areas of study for Units 3 and 4 are 'Algebra, number and structure', 'Data analysis, probability and statistics', 'Discrete mathematics' and 'Space and measurement'.

Assumed knowledge and skills for Foundation Mathematics Units 3 and 4 are contained in Foundation Mathematics Units 1 and 2. Whilst not a prerequisite, it is recommended that students have study maths at Unit 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, contemporary data displays, diagrams,

plans, geometric objects and constructions, algebra, algorithms, measures, equations and graphs, with and without the use of technology.

Students' skills will be assessed through the completion of three Mathematical Investigation into topics relevant to students' interests.

GENERAL MATHEMATICS

General Mathematics Units 1 and 2 cater for a range of student interests, provide preparation for the study of VCE General Mathematics at the Units 3 and 4 level and contain assumed knowledge and skills for these units. The areas of study for Unit 1 of General Mathematics are 'Data analysis, probability and statistics', 'Algebra, number and structure', 'Functions, relations and graphs' and 'Discrete mathematics'.

In undertaking these units, students are expected to be able to apply techniques, routines and processes involving rational and real arithmetic, sets, lists, tables and matrices, diagrams and geometric constructions, algorithms, algebraic manipulation, recurrence relations, 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.

It is highly recommended that students intending to undertake this subject in Units 3 & 4, should have successfully completed and passed General Mathematics Units 1 & 2 prior.

General Mathematics Units 3 and 4 focus on real-life application of mathematics and consist of the areas of study 'Data analysis, probability, and statistics' and 'Discrete mathematics'.

Unit 3 comprises Data analysis and Recursion and financial modelling, and Unit 4 comprises Matrices and Networks and decision mathematics. Assumed knowledge and skills for General Mathematics Units 3 and 4 are contained in General Mathematics 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 key skills for the outcomes of General Mathematics Units 3 and 4.

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

MATHEMATICAL METHODS

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. The units are designed as preparation for Mathematical Methods Units 3 and 4 and contain assumed knowledge and skills for these units.

Unit 1

The focus of Unit 1 is the study of simple algebraic functions, and the areas of study are 'Functions, relations and graphs', 'Algebra, number and structure', 'Calculus' and 'Data analysis, probability and statistics'. At the end of Unit 1, students are expected to have covered the content outlined in each area of study, with the exception of 'Algebra, number and structure' which extends across Units 1 and 2. This content should be presented so that there is a balanced and progressive development of skills and knowledge from each of the

four areas of study with connections between and across the areas of study being developed consistently throughout both Units 1 and 2.

In undertaking this unit, 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, algorithms, algebraic manipulation, equations, graphs and 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 2

The focus of Unit 2 is the study of simple transcendental functions, the calculus of polynomial functions and related modelling applications. The areas of study are 'Functions, relations and graphs', 'Algebra, number and structure', 'Calculus' and 'Data analysis, probability and statistics'. At the end of Unit 2, students are expected to have covered the content outlined in each area of study.

Material from the areas of study should be organised so that there is a clear progression of skills and knowledge from Unit 1 to Unit 2 in each area of study.

In undertaking this unit, 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, algorithms, 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.

Units 3 & 4

These units consist of the areas of study 'Functions and graphs', 'Calculus', 'Algebra' and 'Probability and statistics', which must be covered in progression from Unit 3 to Unit 4, with an appropriate selection of content for each of Unit 3 and Unit 4. Assumed knowledge and skills for Mathematical Methods Units 3 and 4 are contained in Mathematical Methods Units 1 and 2, and 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.

For Unit 3 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. For Unit 4, the content from the 'Calculus' area of study would be likely to include the treatment of antidifferentiation, 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. There should be a clear progression of skills and knowledge from Unit 3 to Unit 4 in each area of study.

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, reasoning and proof. This study has a focus on interest in the discipline of mathematics 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. Study of Specialist Mathematics Units 3 and 4 also assumes concurrent study or previous completion of Mathematical Methods Units 3 and 4.

The areas of study for Specialist Mathematics Units 1 and 2 are 'Algebra, number and structure', 'Data analysis, probability and statistics', 'Discrete mathematics', 'Functions, relations and graphs' and 'Space and measurement'.

Unit 1

At the end of Unit 1 students are expected to have covered the material in the areas of study: 'Algebra, number and structure' and 'Discrete mathematics'. Concepts from these areas of study will be further developed and used in Unit 2 and also in Units 3 and 4.

In undertaking this unit, students are expected to be able to apply techniques, routines and processes involving rational, real and complex arithmetic, sets, lists, tables and matrices, diagrams, graphs, logic gates and geometric constructions, algorithms, algebraic manipulation, recurrence relations, equations and graphs, with and without the use of technology. They are expected to be able to construct proofs and develop and interpret algorithms to solve problems. 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.

Unit 2

At the end of Unit 2 students are expected to have covered the material in the areas of studies: 'Data analysis, probability and statistics', 'Space and measurement', 'Algebra, number and structure' and 'Functions, relations and graphs'.

In undertaking this unit, students are expected to be able to apply techniques, routines and processes involving rational, real and complex arithmetic, sets, lists, tables, vectors and matrices, diagrams and geometric constructions, algorithms, algebraic manipulation, equations and graphs, with and without the use of technology. They are expected to be able to construct proofs and develop and interpret algorithms to solve problems. 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.

Units 3 & 4

(Note: It is highly recommended that students intending to undertake this subject in Unit 3 & 4, should have successfully completed Mathematical Methods Unit 1 & 2 and Specialist Maths Unit 1 & 2 prior.)

Specialist Mathematics Units 3 and 4 consist of the areas of study: 'Algebra, number and structure', 'Calculus', 'Data analysis, probability and statistics', 'Discrete mathematics', 'Functions, relations and graphs', and 'Space and measurement'. The development of course content should highlight mathematical structure, reasoning and proof and applications across a range of modelling contexts with an appropriate selection of content for each of Unit 3 and Unit 4.

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

For Unit 3 a selection of content would typically include content from the 'Discrete mathematics', 'Functions, relations and graphs', 'Algebra, number and structure', 'Space and measurement' and 'Calculus' areas of study. In Unit 4 the corresponding selection of content would typically consist of the remaining content from the 'Discrete mathematics', 'Calculus', and 'Space and measurement' areas of study and the content from the 'Data analysis, probability and statistics' area of study.

In undertaking these units, students are expected to be able to apply techniques, routines and processes involving rational, real and complex arithmetic, sets, lists, tables and vectors, diagrams and geometric constructions, algorithms, algebraic manipulation, equations, graphs, differentiation, anti-differentiation and 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.

Science

BIOLOGY

Unit 1: How do organisms regulate their functions?

In this unit students examine the cell as the structural and functional unit of life, from the single celled to the multicellular organism, including the requirements for sustaining cellular processes. Students focus on cell growth, replacement and death and the role of stem cells in differentiation, specialisation and renewal of cells. They explore how systems function through cell specialisation in vascular plants and animals, and consider the role homeostatic mechanisms play in maintaining an animal's internal environment.

A student-adapted or student-designed scientific investigation is undertaken in Area of Study 3. The investigation involves the generation of primary data and is related to the function and/or the regulation of cells or systems. The investigation draws on the key science skills and key knowledge from Area of Study 1 and/or Area of Study 2.

Unit 2: How does inheritance impact on diversity?

In this unit students explore reproduction and the transmission of biological information from generation to generation and the impact this has on species diversity. They apply their understanding of chromosomes to explain the process of meiosis. Students consider how the relationship between genes, and the environment and epigenetic factors influence phenotypic expression. They explain the inheritance of characteristics, analyse patterns of inheritance, interpret pedigree charts and predict outcomes of genetic crosses.

Students analyse the advantages and disadvantages of asexual and sexual reproductive strategies, including the use of reproductive cloning technologies. They study structural, physiological and behavioural adaptations that enhance an organism's survival. Students explore interdependences between species, focusing on how keystone species and top predators structure and maintain the distribution, density and size of a population. They also consider the contributions of Aboriginal and Torres Strait Islander knowledge and perspectives in understanding the survival of organisms in Australian ecosystems.

A student-directed research investigation into a contemporary ethical issue is to be undertaken in Area of Study 3. The investigation relates to the application of genetic knowledge, reproductive science, inheritance or adaptations and interdependencies beneficial for survival. The investigation draws on key knowledge and key science skills from Area of Study 1 and/or Area of Study 2.

Unit 3: How do cells maintain life

In this unit students investigate the workings of the cell from several perspectives. They explore the relationship between nucleic acids and proteins as key molecules in cellular processes. Students analyse the structure and function of nucleic acids as information molecules, gene structure and expression in prokaryotic and eukaryotic cells and proteins as a diverse group of functional molecules. They examine the biological consequences of manipulating the DNA molecule and applying biotechnologies. Students explore the structure, regulation and rate of biochemical pathways, with reference to photosynthesis and cellular respiration. They explore how the application of biotechnologies to biochemical pathways could lead to improvements in agricultural practices. Students apply their knowledge of cellular processes through investigation of a selected case study, data analysis and/or a bioethical issue. A student-designed scientific investigation related to cellular processes and/or responses to challenges over time is undertaken in either Unit 3 or Unit 4, or across both Units 3 and 4. The design, analysis and findings of the investigation are presented in a scientific poster format.

Unit 4: How does life change and respond to challenges

In this unit students consider the continual change and challenges to which life on Earth has been, and continues to be, subjected to. They study the human immune system and the interactions between its components to provide immunity to a specific pathogen. Students consider how the application of biological knowledge can be used to respond to bioethical issues and challenges related to disease. Students consider how evolutionary biology is based on the accumulation of evidence over time. They investigate the impact of various change events on a population's gene pool and the biological consequences of changes in allele frequencies. Students examine the evidence for relatedness between species and change in life forms over time using evidence from palaeontology, structural morphology, molecular homology and comparative genomics. Students examine the evidence for structural trends in the human fossil record, recognising that interpretations can be contested, refined or replaced when challenged by new evidence. Students demonstrate and apply their knowledge of how life changes and responds to challenges through investigation of a selected case study, data analysis and/or bioethical issue. A student-designed scientific investigation involving the generation of primary data related to cellular processes and/or how life changes and responds to challenges 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 design, analysis and findings of the investigation are presented in a scientific poster format.

CHEMISTRY

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

The development and use of materials for specific purposes is an important human endeavour. In this unit students investigate the chemical structures and properties of a range of materials, including covalent compounds, metals, ionic compounds and polymers. They are introduced to ways that chemical quantities are measured. They consider how manufacturing innovations lead to more sustainable products being produced for society through the use of renewable raw materials and a transition from a linear economy towards a circular economy.

Unit 2: How do chemical reactions shape the natural world?

Society is dependent on the work of chemists to analyse the materials and products in everyday use. In this unit students analyse and compare different substances dissolved in water and the gases that may be produced in chemical reactions. They explore applications of acid-base and redox reactions in society.

Students conduct practical investigations involving the specific heat capacity of water, acid-base and redox reactions, solubility, molar volume of a gas, volumetric analysis, and the use of a calibration curve.

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

The global demand for energy and materials is increasing with world population growth. In this unit students investigate the chemical production of energy and materials. They explore how innovation, design and sustainability principles and concepts can be applied to produce energy and materials while minimising possible harmful effects of production on human health and the environment.

Students analyse and compare different fuels as energy sources for society, with reference to the energy transformations and chemical reactions involved, energy efficiencies, environmental impacts and potential applications. They explore food in the context of supplying energy in living systems. The purpose, design and operating principles of galvanic cells, fuel cells, rechargeable cells and electrolytic cells are considered when evaluating their suitability for supplying society's needs for energy and materials. They evaluate chemical processes with reference to factors that influence their reaction rates and extent. They investigate how the rate of a reaction can be controlled so that it occurs at the optimum rate while avoiding unwanted side reactions and by-products. Students conduct practical investigations involving thermochemistry, redox reactions, electrochemical cells, reaction rates and equilibrium systems.

Unit 4: How are carbon-based compounds designed for purpose?

Carbon is the basis not only of the structure of living tissues but is also found in fuels, foods, medicines, polymers and many other materials that we use in everyday life. In this unit students investigate the structures and reactions of carbon-based organic compounds, including considering how green chemistry principles are applied in the production of synthetic organic compounds. They study the metabolism of food and the action of medicines in the body. They explore how laboratory analysis and various instrumentation techniques can be applied to analyse organic compounds in order to identify them and to ensure product purity.

Students conduct practical investigations related to the synthesis and analysis of organic compounds, involving reaction pathways, organic synthesis, identification of functional groups, direct redox titrations, solvent extraction and distillations.

ENVIRONMENTAL SCIENCE

Unit 1: How are Earth's dynamic systems interconnected to support life?

In this unit students examine the processes and interactions occurring within and between Earth's four interrelated systems – the atmosphere, biosphere, hydrosphere and lithosphere. They focus on how ecosystem functioning can influence many local, regional and global environmental conditions such as plant productivity, soil fertility, water quality and air quality. Students explore how changes that have taken place throughout geological and recent history are fundamental to predicting the likely impact of future changes. They consider a variety of influencing factors in achieving a solutions-focused approach to responsible management of challenges related to natural and human-induced environmental change.

Unit 2: What affects Earth's capacity to sustain life?

In this unit students consider pollution as well as food and water security as complex and systemic environmental challenges facing current and future generations. They examine the characteristics, impacts, assessment and management of a range of pollutants that are emitted or discharged into Earth's air, soil, water and biological systems, and explore factors that limit and enable the sustainable supply of adequate and affordable food and water.

PHYSICS

Unit 1: What ideas explain the physical world?

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

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

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

Unit 3: How do fields explain motion and electricity?

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

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

In this unit, students explore the use of wave and particle theories to model the properties of light and matter. They examine how the concept of the wave is used to explain the nature of light and analyse its limitations in describing light behaviour. Students further investigate light by using a particle model to explain its behaviour. A wave model is also used to explain the behaviour of matter which enables students to consider the relationship between light and matter. Students are challenged to think beyond the concepts experienced in everyday life to study the physical world from a new perspective.

PSYCHOLOGY

Unit 1: How are behaviour and mental processes shaped?

In this unit students investigate the structure and functioning of the human brain and the role it plays in the overall functioning of the human nervous system. Students explore brain plasticity and the influence that brain damage may have on a person's psychological functioning. They consider the complex nature of psychological development, including situations where psychological development may not occur as expected.

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

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

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

In this unit students investigate the contribution that classical and contemporary research has made to the understanding of the functioning of the nervous system and to the understanding of biological, psychological and social factors that influence learning and memory. Students investigate 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 stress as a psychobiological process, including emerging research into the relationship between the gut and the brain in psychological functioning. Students investigate how mechanisms of learning and memory lead to the acquisition of knowledge and the development of new and changed behaviours. They consider models to explain learning and memory as well as the interconnectedness of brain regions involved in memory. The use of mnemonics to improve memory is explored, including Aboriginal and Torres Strait Islander peoples' use of place as a repository of memory.

Unit 4: How is wellbeing developed and maintained?

In this unit students explore the demand for sleep and the influences of sleep on mental wellbeing. They consider the biological mechanisms that regulate sleep and the relationship between rapid eye movement (REM) and non-rapid eye movement (NREM) sleep across the life span. They also study the impact that changes to a person's sleep-wake cycle and sleep hygiene have on a person's psychological functioning and consider the contribution that classical and contemporary research has made to the understanding of sleep. Students consider ways in which mental wellbeing may be defined and conceptualised, including social and emotional wellbeing (SEWB) as a multidimensional and holistic framework to wellbeing. They explore the concept of mental wellbeing as a continuum and apply a biopsychosocial approach, as a scientific model, to understand specific phobia. They explore how mental wellbeing can be supported by considering the importance of biopsychosocial protective factors and cultural determinants as integral to the wellbeing of Aboriginal and Torres Strait Islander peoples.

Technology

FOOD STUDIES

Unit 1: Food origins

In this unit students focus on food from historical and cultural perspectives and investigate the origins and roles of food through time and across the world. Students explore how humans have historically sourced their 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 one food-producing region of the world. 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. Students also consider the influence of innovations, technologies, and globalisation on food patterns. Throughout this unit they complete topical and contemporary practical activities to enhance, demonstrate and share their learning with others.

Unit 2: Food makers

In this unit students investigate food systems in contemporary Australia. Students focus on commercial food production industries, they also look at food production in domestic and small-scale 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

In this unit students investigate the many roles and everyday influences of food. Students explore the science of food: our physical need for it and how it nourishes and sometimes harms our bodies. Students investigate the science of food appreciation, the physiology of eating and digestion, and the role of diet on gut health. They analyse the scientific evidence, including nutritional rationale, behind the healthy eating recommendations of the Australian Dietary Guidelines and the Australian Guide to Healthy Eating, and develop their understanding of diverse nutrient requirements. Students also focus on influences on food choices: 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.

Unit 4: Food issues, challenges, and futures

In this unit students examine debates about Australia's food systems as part of the global food systems and describe key issues relating to the challenge of adequately feeding a rising world population. Students focus 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. They also consider the relationship between food security, food sovereignty and food citizenship. Students consider how to assess information and draw evidence-based conclusions, and 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.

Students also focus on issues about the environment, climate, ecology, ethics, farming practices, including the use and management of water and land, the development and application of innovations and technologies, and the challenges of food security, food sovereignty, food safety and food wastage. They research a selected topic, seeking clarity on current situations and points of view, considering solutions and analysing work undertaken to solve problems and support sustainable futures. The focus of this unit is on food issues, challenges and futures in Australia.

PRODUCT DESIGN & TECHNOLOGY

Unit 1: Design practices

This unit focuses on the work of designers across relevant specialisations in product design. Students explore how designers collaborate and work in teams; they consider the processes that designers use to conduct research and the techniques they employ to generate ideas and design products. In doing this, they practise using their critical, creative and speculative thinking strategies. When creating their own designs, students use appropriate drawing systems – both manual and digital – to develop graphical product concepts. They also experiment with materials, tools and processes to prototype and propose physical product concepts.

In Area of Study 1 students analyse and evaluate existing products and current technological innovations in product design. They achieve this through understanding the importance of a design brief, learning about factors that influence design, and using the Double Diamond design approach as a framework.

In Area of Study 2 in their practical work, students explore and test materials, tools and processes available to them in order to work technologically, and they practise safe skill development when creating an innovative product. This is achieved through the development of graphical product concepts and the use of prototypes to explore and propose physical product concepts.

Unit 2: Positive impacts for end users

Designers should look outward, both locally and globally, to research the diverse needs of end users. They should explore how inclusive product design solutions can support belonging, access, usability and equity. In this unit, students specifically examine social and/or physical influences on design. They formulate a profile of an end user(s), research and explore the specific needs or opportunities of the end user(s) and make an inclusive product that has a positive impact on belonging, access, usability and/or equity. Students also explore cultural influences on design. They develop an awareness of how Aboriginal and Torres Strait Islander peoples design and produce products, how sustainable design practices care for Country, and how traditions and culture are acknowledged in contemporary designs. Students also have opportunities to make connections to personal or other cultural heritages.

In Area of Study 1 students research designs across a range of design specialisations, and critique products to make judgments about their success (or failure) using the factors that influence product design. Products selected for research should address inclusion through belonging, access, usability and/or equity considerations. Students also analyse and evaluate future market opportunities or needs for products.

In Area of Study 2 students design and make an inclusive product that responds to a need or opportunity of an end user(s) that addresses positive impacts in relation to belonging, access, usability and/or equity.

In Area of Study 3 students investigate a diverse range of end users, designers and other people, and explore varied perspectives to develop insights into how culture influences and affects product design. Students specifically focus on Aboriginal and Torres Strait Islander peoples and explore how they demonstrate their culture through design in both traditional and contemporary ways. Students are also encouraged to make connections to their own cultural heritage through the understanding of other cultures. Students research locally and globally to develop a worldview of cultural influences in order to gain an understanding about themselves as both designer and consumer within a diverse global community.

Unit 3: Ethical product design and development

In this unit students research a real personal, local or global need or opportunity with explicit links to ethical considerations. They conduct research to generate product concepts and a final proof of concept for a product solution that addresses the need(s) or opportunities of the end user(s).

Product designers respond to current and future social, economic, environmental or other ethical considerations. This unit focuses on the analysis of available materials in relation to sustainable practices, tensions between manufacturing and production, modern industrial and commercial practices, and the lifecycles of products from sustainability or worldview perspectives.

Students plan to develop an ethical product through a problem-based design approach, starting with a need or opportunity and using a design process and testing to problem-solve. The design brief, product concepts and the final proof of concept are developed through the Double Diamond design approach, using design thinking. Students undertake the role of a designer to generate, analyse and critique product concepts, with the chosen product concept becoming the final proof of concept. Throughout a design process, the product concepts and the final proof of concept are evaluated using relevant factors that influence product design and shaped using design thinking. Students learn about ethical research methods when investigating and defining their design need and/or opportunity and generating and designing their product concepts.

In Area of Study 1, students examine a range of factors that influence the design, development and production of products within industrial settings. Students research and investigate designs across a range of specialisations that include historical iconic designs that have stood the test of time; designs with inbuilt obsolescence; products that are fast to the market; products that are designed to last its lifetime; products that have a second life through disassembly and reuse and/or designs in and with nature. They consider influences on product design when addressing ethical considerations for end users.

In Area of Study 2, students use design thinking to formulate a design brief that addresses a need or opportunity related to ethical product design and conduct research to explore current market needs and/or opportunities. Students generate, evaluate and critique graphical product concepts (visualisations, design options and working drawings) related to ethical product design.

In Area of Study 3, students explore the physicality of product concepts through developing prototypes to select and justify the chosen product concept and a final proof of concept. Students develop a scheduled production plan to manage the resources in a design process and implement this scheduled production plan to make their product safely.

Unit 4: Production and evaluation of ethical designs

In this unit students continue to work as designers throughout the production process. They observe safe work practices in their chosen design specialisations by refining their production skills using a range of materials, tools and processes.

Students collect, analyse, interpret and present data, use ethical research methods and engage with end user(s) to gain feedback and apply their research and findings to the production of their designed solution. Students also focus on how speculative design thinking can encourage research, product development and entrepreneurial activity through the investigation and analysis of examples of current, emerging and future technologies and market trends.

In Area of Study 1, students continue to make the product designed in Unit 3, using materials, tools and processes safely and responsibly. Throughout the production process, they monitor and record their progress during implementation of their scheduled production plan and justify decisions and modifications, if and when necessary.

In Area of Study 2, students evaluate their product and a range of existing products using criteria, data and feedback. They speculate on how designers can be future-focused, innovative and entrepreneurial by suggesting and justifying possible product enhancements and/or improvements based on this evaluation.

SYSTEMS ENGINEERING

Unit 1: Mechanical systems

This unit focuses on engineering fundamentals as the basis of understanding concepts, principles and components that operate in mechanical systems. The term 'mechanical systems' includes systems that utilise all forms of mechanical components and their linkages.

Outcome 1

On completion of this unit the student should be able to describe and apply basic engineering concepts and principles, and use components to design and plan a mechanical system using the systems engineering process.

Outcome 2

On completion of this unit the student should be able to produce, test, diagnose and evaluate a mechanical system using the systems engineering process.

Unit 2: Electrotechnological Systems

In this unit students study fundamental electrotechnological engineering principles. The term 'electrotechnological' encompasses systems that include electrical/electronic circuitry including microelectronic circuitry. Through the application of the systems engineering process, students create

operational electrotechnological systems, which may also include mechanical components or electro-mechanical subsystems.

Outcome 1

On completion of this unit the student should be able to investigate, represent, describe and use basic electrotechnological and basic control engineering concepts, principles and components, and design and plan an electrotechnological system using the systems engineering process.

Outcome 2

On completion of this unit the student should be able to produce, test and evaluate an electrotechnological system, using the systems engineering process.

Unit 3: Integrated and controlled systems

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

Outcome 1

On completion of this unit the student should be able to investigate, analyse and apply concepts and principles, and use components to design, plan and commence production of an integrated and controlled mechanical and electrotechnological system using the systems engineering process.

Outcome 2

On completion of this unit the student should be able to discuss the advantages and disadvantages of renewable and non-renewable energy sources, and analyse and evaluate the technology used to harness, generate and store non-renewable and renewable energy.

Unit 4: Systems control

In this unit students complete the creation of the mechanical and electrotechnological integrated and controlled system they researched, designed, planned and commenced production of in Unit 3. Students investigate new and emerging technologies, consider reasons for their development and analyse their impacts.

Outcome 1

On completion of this unit the student should be able to finalise production, test and diagnose a mechanical and electrotechnological integrated and controlled system using the systems engineering process, and manage, document and evaluate the system and the process, as well as their use of it

Outcome 2

On completion of this unit the student should be able to evaluate a range of new or emerging systems engineering technologies and analyse the likely impacts of a selected technology

VCE Vocational Major (VCE-VM)

All students must complete an expression of interest and attend an interview to ensure vocational units of study are aligned to their desired pathway. The decision to undertake the VCE VM or VPC should consider the student's:

- Strengths and interests
- Vocational goals and envisaged pathways
- Preferred learning style
- Readiness for participation in structured workplace learning
- Ability to secure and satisfactorily complete formal vocational education and
- Leadership capabilities

Structure

Students will attend formal classes at school three days per week, complete their VETiS course either onsite or externally one day per week and undertake a day of structured workplace learning one day per week. Students that elect to enrol in an additional subject, VCE subject or an elite sport program will undertake structured workplace learning in a two-week block.

Integrated curriculum with an applied learning focus

Students will apply the appropriate Literacy, Numeracy, Personal Development Skills and Work Related Skills to a variety of community-based projects. Students will have some agency to negotiate the topics they will focus on relevant to their vocational goals and envisaged pathways. Topics may include; health and wellbeing, sustainability, travel and tourism, the world of work and future finances for example.

Satisfactory achievement

To achieve a VCE VM students must satisfactorily complete 16 units including:

- Three Literacy units or VCE English units, two of which must be a Unit 3 and 4 sequence,
- At least three additional Unit 3 and 4 sequences,
- Two Numeracy units or VCE Mathematics units,
- Two Work Related Skills units,
- Two Personal Development Skills units, and
- 180 hours of VET at Certificate II level or above.

Students may include other VCE units timetable permitting. Students should refer to the VCE and VCE-VM subject descriptions for further detail about each unit.

Year 11 and 12 students that may not be able to participate in the VCE VM may undertake the VPC. To achieve a VPC students must complete at least 12 units including:

- 2 Literacy units
- 2 Numeracy units
- 2 Work Related Skills units and
- 2 Personal Development Skills units

The standard program will be for students to study Literacy, Foundation Mathematics, Work Related Skills and Personal Development Skills. Should students wish to access areas of study outside these defaults, these must be pre-planned prior to beginning VM in Year 11 to ensure minimum unit requirements can be met.

Vocational and Educational Training (VET)

[all students]

Students can supplement their Year 9/10 or VCE program, or fulfill the VET requirements of their VCE-VM certificate, by enrolling in courses hosted at the college.

BHSSC has an established auspice partnership with AIET (a ReadCloud VET Registered Training Organisation [RTO 121314]) in which we offer the following courses:

- 22614VIC - Certificate II in Building and Construction (Pre-apprenticeship)
- 22569VIC - Certificate II in Plumbing (Pre-Apprenticeship)
- 22499VIC - Certificate II in Electrotechnology (Pre-vocational)
- AHC20422 - Certificate II in Horticulture

The full course guide for each program, including individual units of study, can be found on the AIET website: <https://link.readcloudvet.com/CourseGuide2025>

Enrolments in these VET courses are with ReadCloud AIET [RTO 121314], delivered by BHSSC staff.

The following individual units will be delivered by third party RTOs:

- CPCWHS1001 Prepare to work safely in the construction industry
- HLTAID010 Provide basic emergency life support

BHSSC also partners with IVET [RTO405] to provide the following VET courses:

- SIS30122 - Certificate III in Sport, Aquatics and Recreation
- SIS20321 - Certificate II in Sport Coaching
- SIS20419 - Certificate II in Outdoor Recreation (Year 10 only – one year program)
- SIT20421 - Certificate II in Cookery

The full course guide for each program, including individual units of study, can be found on the IVET website: [2025-IVET-Course-Guide_VIC-DIGITAL.pdf \(ivetinstitute.com.au\)](https://www.ivetinstitute.com.au/2025-IVET-Course-Guide_VIC-DIGITAL.pdf)

Opportunities in VET programs are prioritised by year level, with strict caps on class sized due to OH&S requirements. VET courses cannot be joined in progress or changed over between semesters. In most cases, a VET completion requires a two (2) year commitment.