
2025

**VCE Course
Handbook**



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Introduction

Dear Students and Parents,

In Years 11 & 12 students at Diamond Valley College become part of the Senior School where the key values of respect, excellence and responsibility remain paramount to the college ethos. Students have reached an important milestone in their lives when they consider their education in terms of essential requirements for their future pathway and career.

This Handbook contains all the information you need to choose your course for next year. It outlines the Year VCE Curriculum offered at the college from all Domains. It also provides information about enhancement studies where students can access University subjects as part of their program. Students should also refer to the VCAA website to access each of the Study designs for all of the studies they are interested in.

Students should also use this guide in conjunction with the Senior Sub-School Handbook which outlines all of the College's policies and procedures about the VCE which fall in line with the VCAA.

Any uncertainty about career direction or subject choice should be directed to the Careers Coordinator or the Senior Sub-school staff. College staff members are always available to assist students with their pathway planning. The senior sub-school team, home group teachers and the careers staff will continue to support students through to their final placement in a tertiary course, apprenticeship, training or employment.

We do hope that you enjoy your journey over the next few years.

Senior Sub-School Team

Senior Sub School Leader	Rebecca Taylor
Assistant Principal for Junior School	Reg Byrne
Art Domain Leaser	Kylie Triegaardt
English Domain Leader	Jane Overton
Humanities Domain Leader	Tim Bradtke
Maths Domain Leader	Kara Vella
Science Domain Leader	Geoff Brasier
Physical Education and Health	Kirk Briggs
Technology Domain Leader	Simon Berriman

Expectation of Students

The Senior Sub School at Diamond Valley College includes Year 10 and the VCE/VCAL Years 11 and 12. Students enrolled in the Senior School are expected to display high standards of behaviour and due to their senior position in the school act as appropriate role models to junior students.

General Information

Students are expected to take considerable responsibility for their learning by participating actively in and reflecting upon their academic work.

It is their responsibility:

- To meet attendance requirements for all classes
- To work constructively and purposefully in all classes
- To be punctual to school and class
- To complete all set work in the prescribed way by the due date
- To ensure that all work is their own
- To find out about and complete the work missed through absence
- To use their College Planner in an effective manner
- To manage their study and research time effectively outside school contact hours. In year 10 this is expected to be 1-2 hours minimum per subject per week.

Core Subjects

English

Units 1& 2, Units 3 & 4 English

Units 1& 2, Units 3 & 4 Literature

As stated by the Victorian Curriculum and Assessment Authority:

'To satisfactorily complete the VCE, a student must have satisfactory results (S) from at least three units from the English group, including a Unit 3–4 sequence.'

Students must select at least one of the English subjects offered in this booklet. Students can choose to study multiple English subjects. Diamond Valley College currently offers English and Literature.

English – Unit 1

In this unit, students focus on their personal connections to texts. They will practice inferential reading skills and explore how the construction of a text can elicit meaning. Students will investigate various text structures and immerse themselves in different social, historical and cultural contexts. Through the study of set texts and mentor texts, students will partake in discussion, create different text types and write analytical essays.

Outcomes:

Students should be able to:

- Make personal connections and explore ideas within different texts
- Craft personal and analytical texts designed for a specific context and audience
- Describe and explain decisions about vocabulary, text structures and language features

English – Unit 2

In this unit, students will continue to explore and analyse different text types. Students will examine texts and consider the tensions, ideas and concerns that are represented. Students will discuss various ideas, partake in rich discussion, practice utilising evidence to support ideas and use organisational structures in which to base analytical responses. Additionally, students will explore the construction of arguments and consider how language can be utilised to position and persuade an audience.

Outcomes:

Students should be able to:

- Explore how vocabulary, text structures, language features and ideas construct meaning.
- Explore and analyse how persuasive texts position audiences
- Students will write analytical essays, complete annotations, analyse different arguments and present a point of view oral presentation.

English – Unit 3

In this area of study students identify, discuss and analyse how the features of selected texts create meaning and how they in turn influence reader's interpretations.

Student will also use a designated framework to produce texts whose purpose is to express, reflect, inform and persuade. Students will practise the skills of revision, editing and refining to complete pieces that reflect a chosen audience, purpose and context and explain their decisions made through writing processes.

Outcomes

Students should be able to:

1. Analyse ideas, concerns and values presented in a text, informed by the vocabulary, text structures and language features and how they make meaning.
2. Demonstrate effective writing skills by producing their own texts, designed to respond to a specific context and audience to achieve a stated purpose; and explain their decisions made through writing processes

English – Unit 4

In this unit students will further sharpen their skills of reading and viewing texts, developed in the corresponding area of study in Unit 3. Students consolidate their capacity to critically analyse texts and deepen their understanding of the ideas and values a text can convey.

They will analyse the use of argument and persuasive language in media texts that present a point of view on an issue currently debated in the media. They will demonstrate understanding of how authors construct arguments to position audiences in written, audio and visual language. Students will also complete a sustained oral presentation of an issue currently debated in the media. In doing this, they will demonstrate the conventions of discussion and debate.

Outcomes

Students should be able to:

1. Analyse explicit and implicit ideas, concerns and values presented in a text, informed by vocabulary, text structures and language features and how they make meaning.
2. Analyse the use of argument and language in persuasive texts, including one written text (print or digital) and one text in another mode (audio and/or audio visual).
3. Develop and present a point of view text.

ASSESSMENT

Units 1 and 2

The individual school will determine levels of achievement.

Units 3 and 4

School-assessed course work and examinations.

- Unit 3 school-assessed coursework: 25 %
- Unit 4 school-assessed coursework: 25 %
- End-of-year examination: 50 %

Literature

UNIT 1

In this unit, students explore how structure, stylistic choices and language can be used in different literary forms and text types. Additionally they will look at different literary movements and genres and examine the assumptions and representations embedded in texts. Students will consider how points of view, experiences and contexts can shape the way we view and understand a text. Students will respond to different texts through close analysis, essays, debates, creative responses, multimedia responses and reading journal entries.

Outcomes

Students will be able to:

- Respond to a range of texts and produce written and verbal close analysis' examining how characters, settings and events shape a reader's response to a text
- Explore conventions common to a specific genre and explore ideas, concerns and representations within a text

UNIT 2

In this unit, students will engage with Aboriginal and Torres Strait Islander authors and creators and consider interconnectedness of place, culture and identity. Additionally, students will focus on historical, cultural and social contexts. They will consider how texts are a product of their time and examine the explicit and implicit meaning embedded within them. Students will learn to recognise that language has historical and cultural import.

Outcomes

Students will be able to:

- Reflect and explore on the voices, perspectives and knowledge of Aboriginal and Torres Strait Islander authors and creators.
- Analyse and respond to the representation of a specific time period and/or culture explored in a text and comment on the ideas and concerns of individuals and groups from that context

UNIT 3

In this unit students will consider how the form of a text shapes its meaning. Students will examine different text types and explore how the meaning of a text can change with its form. Additionally they will develop interpretations of a texts that examine how views, values and ideas are endorsed or challenged in literary texts. Students will then analyse other interpretations and consider how differing viewpoints enrich our understanding of a text.

Outcomes

Students will be able to:

- Analyse aspects of a text and draw on close analysis of textual detail to discuss how the meaning of a text changes when it is adapted to a different form
- Develop interpretations of a set text informed by ideas, views, values and a supplementary reading.

UNIT 4

In this unit students will focus on imaginative techniques that can be used for creating and recreating a literary work. Students will examine how authors can use language, form, voice and structure to develop representations of people and place. Furthermore, students will scrutinise the language, style, concerns and constructions of a text. They will write expressively to develop close analysis responses that cite detailed references to texts.

Outcomes

Students will be able to:

- Respond creatively to a text and comment critically on both the original text and creative response
- Analyse literary forms, features and language to present a coherent view of a whole text

ASSESSMENT

Units 1 and 2

The individual school will determine levels of achievement.

Units 3 and 4

School-assessed course work and examinations.

- Unit 3 school-assessed coursework: 25 %
- Unit 4 school-assessed coursework: 25 %
- Unit 3 and 4 examination: 50 %

ELECTIVE SUBJECTS

ARTS

The VCE Visual & Performing Arts Study Design comprises:

Units 1& 2, Units 3 & 4 Art: Creative Practice

Units 1& 2, Units 3 & 4 Visual Communication Design

Units 1& 2 Media

Units 1& 2, Units 3 & 4 Drama

Units 1& 2, Units 3 & 4 Music Performance

Units 1& 2, Units 3 & 4 Music Style and Composition

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

ART: CREATIVE PRACTICE

UNIT 1 – INTERPRETING ARTWORKS AND EXPLORING THE CREATIVE PRACTICE

In Unit 1 students use Experiential learning in Making and Responding to explore ideas using the Creative Practice. As the artist and audience, students consider their connection to artworks, and how their communication of ideas and presentation of artworks challenge, shape and influence viewer or audience perspectives.

They focus on the making of art and examine how artists communicate ideas and meaning in artworks. They examine artists in different societies, cultures and historical periods and develop their own interpretations and viewpoints about the meanings and messages of artworks.

Outcomes

1. Artists, artworks and audiences

On completion of this outcome the student will be able to discuss the practices of three artists, and apply the Structural Lens and the Personal Lens to analyse and interpret one artwork by each artist.

2. The Creative Practice

On completion of this outcome the student will be able to use the Creative Practice to develop and make visual responses informed by their exploration of personal interests and ideas.

3. Documenting and reflecting on the Creative Practice

On completion of this outcome the student should be able to document and evaluate the components of the Creative Practice used to make personal visual responses.

UNIT 2 – INTERPRETING ARTWORKS AND DEVELOPING CREATIVE PRACTICE

In Unit 2 students use Inquiry learning to investigate the artistic and collaborative practices of artists. They use the Cultural Lens, and the other Interpretive Lenses as appropriate, to examine artworks from different periods of time and cultures, and to explore the different ways that artists interpret and communicate social and personal ideas in artworks

Students explore the collaborative practices of artists and use the Creative Practice to make and present artworks. They develop visual responses based on their investigations, exploring the way historical and contemporary cultural contexts, ideas and approaches have influenced the artworks and the practices of the artists they investigate, as well as their own art practice.

Outcomes

1. The artist, society and culture

On completion of this outcome the student should be able to use the Cultural Lens, and the other Interpretive Lenses as appropriate, to analyse and compare the practices of artists and artworks from different cultures and times.

2. The collaborative Creative Practice

On completion of this outcome the student should be able to use the Creative Practice to explore social and cultural ideas or issues to make and present at least one finished artwork using collaborative approaches.

3. Documentation of collaboration using the Creative Practice

On completion of this outcome the student should be able to critically reflect on, evaluate and document their use of the Creative Practice to develop and make collaborative visual responses.

UNIT 3 – INVESTIGATION, IDEAS, ARTWORKS, AND THE CREATIVE PRACTICE

In this unit students use Inquiry and Project-based learning as starting points to develop a Body of Work. They explore ideas and experiment with materials, techniques and processes using the Creative Practice. The research of historical and contemporary artists is integral to students' use of the Creative Practice and informs the basis of their investigation.

Outcomes

1. Investigation and presentation

On completion of this unit the student should be able to develop personal ideas using research that examines one artwork and the practice of an artist, and produce at least one finished artwork using the Creative Practice.

2. Personal investigation using the Creative Practice

On completion of this unit the student should be able to apply and explore ideas and an area of personal interest using the Creative Practice.

UNIT 4 – INTERPRETING, RESOLVING AND PRESENTING ARTWORKS AND THE CREATIVE PRACTICE

In Unit 4 students continue to develop their art practice through Project-based and Inquiry learning as their research and exploration continues to support the development of their Body of Work. Throughout their research students study the practices of selected historical and contemporary artists to inform their own art practice.

Outcomes

1. Documentation and critique of the Creative Practice

On completion of this unit the student should be able to document their use of Creative Practice and present a critique to inform the refinement and resolution of a Body of Work.

2. Resolution and presentation of a Body of Work

On completion of this unit the student should be able to use the Creative Practice to resolve and present a Body of Work.

3. Comparison of artists, their practice and their artworks

On completion of this unit the student should be able to compare the practices of historical and contemporary artists, and use the Interpretive Lenses to analyse and interpret the meanings and messages of selected artworks.

ASSESSMENT

Units 1 and 2

The individual school will determine levels of achievement.

Units 3 and 4

School-assessed coursework and end-of-year examination.

- Unit 3 school assessed coursework: 10%
- Unit 4 school assessed coursework: 10%
- Units 3 & 4 school assessed task: 50%
- Units 3 & 4 end of year written examination: 30%

VISUAL COMMUNICATION DESIGN

There are no prerequisites for entry to Units 1, 2 and 3. Students must undertake Unit 3 prior to undertaking Unit 4. No Advanced Placements are available in this subject.

UNIT 1 – FINDING, REFRAMING AND RESOLVING DESIGN PROBLEMS

In this unit students are introduced to the practices and processes used by designers to identify, reframe and resolve human-centred design problems. They learn how design can improve life and living for people, communities and societies, and how understandings of good design have changed over time. Students learn the value of human-centred research methods, working collaboratively to discover design problems and understand the perspectives of stakeholders. They draw on these new insights to determine communication needs and prepare design criteria in the form of a brief.

Outcomes

1. Reframing design problems

On completion of this outcome the student should be able to use human-centred research methods to reframe a design problem and identify a communication need.

2. Solving communication design problems

On completion of this outcome the student should be able to create visual language for a business or brand using the Develop and Deliver stages of the VCD design process.

3. Design's influence and influences on design

On completion of this outcome the student should be able to develop a sustainable object, considering design's influence and factors that influence design.

UNIT 2 – DESIGN CONTEXTS AND CONNECTIONS

Unit 2 builds on understandings of visual communication practices developed in Unit 1. Students draw on conceptions of good design, human-centred research methods and influential design factors as they revisit the VCD design process, applying the model in its entirety. Practical tasks across the unit focus on the design of environments and interactive experiences.

Students adopt the practices of design specialists working in fields such as architecture, landscape architecture and interior design, while discovering the role of the interactive designer in the realm of user-experience (UX).

Outcomes

1. Design, place and time

On completion of this unit the student should be able to present an environmental design solution that draws inspiration from its context and a chosen design style.

2. Cultural ownership and design

On completion of this unit the student should be able to apply culturally appropriate design practices and an understanding of the designer's ethical and legal responsibilities when designing personal iconography.

3. Designing interactive experiences

On completion of this unit the student should be able to apply the VCD design process to design an interface for a digital product, environment or service.

UNIT 3 –VISUAL COMMUNICATION DESIGN PRACTICES

In this unit students explore and experience the ways in which designers work, while also analysing the work that they design. Through a study of contemporary designers practising in one or more fields of design practice, students gain deep insights into the processes used to design messages, objects, environments and/or interactive experiences. They compare the contexts in which designers work, together with their relationships, responsibilities and the role of visual language when communicating and resolving design ideas. Students also identify the obligations and factors that influence the changing nature of professional design practice, while developing their own practical skills in relevant visual communication practices.

Outcomes

1. Professional design practice

On completion of this unit the student should be able to compare the ways in which visual communication practices are used by contemporary designers, using research methods and practical exploration.

2. Design analysis

On completion of this unit the student should be able to compare and analyse design examples from selected field(s) of design practice, describing how aesthetic considerations contribute to the effective communication of information or ideas.

3. Design process: defining problems and developing ideas

On completion of this unit the student should be able to identify two communication needs for a client, prepare a brief and develop design ideas, while applying the VCD design process and design thinking strategies.

UNIT 4 –DELIVERING DESIGN SOLUTIONS

In this unit students continue to explore the VCD design process, resolving design concepts and presenting solutions for two distinct communication needs. Ideas developed in Unit 3, Outcome 3 are evaluated, selected, refined and shared with others for further review. An iterative cycle is undertaken as students rework ideas, revisit research and review design criteria defined in the brief. Manual and digital methods, media and materials are explored together with design elements and principles, and concepts tested using models, mock-ups or low-fidelity prototypes.

Outcomes

1. Design process: refining and resolving design concepts

On completion of this unit the student should be able to refine and resolve distinct design concepts for each communication need, and devise and deliver a pitch to communicate concepts to an audience or users, evaluating the extent to which these meet the requirements of the brief.

2. Presenting design solutions

On completion of this unit the student should be able to produce a design solution for each communication need defined in the brief, satisfying the specified design criteria.

ASSESSMENT

Units 1 and 2

The individual school will determine levels of achievement.

Units 3 and 4

School-assessed coursework and end-of-year examination.

- Unit 3 school-assessed coursework: 25%
- Unit 4 school-assessed task: 40 %
- End of year examination: 35%

MEDIA

VCE Media provides students with the opportunity to analyse media concepts, forms and products in an informed and critical way. Students consider narratives, technologies and processes from various perspectives, including an analysis of structure and features. They examine debates about the role of the media in contributing to and influencing society. Students integrate these aspects of the study through the individual design and production of their media representations, narratives and products.

UNIT 1 MEDIA FORMS, REPRESENTATION AND AUSTRALIA STORIES

Outcome

1. Media representations

On completion of this unit the student should be able to explain the construction of media representations in different products, forms and contexts, including how audiences engage with, consume and read these representations.

2. Media forms in production

On completion of this unit the student should be able to use the media production process to design, produce and evaluate media representations for specified audiences in a range of media forms.

3. Australian stories

On completion of this unit the student should be able to analyse how the structural features of Australian fictional and non-fictional narratives in two or more media forms engage, and are consumed and read by, audiences.

UNIT 2 NARRATIVE ACROSS MEDIA FORMS

Outcome

1. **Narrative, style and genre**

On completion of this unit the student should be able to analyse the style of media creators and producers and the influences of narratives on the audience in different media forms.

2. **Narratives in production**

On completion of this unit the student should be able to apply the media production process to create, develop and construct narratives.

3. **Media and Change**

On completion of this unit the student should be able to discuss the influence of new media technologies on society, audiences, the individual, media industries and institutions.

UNIT 3 NARRATIVE NARRATIVES AND PRE-PRODUCTION

Outcome

1. **Narratives and their context**

On completion of this unit the student should be able to analyse the construction of media narratives; discuss audience engagement, consumption and reading of narratives; and analyse the relationship between narratives and the contexts in which they are produced.

2. **Research, Development and experimentation**

On completion of this unit the student should be able to research and document aspects of a media form, codes, narrative conventions, style, genre, story and plot to inform the plan for a media production.

3. **Pre-production planning**

On completion of this unit the student should be able to develop and document a media pre-production plan demonstrating the student's concepts and intentions in a selected media form for a specified audience.

UNIT 4 MEDIA PRODUCTION, AGENCY AND CONTROL IN AND OF THE MEDIA

Outcomes

1. Media production

On completion of this unit the student should be able to produce, refine, resolve and distribute to a specified audience a media product designed in Unit 3.

2. Agency and control in the media

On completion of this unit the student should be able to use evidence, arguments and ideas to discuss audience agency, media influence, media regulation and ethical and legal issues in the media.

ASSESSMENT

Percentage contributions to the study score in VCE Media are:

- Units 3 and 4 School-assessed Coursework: 20 per cent
- Units 3 and 4 School-assessed Task: 40 per cent
- end-of-year examination: 40 per cent.

DRAMA

The study of Drama focuses on the creation and performance of characters and stories in naturalistic and non-naturalistic ways. Students draw on a range of stimulus material and playmaking techniques to develop and present devised work. Students also explore a range of performance styles and conventions, dramatic elements and stagecraft. They use performance and expressive skills to explore and develop role and character. They analyse the development of their own work and performances by other drama practitioners.

This study enables students to:

- develop an understanding of performance styles and conventions from a diversity of cultures
- explore the process used to develop the dramatic potential of stimulus material
- develop, through practice and analysis, an understanding of drama as a way of communicating stories and meaning
- manipulate dramatic elements and stagecraft in devising and performing dramatic works
- develop and refine expressive and performance skills
- devise, perform and evaluate solo and ensemble dramatic works

UNIT 1 – DRAMATIC STORYTELLING

Outcomes

1. Creating a devised performance

On completion of this unit the student should be able to devise and document solo and/or ensemble drama work/s based on experiences and/or stories.

2. Presenting a devised performance

On completion of this unit the student should be able to perform a devised drama work/s to an audience.

3. Analysing a devised performance

On completion of this unit the student should be able to analyse the development and performance to an audience of their non-naturalistic devised work.

4. Analysing drama performances presented by other practitioners

On completion of this unit the student should be able to analyse the portrayal of stories and characters in a drama performance by professional or other drama practitioners.

Assessment tasks for this unit are selected from the following:

Outcome 1

- demonstrate the use of play-making techniques to devise and rehearse a solo and/or ensemble drama work/s based on stories and/or characters
- document use of processes to create and develop stories and characters in drama. The documentation may be presented as:
 - – a paper-based journal
 - – an e-journal
 - – a journal that combines hard and soft copy components.

Outcome 2

Perform a solo and/or ensemble devised drama work/s that features stories and characters.

Outcome 3

Analyse the drama work created and performed in Outcomes 1 and 2 in one of the following formats:

- a written report
- an oral presentation
- a multimedia presentation
- responses to structured questions.

Outcome 4

Write an analysis in one of the following formats:

- a written report
- responses to structured questions.

UNIT 2 – NON- NATURALISTIC AUSTRALIAN DRAMA

Outcomes

1. Using Australia as inspiration

On completion of this unit the student should be able to devise and document the processes used to create a solo or ensemble non-naturalistic performance work.

2. Presenting a devised performance

On completion of this unit the student should be able to present a performance of a devised non- naturalistic work to an audience.

3. Analysing a devised performance

On completion of this unit the student should be able to analyse the creation, development and performance to an audience of their non-naturalistic devised work.

4. Analysing Australian drama performance

On completion of this unit the student should be able to analyse a performance of an Australian drama work.

ASSESSMENT

Outcome 1

- demonstrate the use of play-making techniques to devise and rehearse a devised non-naturalistic solo or ensemble drama work based on a person, an event, an issue, a place, an artwork, a text and/or an icon from a contemporary or historical Australian context
- document use of processes to create and develop stories and characters in drama. The documentation may be presented as:
 - – a paper-based journal
 - – an e-journal
 - – a journal that combines hard and soft copy components.

Outcome 2

Perform a solo and/or ensemble devised drama work/s that features stories and characters.

Outcome 3

Analyse the drama work created and performed in Outcomes 1 and 2 in one of the following formats:

- a written report
- an oral presentation
- a multimedia presentation
- responses to structured questions.

Outcome 4

Write an analysis in one of the following formats:

- a written report
- responses to structured questions.

UNIT 3 – DEvised NON-NATURALISTIC ENSEMBLE PERFORMANCE

Outcomes

1. Devising and presenting non-naturalistic ensemble performance

On completion of this unit the student should be able to develop and present character/s within a devised non-naturalistic ensemble performance.

2. Responding to devised ensemble performances

On completion of this unit the student should be able to analyse the use of processes, techniques and skills to create and present a devised ensemble performance.

3. Analysing non-naturalistic performance

On completion of this unit the student should be able to analyse and evaluate a non-naturalistic performance.

ASSESSMENT

Outcome 1

Assessment tasks

Development and presentation of character/s within an ensemble performance.

Analysis of the development and performance of character/s from the ensemble work developed for Outcome 1. The analysis may be presented in one of the following formats:

- a written report
- structured questions.

An analysis and evaluation of a play selected from the Unit 3 Playlist. The analysis may be presented in one of the following formats:

- a written report
- structured questions

*School-assessed Coursework for Unit 3 contributes 30 per cent.

Outcomes

Marks allocated*

Develop and present character/s within a devised non-naturalistic ensemble performance.

Outcome 2

Analyse use of processes, techniques and skills to create and present a devised ensemble performance.

Outcome 3

Analyse and evaluate a non-naturalistic performance.

Total marks

120, 80, 20, 20

UNIT 4 – NON-NATURALISTIC SOLO PERFORMANCE

Outcomes

1. Working with stimulus material

On completion of this unit the student should be able to devise a solo performance in response to given stimulus material and describe the non-naturalistic qualities of the performance.

2. Devising a non-naturalistic solo performance

On completion of this unit the student should be able to create, develop and perform a non-naturalistic drama solo in response to a prescribed structure.

3. Analysing devised non-naturalistic solo performance

On completion of this unit the student should be able to analyse and evaluate the creation, development and presentation of a devised non-naturalistic solo performance.

ASSESSMENT

Outcomes

Devise a solo performance in response to given stimulus material and describe the non-naturalistic qualities of the performance.

Analyse and evaluate the creation, development and presentation of a devised non-naturalistic solo performance.

A short written statement that identifies the non-naturalistic qualities of their response to the stimulus material.

And

A one to three minute presentation of a solo response to stimulus material.

A written report that uses the language of drama to analyse and evaluate the solo performance developed in Outcome 2.

Performance EXAM

The examination will be set by a panel appointed by the Victorian Curriculum and Assessment Authority. Key knowledge and key skills that underpin Unit 4 Outcome 2 are examinable.

Students will present a solo performance based on a prescribed structure selected from the set published annually by a panel appointed by the Victorian Curriculum and Assessment Authority and published in the VCE Drama Performance Examination Specifications. The performance will draw on knowledge and skills from Unit 4, Outcome 2.

Students will present the assessors with a written Statement of Intention of no more than 80–100 words. The Statement of Intention is not assessed.

Conditions

The performance examination will be completed under the following conditions:

- Duration: no more than seven minutes. The solo performance will be presented as a single uninterrupted performance.
- Date: October, on a date to be notified by the Victorian Curriculum and Assessment Authority.
- Victorian Curriculum and Assessment Authority examination rules will apply. Details of These rules are published annually in the *VCE and VCAL Administrative Handbook*.
- Assessors appointed by the Victorian Curriculum and Assessment Authority will mark the examination.

Contribution to final assessment

The performance examination will contribute 35 per cent.

Written EXAM

- Duration: one and a half hours.
- Date: end-of-year, on a date to be published annually by the Victorian Curriculum and Assessment Authority.
- Victorian Curriculum and Assessment Authority examination rules will apply. Details of These rules are published annually in the *VCE and VCAL Administrative Handbook*.
- Assessors appointed by the Victorian Curriculum and Assessment Authority will mark the examination.

Contribution to final assessment

The examination will contribute 25 per cent.

MUSIC PERFORMANCE

UNIT 1

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

Outcomes

1. On completion of this unit the student should be able to prepare and perform a practised program of group and solo works.
2. On completion of this unit the student should be able to demonstrate instrumental techniques used in performance of selected works, demonstrate unprepared performance skills and describe influences on their approach to performance.
3. On completion of this unit the student should be able to identify, re-create, notate and transcribe elements of music, and describe ways in which expressive elements of music may be interpreted.

UNIT 2

In this unit students build their performance and musicianship skills. They present performances of selected group and solo music works using one or more instruments. Students study the work of other performers through listening and analysis and use specific strategies to optimise their own approach to performance. They also study strategies for developing technical and expressive performance skills. They identify technical, expressive and stylistic challenges relevant to works they are preparing for performance and practise related technical work. They develop skills in performing previously unseen music and study specific concepts to build their musicianship knowledge and skills. Students also devise an original composition or improvisation.

Outcomes

1. On completion of this unit the student should be able to prepare and perform a musically engaging program of group and solo works.
2. On completion of this unit the student should be able to demonstrate instrumental techniques used in performance of selected works, demonstrate unprepared performance skills and describe influences on their approach to performance.
3. On completion of this unit the student should be able to identify, re-create, notate and transcribe elements of music, and describe how selected elements of music have been interpreted in performance.
4. On completion of this unit the student should be able to devise a composition or an improvisation that uses music language evident in work/s being prepared for performance.

UNIT 3

This unit prepares students to present convincing performances of group and solo works. In this unit students select a program of group and solo works representing a range of styles and diversity of character for performance. They develop instrumental techniques that enable them to interpret the works and expressively shape their performances. They also develop an understanding of performance conventions they can use to enhance their performances.

Students develop skills in unprepared performance, aural perception and comprehension, transcription, music theory and analysis.

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

Outcomes

1. On completion of this unit the student should be able to present an informed, accurate and expressive performance of a program of group and solo works.
2. On completion of this unit the student should be able to demonstrate performance techniques, technical work and exercises, and describe their relevance to the performance of selected group and/or solo works, and present an unprepared performance.
3. On completion of this unit the student should be able to identify, re-create, notate and transcribe short excerpts of music, and discuss the interpretation of expressive elements of music in pre-recorded works.

UNIT 4

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

Outcomes

1. On completion of this unit the student should be able to prepare and present accurate and expressive performances of informed interpretations of a program/s of group and solo works.
2. On completion of this unit the student should be able to demonstrate performance techniques, and technical work and exercises, and discuss their relevance to the performance of selected group and/or solo works, and present an unprepared performance.
3. On completion of this unit the student should be able to identify, re-create, notate and transcribe short excerpts of music, and analyse the interpretation of expressive elements of music in pre-recorded works.

ASSESSMENT

Units 1 and 2

Assessment tasks for these units are:

- Performances of three works including at least one group work and one solo work with accompaniment as appropriate. The duration of the performances will vary depending on the works selected.
- A demonstration of technical work and exercises, for example an assessment task that includes a test or other performance context.
- An explanation of how selected technical work and exercises support the student's development as an instrumentalist and their preparation of works performed for

Outcome 1. The explanation may be presented in one or more of the following formats

- o oral
- o multimedia
- o written
- A performance of unprepared material.
- Aural, written and practical tasks, for example
 - o a folio of exercises

or

- o a test
- o a workbook of class activities.
- Composition and/or improvisation exercises and accompanying documentation that describes use of music language in the exercise/s. The documentation may be presented in one or more of the following formats
 - o multimedia
 - o written.

Units 3 and 4

- Units 3 and 4 School-assessed Coursework: 30 per cent
- External end-of-year performance examination: 50 per cent
- External end-of-year aural and written examination: 20 per cent

MUSIC STYLE AND COMPOSITION

UNIT 1

In this unit students explore and develop their understanding of the diverse practice of music creators working in different times, places and traditions. As they listen and respond to a wide range of music they become familiar with ways composers/music creators treat elements of music and use compositional devices to create music works that communicate their music ideas.

Students analyse selected works from three distinct music styles including music that is not from the Western art music or popular repertoires, and, consider the role that context plays in the creation of these works. They compose and/or arrange brief creative exercises in response to their understanding of the music and the creative processes they have studied.

Outcomes

1. On completion of this unit the student should be able to identify and describe characteristics of music and describe their subjective responses to music.
2. On completion of this unit the student should be able to identify and describe music characteristics and contexts of selected works.
3. On completion of this unit the student should be able to compose and/or arrange short music works and describe the creative processes used.

UNIT 2

In this unit students extend their understanding of the diverse practices of music creators as they investigate ways composers and/or creators treat elements of music and use compositional devices to create effects and elicit responses in multi-disciplinary forms. As students listen and respond to music from a wide range of music styles, they improve their familiarity with elements of music and ways composers/music creators treat these elements and use compositional devices to create specific effects. Students analyse specific multi-disciplinary works that combine music and non music elements and investigate how music combines with these other elements to achieve specific effects and elicit responses. They compose and/or arrange music for a multi-disciplinary work of their choice in response to their understanding of the music and the creative processes they have studied.

Outcomes

1. On completion of this unit the student should be able to identify and describe ways in which elements of music and compositional devices are used to create effects and elicit responses.
2. On completion of this unit the student should be able to describe characteristics of music in two works that combine music and non-music features, and discuss the contexts and processes used to create the music.
3. On completion of this unit the student should be able to create music for a work that combines music and non- music components, and describe the creative processes used.

ASSESSMENT

Unit 1

For this unit, students are required to demonstrate three outcomes. As a set these outcomes encompass the areas of study in the unit.

Suitable tasks for assessment may be selected from the following:

- a folio of four to eight responses based on aural analysis of excerpts of music from a range of styles and/or traditions, including music that is not representative of the Western art or popular music traditions. Responses may be presented in one or more the following formats:

- – written
- – oral
- – multimedia including a written component.
 - aural and visual analysis and description of characteristics of selected works presented in one of the following formats:
- – a report
- – structured questions
- – a multimedia presentation
- – an annotated visual report
- – an oral presentation.
 - a folio that includes at least two creative responses and accompanying documentation.

Unit 2

Suitable tasks for assessment may be selected from the following:

- a folio of four to eight responses based on aural analysis of excerpts of music from a range of styles and/or traditions, including music used in multi-disciplinary art works. Responses may be:
 - written
 - Oral
 - in a multimedia format including a written component.
- aural and visual analysis and description of characteristics of selected works, and discussion of their context/s and the processes used to create them, presented in one of the following formats:
 - a report
 - structured questions
 - a multimedia presentation
 - an annotated visual report
 - an oral presentation.
 - a folio that includes music for a work that has musical and non-music components and accompanying documentation.

HEALTH AND PHYSICAL EDUCATION

The VCE Health and Physical Education Study Design comprises:

Units 1 & 2 , Units 3 & 4 Physical Education

Units 1 & 2, Units 3 & 4 Health and Human Development

PHYSICAL EDUCATION

This elective has a material levy. This levy is passed by School Council each year and will be on the levy sheet at the end of the year.

There are no prerequisites for entry to Units 1, 2 and 3. Students must undertake Unit 3 prior to undertaking Unit 4. Units 1 to 4 are designed to a standard equivalent to the final two years of secondary education.

Each unit involves at least 50 hours of scheduled classroom instruction.

VCE Physical Education explores the complex interrelationships between anatomical, biomechanical, physiological and skill acquisition principles to understand their role in producing and refining movement, and examines behavioural, psychological, environmental and sociocultural influences on performance and participation in physical activity.

The study of VCE Physical Education enables students to integrate a contemporary understanding of the theoretical underpinnings of performance and participation in physical activity with practical application. Through engagement in physical activities, VCE Physical Education enables students to develop the knowledge and skills required to critically evaluate influences that affect their own and others' performance and participation in physical activity.

This study equips students with the appropriate knowledge and skills to plan, develop and maintain their involvement in physical activity, sport and exercise across their lifespan and to understand the physical, social, emotional and cognitive health benefits associated with being active. The study also prepares students for employment and/or further study at the tertiary level or in vocational education and training settings in fields such as exercise and sport science, health science, education, recreation, sport development and coaching, health promotion and related careers.

The study is made up of four units:

Unit 1: The human body in motion

Unit 2: Physical Activity, sport and society

Unit 3: Movement skills and energy for physical activity

Unit 4: Training to improve performance

UNIT 1 – THE HUMAN BODY IN MOTION

AREA OF STUDY 1: How does the musculoskeletal system work to produce movement?

In this unit students explore how the musculoskeletal and cardiorespiratory systems work together to produce movement. Through practical activities students explore the relationships between the body systems and physical activity, sport and exercise, and how the systems adapt and adjust to the demands of the activity. Students investigate the role and function of the main structures in each system and how they respond to physical activity, sport and exercise. They explore how the capacity and functioning of each system acts as an enabler or barrier to movement and participation in physical activity.

AREA OF STUDY 2: How does the cardiorespiratory system function at rest and during physical activity?

In this area of study students examine the cardiovascular and respiratory systems of the human body and how the heart, blood vessels and lungs function at rest and during physical activity.

Through practical activities students explore the structure and function of the cardiorespiratory system and their contributions and interactions during physical activity, sport and exercise.

Enablers and barriers to the capacity and functioning of the cardiovascular and respiratory systems are investigated from a sociocultural, environmental and physical perspective.

Students explore the ethical and performance considerations of the use of a variety of legal and illegal practices and substances specific to each system.

Outcomes

1: On completion of this unit students should be able to collect and analyse information from, and participate in, a variety of practical activities to explain how the musculoskeletal system functions and its limiting conditions, and evaluate the ethical and performance implications of the use of practices and substances that enhance human movement.

2: On completion of this unit students should be able to collect and analyse information from, and participate in, a variety of practical activities to explain how the cardiovascular and respiratory systems function and the limiting conditions of each system and discuss the ethical and performance implications of the use of practices and substances to enhance the performance of these two systems.

UNIT 2 – PHYSICAL ACTIVITY, SPORT AND SOCIETY

AREA OF STUDY 1: What are relationships between physical activity, sport, health and society?

In this area of study students focus on the role of physical activity, sport and society in developing and promoting healthy lifestyles and participation in physical activity across the lifespan. Students explore the social, cultural and historical influences on participation in various forms of physical activity, including sport. They investigate at the individual and population levels the physical, social, mental and emotional benefits of participation in regular physical activity and the potential negative physical, social, mental and emotional consequences of physical inactivity and sedentary behaviour, including hypokinetic diseases such as Type 2 diabetes and obesity.

AREA OF STUDY 2: What are contemporary issues associated with physical activity and sport?

In this area of study students focus on a range of contemporary issues associated with physical activity and/or sport at the local, national and global level. They investigate in detail one issue relevant to physical activity and/or sport. Possible issues suitable for investigation include declining levels of physical activity across the lifespan, active transport, gender equity in physical activity and sport, cultural diversity and inclusion in physical activity, risk management and safety in physical activity and sport, children and competitive sport, the community and recreation, access to physical activity for population groups such as children, rural and remote communities, cultural groups, Aboriginal and Torres Strait Islanders and people with disabilities.

Outcomes

1: On completion of this unit the student should be able to collect and analyse data related to individual and population levels of participation in physical activity and sedentary behaviour to create, undertake and evaluate an activity plan that meets the physical activity and sedentary behaviour guidelines for an individual or a specific group.

2: On completion of this unit the student should be able to apply a social-ecological framework to research, analyse and evaluate a contemporary issue associated with participation in physical activity and/or sport in a local, national or global setting.

UNIT 3 – MOVEMENT SKILLS AND ENERGY FOR PHYSICAL ACTIVITY

AREA OF STUDY 1: How are movement skills improved?

How are movement skills improved? In this area of study students examine the biomechanical and skill acquisition principles that can be applied when analysing and improving movement skills used in physical activity and sport. Through coaching and involvement in a variety of practical activities, students investigate and analyse movements to develop an understanding of how the correct application of biomechanical and skill acquisition principles leads to greater efficiency and accuracy in movement skills.

AREA OF STUDY 2: How does the body produce energy?

Students explore the various systems and mechanisms associated with the production of energy required for human movement. They consider the cardiovascular, respiratory and muscular systems and roles of each in supplying oxygen and energy to the working muscles.

Students examine the way in which energy for activity is produced by the three energy systems and the associated fuels used for activities of vary intensity and duration. They also look at fatigue and recovery strategies.

Outcomes

1: On completion of this unit the student should be able to collect and analyse information from, and participate in, a variety of physical activities to develop and refine movement skills from a coaching perspective, through the application of biomechanical and skill acquisition principles.

2: On completion of this unit the student should be able to use data collected in practical activities to analyse how the major body and energy systems work together to enable movements to occur, and explain the factors causing fatigue and suitable recovery strategies.

UNIT 4 – TRAINING TO IMPROVE PERFORMANCE

AREA OF STUDY 1: What are the foundations of an effective training program?

What are the foundations of an effective training program? In this area of study students focus on the information required to form the foundation of an effective training program. They use data from an activity analysis and determine the fitness requirements of a selected physical activity. They also use data collected from participating in a series of fitness tests to inform the design of the training program. Students determine the relevant factors that affect each of the fitness components and conduct a series of fitness tests that demonstrate correct and ethical implementation of testing protocols and procedures.

AREA OF STUDY 2: How is training implemented effectively to improve fitness?

How is training implemented effectively to improve fitness? In this area of study students focus on the implementation and evaluation of training principles and methods from a practical and theoretical perspective. They consider the manner in which fitness can be improved through the application of appropriate training principles and methods. Students identify and consider components of an exercise training session, they monitor, record and adjust training. Students explain the chronic adaptations to the cardiovascular, respiratory and muscular systems.

Outcomes

1: On completion of this unit the student should be able to analyse data from an activity analysis and fitness tests to determine and assess the fitness components and energy system requirements of the activity

2: On completion of this unit the student should be able to participate in a variety of training methods, and design and evaluate training programs to enhance specific fitness components.

ASSESSMENT

Units 1 and 2

Diamond Valley College will determine the level of achievement. A selection of levels of achievement using grades, descriptive statements or other indicators may be used.

Units 3 and 4

School-assessed coursework and examination:

- Unit 3 school-assessed coursework: 25 %
- Unit 4 school-assessed coursework: 25 %
- End-of-year examination: 50 %

HEALTH AND HUMAN DEVELOPMENT

There are no prerequisites for Units 1, 2 and 3. Students must undertake Unit 3 prior to Unit 4. It is highly recommended that students satisfactorily complete Units 1 and 2 if they intend undertaking Units 3 and 4. Each unit involves at least 50 hours of scheduled classroom instruction.

The study is made up of four units

Unit 1: Understanding health and wellbeing

Unit 2: Managing health and development

Unit 3: Australia's health in a globalised world

Unit 4: Health and human development in a global context

UNIT 1 – UNDERSTANDING HEALTH AND WELLBEING

AREA OF STUDY 1

Health perspective and influences

In this area of study students consider the influence of age, culture, religion, gender and socioeconomic status on perceptions of and priorities relating to health and wellbeing. Students will look at measurable indicators of population health, and at data reflecting the health status of Australians.

AREA OF STUDY 2

Health and nutrition

In this area of study students investigate the roles and sources of major nutrients and the use of food selection models and other tools to promote healthy eating. Students will also look at the health and wellbeing consequences of dietary imbalance, especially for youth, and consider the social, cultural and political factors that influence the food practices of and food choices made by youth. Students will develop strategies for building health literacy and evaluating nutrition information from various sources, including advertisements and social media.

AREA OF STUDY 3

Youth health and wellbeing

In this area of study students focus on the health and wellbeing of Australia's youth, and conduct independent research into a selected area of interest. Students will identify major health inequalities among Australian's youth and reflect on the causes. Students will apply research skills to find out what young people are most focused on and concerned about with regards to health and wellbeing. Students will inquire into how governments and organisations develop and implement youth health programs, and consider the use of health data and the influence of community values and expectations.

Outcomes

1. On completion of this unit the student should be able to explain multiple dimensions of health and wellbeing, explain indicators used to measure health status and analyse factors that contribute to variations in health status of youth.
2. On completion of this unit the student should be able to apply nutritional knowledge and tools to the selection of food and the evaluation of nutritional information.
3. On completion of this unit the student should be able to interpret data to identify key areas for improving youth health and wellbeing, and plan for action by analysing one particular area in detail.

UNIT 2 – MANAGING HEALTH AND DEVELOPMENT

AREA OF STUDY 1

Developmental transitions

Students consider perceptions of what it means to be a youth and an adult and investigate the expected physical and social changes. They inquire into factors that influence both the transition from youth to adulthood and later health status. Students consider the characteristics of respectful, health relationships. Students will investigate the factors that contribute to development, health and wellbeing during the prenatal, infancy and childhood stages of the lifespan.

AREA OF STUDY 2

Health care in Australia

The focus of this area of study is the development of students' understanding of the Australian health care system. They inquire into equity of access to health services, as well as the rights and responsibilities of individuals receiving care. Students will research the range of health services in their communities and suggest how to improve health and wellbeing outcomes and health literacy in Australia. They will explore a range of issues associated with the use of new and emerging health procedures and technologies such as reproductive technologies, artificial intelligence, robotics, nanotechnology, three dimensional printing of body parts and use of stem cells.

Outcomes

1. On completion of this unit the student should be able to explain developmental changes in the transitions from youth to adulthood, analyse factors that contribute to healthy development during prenatal and early childhood stages of the lifespan and explain health and wellbeing as an intergenerational concept.
2. On completion of this unit the student should be able to describe how to access Australia's health system, explain how it promotes health and wellbeing in their local community, and analyse a range of issues associated with the use of new and emerging health procedures and technologies.

UNIT 3 – AUSTRALIA'S HEALTH IN A GLOBALISED WORLD

AREA OF STUDY 1

Understanding health and wellbeing

In this area of study students explore health and wellbeing and illness as complex, dynamic and subjective concepts. Students inquire into the WHO's prerequisites for health and wellbeing and reflect on both the universality of public health goals and the increasing influence of global conditions on Australians. Students develop their understanding of the indicators used to measure and evaluate health status, and the factors that contribute to variations between population groups in Australia.

AREA OF STUDY 2

Promoting health and wellbeing

This area of study looks at different approaches to public health over time, with an emphasis on changes and strategies that have succeeded in improving health and wellbeing. Students examine the progression of public health in Australia since 1900, noting global changes and influences such as Ottawa Charter for Health Promotion and the general transition of focus from the health and wellbeing of individuals to that of populations. Students will investigate the Australian health system and its role in promoting health and wellbeing.

Outcomes

1. On completion of this unit the student should be able to explain the complex, dynamic and global nature of the health and wellbeing, interpret and apply Australia's health status data and analyse variations in health status.
2. On completion of this unit the student should be able to explain changes to public health approaches, analyse improvements in population health over time and evaluate health promotion strategies.

UNIT 4 – HEALTH AND HUMAN DEVELOPMENT IN A GLOBAL CONTEXT

AREA OF STUDY 1

Health and wellbeing in a global context

This area of study explores similarities and differences in major burdens of disease in low, middle and high income countries, including Australia. Students investigate a range of factors that contribute to health inequalities and study the concepts of sustainability, human development and the Human Development Index to further their understanding of health in a global context.

AREA OF STUDY 2

Health and the Sustainable Development Goals

This area of study looks at the rationale, objectives and interdependencies of the UN's SDGs, focusing on their promotion of health and wellbeing and human development. Students investigate the priorities and work of the WHO and evaluate Australia's aid program and the role of non government organisations, selecting one aid program for detailed research and analysis.

Outcomes

1. On completion of this unit the student should be able to analyse similarities and differences in health status and burden of disease globally and the factors that contribute to differences in health and wellbeing.
2. On completion of this unit the student should be able to analyse relationships between the SDGs and their role in the promotion of health and human development, and evaluate the effectiveness of global aid programs.

ASSESSMENT

Units 1 and 2

Diamond Valley College will determine the level of achievement. A selection of levels of achievement using grades, descriptive statements or other indicators may be used.

Units 3 and 4

School-assessed coursework and examination:

- Unit 3 school-assessed coursework: 25%
- Unit 4 school-assessed coursework: 25%
- End-of-year examination: 50%

HUMANITIES

The VCE Humanities Study Design comprises:

Units 1 & 2 and Units 3 & 4 Business Management

Units 1 & 2 and Units 3 & 4 Legal Studies

Units 1 & 2 Australian History

Units 1 & 2 Philosophy

Units 3 & 4 History: Revolutions

BUSINESS MANAGEMENT

The study of Business Management leads to opportunities across all facets of the business and management field such as small business ownership, project management, human resource management, operations management and executive management. It introduces students to the world of entrepreneurs and start ups right through to large scale and multi-national organisations. Further study can lead to specialisation in areas such as marketing, public relations, entrepreneurship and event management.

VCE Business Management examines the ways businesses manage resources to achieve objectives, from the first idea for a business concept, to planning and establishing a business, through to the day-to-day management of a business. It also considers changes that need to be made to ensure continued success of a business in a dynamically changing world. Students develop an understanding of the complexity of the challenges facing decision makers in managing businesses.

Students learn to propose and evaluate alternative strategies in establishing and maintaining a business. Students develop knowledge and skills that enhance their confidence and ability to participate effectively as socially responsible and ethical members, managers and leaders of the business community. Just as importantly as informed citizens, consumers and investors. Business Management comprises four units of study.

There are no prerequisites for entry to Units 1, 2 and 3. Students must undertake Unit 3 prior to undertaking Unit 4. Units 1 to 4 are designed to a standard equivalent to the final two years of secondary education.

UNIT 1 – PLANNING A BUSINESS

This unit looks at how businesses are formed and the conditions under which new business ideas can emerge and be converted into reality. Students explore the factors affecting business ideas and the internal and external environments within which businesses operate, and the effect of these on planning a business.

Outcomes

1. The Business Idea. On completion of this unit the student should be able to describe a process for creating and developing a business idea, and explain how innovative and entrepreneurial practices can contribute to the national economy and social wellbeing.
2. Internal Business Environment and Planning. On completion of this unit the student should be able to describe the internal business environment and analyse how factors from within it may affect business planning.
3. External Business Environment and Planning. On completion of this unit the student should be able to describe the external environment of a business and explain how the macro and operating factors within it may affect business planning.

UNIT 2 – ESTABLISH A BUSINESS

Examines the environments within which businesses operate. The elements outside a business that may act as pressures on the operations of a business. Factors such as legal, political, social, economic, technological, global and corporate social responsibility factors. The effects these may have on the business decisions. Students investigate how the internal environment relates to the external environment and the effects of this relationship on planning a business.

Outcomes

1. Legal Requirements and Financial Considerations. On completion of this unit the student should be able to outline the key legal requirements and financial record keeping considerations when establishing a business, and explain the importance of establishing effective policies and procedures to achieve compliance with these requirements.
2. Marketing a Business. On completion of this unit the student should be able to explain how establishing a customer base and a marketing presence supports the achievement of business objectives, analyse effective marketing and public relations strategies and apply these strategies to business-related studies.
3. Staffing a Business. On completion of this unit the student should be able to discuss the importance of staff to a business, discuss the staffing needs for a business, and evaluate staff-management strategies from both an employer and staff perspective.

UNIT 3 – MANAGING A BUSINESS

Students investigate how large-scale organisations operate. Students examine the environment (both internal and external) in which large-scale organisations conduct their business, and then focus on aspects of individual business' internal environment and how the operations of the business are managed. Students develop an understanding of the complexity and challenge of managing large-scale organisations. They then have the opportunity to compare theoretical perspectives with practical applications.

Outcomes

1. Discuss and analyse the key characteristics of businesses, their stakeholders, management styles and skills.
2. Explain theories of motivation and apply them to a range of contexts, and evaluate strategies related to the management of employees.
3. Discuss and analyse strategies related to operations management.

UNIT 4 – TRANSFORMING A BUSINESS

This unit continues the examination of corporate management. It commences with a focus on the human resource management function. Students learn about the key aspects of this function and strategies used to most effectively manage human resources. The unit concludes with analysis of the management of change. Students learn about key change management processes and strategies and are provided with the opportunity to apply these to a contemporary issue of significance.

Outcomes

1. Analyse the use of key performance indicators and explain the driving and restraining forces for change.
2. Discuss the importance of effective management strategies and leadership in relation to change.

ASSESSMENT

Units 3 and 4

The student's performance on each outcome is assessed using one or more of the following:

- a case study
- structured questions
- an essay
- a report
- a media analysis case study

Unit 3 school assessed course work: 25 %

Unit 4 school assessed course work: 25 %

Unit 3 and 4 examination: 50 %

LEGAL STUDIES

VCE Legal Studies examines the institutions and principles which are essential to Australia's legal system. Students develop an understanding of the rule of law, law-makers, key legal institutions, rights protection in Australia, and the justice system. Legal Studies is essential for anyone motivated to pursue any career in the justice and legal industries.

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

UNIT 1 – GUILT AND LIABILITY

In this unit students develop an understanding of legal foundations, such as the different types and sources of law and the existence of a court hierarchy in Victoria. Students investigate key concepts of criminal law and civil law and apply these to actual and/or hypothetical scenarios to determine whether an accused may be found guilty of a crime, or liable in a civil dispute. In doing so, students develop an appreciation of the way in which legal principles and information are used in making reasoned judgments and conclusions about the culpability of an accused, and the liability of a party in a civil dispute.

Outcomes

1. Describe the main sources and types of law, and assess the effectiveness of laws.
2. Explain the purposes and key concepts of criminal law, and use legal reasoning to argue the criminal culpability of an accused based on actual and/or hypothetical scenarios.
3. Explain the purposes and key concepts of civil law, and apply legal reasoning to argue the liability of a party in civil law based on actual and/or hypothetical scenarios.

UNIT 2 – SANCTIONS, REMEDIES AND RIGHTS

This unit examines the enforcement of criminal law and civil law, the methods and institutions that may be used to determine a criminal case or resolve a civil dispute, and the purposes and types of sanctions and remedies and their effectiveness. Students undertake a detailed investigation of two criminal cases and two civil cases from the past four years to form a judgment about the ability of sanctions and remedies to achieve the principles of justice. Students develop their understanding of the way rights are protected in Australia and in another country, and possible reforms to the protection of rights.

Outcomes

1. Explain key concepts in the determination of a criminal case, and discuss the principles of justice in relation to the determination of criminal cases, sanctions and sentencing approaches.
2. Explain key concepts in the resolution of a civil dispute, and discuss the principles of justice in relation to the resolution of civil disputes and remedies.
3. Evaluate the ways in which rights are protected in Australia, compare this approach with that adopted by another country and discuss the impact of an Australian case on the rights of individuals and the legal system.

UNIT 3 – RIGHTS AND JUSTICE

Students examine the methods and institutions in the 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 Victorian legal institutions and bodies available to assist with cases. Students explore matters 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.

Outcomes

1. Explain the rights of the accused and of victims in the criminal justice system, discuss the means used to determine criminal cases and evaluate the ability of the criminal justice system to achieve the principles of justice.
2. Analyse the factors to consider when initiating a civil claim, discuss the institutions and methods used to resolve civil disputes and evaluate the ability of the civil justice system to achieve the principles of justice.

UNIT 4 – THE PEOPLE AND THE LAW

Students explore how the Australian Constitution establishes the law-making powers of the Commonwealth and state parliaments, and 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 law reform.

Outcomes

1. Describe and evaluate the effectiveness of institutions for the resolution of civil disputes and the adjudication of criminal cases and of alternative dispute resolution methods.
2. Explain the elements of an effective legal system, and evaluate the processes and procedures for the resolution of criminal cases and civil disputes and discuss their effectiveness.

ASSESSMENT

Units 1 and 2

The student's performance on each outcome will be assessed using one or more of the following:

- Court Visit
- Prison visit and report
- Structured Assignment
- Folio and Reports
- Case Study
- Test
- Annotated visual display
- Investigation of actual court cases
- Structured Assignment
- Action plan and report
- Audio or Visual Presentation
- Interview and report

Units 3 and 4

The student's performance on each outcome will be assessed using one or more of the following:

- a case study
- structured questions
- an essay
- a report in written format
- a report in multimedia format
- a folio of exercises.

School assessed course work and end-of-year examination.

- Unit 3 school assessed course work: 25 %
- Unit 4 school assessed course work: 25 %
- Unit 3 and 4 examination: 50 %

MODERN HISTORY (UNITS 1 & 2)

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

History involves inquiry into human action in the past, to make meaning of the past using primary sources as evidence. As historians ask new questions, revise interpretations or discover new sources, fresh understandings come to light.

Although history deals with the particular – specific individuals and key events – the potential scope of historical inquiry is vast and formed by the questions that historians pursue, the availability of sources and the capacity of historians to interpret those sources. VCE History reflects this range of inquiry by enabling students to engage with a range of times, people, places and ideas.

UNIT 1 – Change and conflict

The period after World War One was characterised by significant change in the contrasting decades of the 1920s and 1930s. New fascist governments used the military and propaganda to impose controls on the way people lived, to exclude particular groups of people and to silence criticism. In Germany, the persecution of the Jewish people became intensified. In the USSR, millions of people were forced to work in state-owned factories and farms and had limited personal freedom. Japan became increasingly militarised and anti-western. In the USA, the consumerism and material progress of the 1920s was tempered by the Great Crash of 1929. Writers, artists, musicians, choreographers and filmmakers reflected, promoted or resisted political, economic and social changes.

Topics studied include:

- The effects of World War 1
- Rights and Responsibilities: political and economic privileges
- Peaks and Troughs: the roaring twenties and depression in America
- Conflict and the causes of World War Two including Adolf Hitler's National Socialist (Nazi) Party gaining power in Germany

Outcomes

1. On completion of this unit the student should be able to explain the consequences of the peace treaties which ended World War One, the impact of ideologies on nations and the events that led to World War Two.
2. On completion of this unit the student should be able to explain patterns of social life and cultural change in one or more contexts, and analyse the factors which influenced changes to social life and culture, in the inter-war years.

UNIT 2 – The Changing World Order

Students focus on the ways in which traditional ideas, values and political systems were challenged and changed by individuals and groups in a range of contexts during the period 1945 to 2000. Students explore the causes of significant political and social events and movements, and their consequences for nations and people. They investigate the establishment of the United Nations in 1945 and The Universal Declaration of Human Rights. Major events such as the competing ideologies of the Cold War as well as the development of new countries that gain independence are researched. Students also examine the rise of social movements that challenged existing values and traditions, such as the civil rights movement in America, feminism, assassinations of leaders and environmental movements.

Topics studied Include:

- Cold War: ideologies and hot spots
- War and Peace
- Protest Movements and Social Development
- Equality and Opportunity
- Leaders and Dictators

Outcomes

1. On completion of this unit students should be able to explain the causes of the Cold War and analyse its consequences on nations and people.
2. On completion of this unit the student should be able to explain the causes and nature of challenge and change in relation to two selected contexts in the second half of the twentieth century and analyse the consequences for nations and people.

ASSESSMENT

Units 1 and 2

The student's performance on each outcome is assessed using one or more of the following:

- Depth historical inquiry
- Oral presentations
- Multimedia presentations
- Analytical exercises
- Reports, an essay and exams.
- Film reviews

PHILOSOPHY: (UNITS 1 & 2)

There are no prerequisites for entry to Units 1, 2 and 3. Students must undertake Unit 3 and Unit 4 as a sequence.

VCE Philosophy contains a broad introduction to western philosophy and its methods of inquiry. It explores themes and debates within metaphysics, epistemology (philosophy of knowledge) and value theory, as well as techniques of reasoning and argument drawn from formal and informal logic. It investigates human nature through questions about the relationship between body and mind, and personal identity, leading to the examination of the good life.

Students will develop and refine critical and creative thinking skills. VCE Philosophy explores ideas and questions relating to diverse fields including the humanities, sciences, mathematics and the arts. It is a challenging and stimulating study, which nurtures curiosity, problem-solving skills, open-mindedness and intellectual rigour.

HISTORY: REVOLUTIONS (UNITS 3 & 4)

In Units 3 and 4 Revolutions students investigate the significant historical causes and consequences of political revolution. In Unit 3 student will study the American Revolution and in Unit 4 students will study the Chinese Revolution.

In these units, students develop an understanding of the complexity and multiplicity of causes and consequences in the revolutionary narrative. They construct an argument about the past using primary sources as evidence and evaluate the extent to which the revolution brought change to the lives of people.

Students will build on transferable skills. It allows students to improve their writing and critical thinking abilities, all of which can help support students in a range of subjects.

Area of Study 1

Students analyse the long-term causes and short-term triggers of revolution. They evaluate how revolutionary outbreaks are caused by the interplay of significant events, ideas, individuals and popular movements and assess how these were directly or indirectly influenced by the social, political, economic and cultural conditions. Students will also analyse significant events and evaluate how particular conditions profoundly influenced and contributed to the outbreak of revolution.

Unit 3 – The American Revolution

Outcome

1. On completion of this unit the student should be able to analyse the causes of revolution, and evaluate the contribution of significant events, ideas, individuals and popular movements.
2. On completion of this unit the student should be able to analyse the consequences of revolution and evaluate the extent of continuity and change in the post-revolutionary society.

Unit 4 – The Chinese Revolution

Outcomes

3. On completion of this unit the student should be able to analyse the causes of revolution, and evaluate the contribution of significant events, ideas, individuals and popular movements.
4. On completion of this unit the student should be able to analyse the consequences of revolution and evaluate the extent of continuity and change in the post-revolutionary society.

ASSESSMENT

- a historical inquiry task
- an analysis of primary sources

- an evaluation of historical interpretations
- an essay.

ITALIAN

One language sets you in a corridor for life. Two languages opens every door along the way.” – Frank Smith

Italian is a popular subject choice at the VCE level. Apart from the obvious advantage of boosting the final ENTER score, it provides students with the opportunity of mastering a second language and making real connections with other places in the world. In addition, students may be eligible to receive the VCE (Baccalaureate) if they choose Italian along with English, Maths Methods or Specialist Maths. Tertiary institutions like universities, have indicated that they strongly support initiatives that encourage students to study a language and higher-level mathematics in VCE.

Students also have the opportunity to experience Italy live during the Study Tour of Italy (which is organised every two years) and participate in activities at a high school in Italy.

The 4 units of study cover topics like the use of technology and social media in Italy and Australia and the study of different regional dishes.

UNIT 1 – ITALIAN

This unit involves students extending their language skills through developing the capacity to speak and write effectively for a range of purposes and audiences in a variety of ways.

Students are required to maintain an organised collection of their course work in the form of a workbook/technological folio which includes a variety of written tasks, oral practice tasks, listening and reading comprehension tasks. There are three areas of study: 1) Interpersonal communication 2) Interpretive communication and 3) Presentational communication.

Some possible topics to be covered in Year 11 Italian (Units 1&2) are:

1. Recent Italian migration
2. Social media and technology
3. Future ambitions
4. Relationships (family and friends)

Students also participate in excursions, Italian club, eating Italian food and playing online games, for example, kahoot.it which revises their work and encourages a fun and interactive way to learn Italian.

Outcomes

The following are the three outcomes which need to be assessed in Unit 1:

- 1 – To be able to exchange meaning in a spoken interaction in Italian. For example, to participate in a conversation, role-play or interview.
- 2 – To be able to interpret information from two texts on the same subtopic presented in Italian, and respond in writing in Italian and in English. For example, to write a film review.
- 3 – To be able to present information, concepts and ideas in writing in Italian on the selected subtopic and for a specific audience and purpose. For example, to create and write a power point presentation or to write a children's story.

UNIT 2 – ITALIAN

This unit continues to build on the knowledge and skills acquired in Unit 1. Students develop an understanding of aspects of language and culture through the three areas of study: 1) Interpersonal communication 2) Interpretive communication and 3) Presentational communication.

Some possible topics to be covered in Year 11 Italian (Units 1&2) are:

1. Recent Italian migration
2. Social media and technology
3. Future ambitions
4. Relationships (family and friends)

Students participate in an excursion to Carlton or to Melbourne University promoting the Italian language in the Dante Alighieri Poetry Competition.

Outcomes

- 1 – To be able to respond in writing in Italian to spoken, written or visual texts presented in Italian.
- 2 – To be able to analyse and use information from written, spoken or visual texts to produce an extended written response in Italian.
- 3 – To be able to explain information, ideas and concepts orally in Italian to a specific audience about an aspect of culture within communities where Italian is spoken.

UNIT 3 – ITALIAN

These final 2 units involve students extending their language skills by developing the capacity to speak and write effectively for a range of purposes and audiences in a variety of ways. Students learn via interactive games and participate in excursions in order to enhance their learning. In addition, there is an advantage of boosting the final ENTER score when students choose to study Italian at Year 12.

Students are required to maintain an organised collection of their course work and handouts in the form of a workbook/technological folio; and present, orally and in writing, various situational events.

Possible topics for Year 12 Italian (Units 3&4) are:

1. Healthy lifestyles
2. Gastronomy
3. Childhood memories
4. An Italian exchange

Outcomes

The three outcomes assessed during this unit of work are the following:

- 1 – To be able to participate in a spoken exchange in Italian to resolve a personal issue.
- 2 – To be able to interpret information from texts and write responses in Italian.
- 3 – To be able to express ideas in a personal, informative or imaginative piece of writing in Italian.

UNIT 4 – ITALIAN

Students investigate aspects of culture through the study of two or more subtopics from the prescribed themes and topics, which include the following: 1) The Individual 2) The Italian [Speaking Communities](#) and 3) The World Around Us. Area of Study 1 and Area of Study 2 may focus on the same subtopic. Area of Study 3 should cover a different subtopic to the subtopic/s chosen for Areas of Study 1 and 2. Students build on their knowledge of Italian-speaking communities, considering cultural perspectives and language and explaining personal observations. Finally, students consolidate and extend vocabulary, grammar knowledge and language skills to investigate the topics through their Italian studies and participate in engaging and interactive games which encourages growth mindset and successful learning.

Possible topics for Year 12 Italian (Units 3&4) are:

1. Healthy lifestyles
2. Gastronomy
3. Childhood memories
4. An Italian exchange

Outcomes

The following are the three outcomes assessed for this unit:

- 1 – To be able to share information, ideas and opinions in a spoken exchange in Italian.
- 2 – To be able to analyse information from written, spoken and viewed texts for use in a written response in Italian.
- 3 – To be able to present information, concepts and ideas in evaluative or persuasive writing on an issue in Italian.

ASSESSMENT

Units 1 and 2

Students will be awarded grades and S results, according to the particular piece of work. At the end of each semester there will be a written exam.

Units 3 and 4

Students are given a score out of 50, based on their performance in 3 SACS in each Unit, making a total of 100. SAC 1 is a written task; SAC 2 is a speaking task; SAC 3 is a reading comprehension/listening task. There is also an external written and oral exam at the end of the year.

MATHEMATICS

The following VCE Mathematics Units are available to study:

- **Foundation Mathematics Units 1 – 4**
Provides for the continuing mathematical development of students with respect to problems encountered in practical contexts in everyday life at home, in the community, at work and in study.
- **General Mathematics Units 1 – 4**
Provides for the study of non-calculus and discrete mathematics topics. They are designed to be widely accessible and provide preparation for general employment, business or further study, in particular where data analysis, recursion and financial modelling, networks and matrices are important.
- **Mathematical Methods Units 1 – 4**
Provides for the study of simple elementary functions, transformations and combinations of these functions, algebra, calculus, probability and statistics, and their applications in a variety of practical and theoretical contexts. They also provide background for further study in, for example, science, technology, engineering and mathematics (STEM), humanities, economics and medicine.
- **Specialist Mathematics Units 1 – 4**
Provides for the study of various mathematical structures, reasoning and proof. The areas of study in Units 3 and 4 extend content from Mathematical Methods Units 3 and 4 to include rational and other quotient functions as well as other advanced mathematics topics such as logic and proof, complex numbers, vectors, differential equations, kinematics, and statistical inference. They also provide background for advanced studies in mathematics and other STEM fields. Study of Specialist Mathematics Units 3 and 4 assumes concurrent study or previous completion of Mathematical Methods Units 3 and 4.

Combinations of Mathematics units

Units 1 and 2	Units 3 and 4
Foundation Mathematics	Foundation Mathematics
General Mathematics	General Mathematics or Foundation Mathematics
Mathematical Methods	Mathematical Methods or General Mathematics
General Mathematics and Mathematical Methods	General Mathematics and Mathematical Methods
Mathematical Methods	Mathematical Methods and Specialist Mathematics*
Mathematical Methods and Specialist Mathematics	Mathematical Methods and Specialist Mathematics
Mathematical Methods and Specialist Mathematics	General Mathematics, Mathematical Methods and Specialist Mathematics

*For this combination of units, students will need to undertake some supplementary study with respect to assumed knowledge and skills for Specialist Mathematics Units 3 and 4.

FOUNDATION MATHS

UNIT 1 & 2

Foundation Mathematics Units 1 and 2 focus on providing students with the mathematical knowledge, skills, understanding and dispositions to solve problems in real contexts for a range of workplace, personal, further learning, and community settings relevant to contemporary society. They are also designed as preparation for Foundation Mathematics Units 3 and 4 and contain assumed knowledge and skills for these units.

In Foundation Mathematics there is a strong emphasis on the use of mathematics in practical contexts encountered in everyday life in the community, at work and at study.

The areas of study for Units 1 and 2 of Foundation Mathematics are 'Algebra, number and structure', 'Data analysis, probability and statistics', 'Discrete mathematics: financial and consumer mathematics', 'Space and measurement'

Algebra, number and structure

Students cover estimation, and the use and application of different forms of number and related calculations in practical, everyday and routine work contexts.

Data analysis, probability and statistics

Students cover collection, presentation and analysis of gathered and provided data from community, work, recreation and media contexts, including consideration of suitable forms of representation.

Discrete mathematics: financial and consumer mathematics

Students cover the use and interpretation of different forms of numbers and calculations, and their application in relation to the understanding and management of personal, local and national financial matters.

Space and measurement

Students cover time, and the use and application of the metric system and related measurements in a variety of domestic, societal, industrial and commercial contexts.

Outcomes

Students should be able to:

- use and apply a range of mathematical concepts, skills and procedures from selected areas of study to solve problems based on a range of everyday and real-life contexts.
- apply mathematical processes in non-routine practical contexts, including situations with some open-ended aspects requiring investigative, modelling or problem-solving techniques or approaches, and analyse and discuss these applications.
- apply computational thinking and use numerical, graphical, symbolic and statistical functionalities of technology to develop mathematical ideas, produce results and carry out analysis in practical situations

ASSESSMENT

Units 1 and 2

The award of satisfactory completion for a unit is based on the teacher's decision that the student has demonstrated achievement of the set of outcomes specified for the unit; determined by evidence gained through the assessment of a range of learning activities and tasks. This comprises of a one-to-two-week mathematical investigation in Unit 1 and 2, touching on the key skills and knowledge from a range of Areas of Studies.

Units 3 and 4

The award of satisfactory completion for a unit is based on the teacher's decision that the student has demonstrated achievement of the set of outcomes specified for the unit; determined by evidence gained through the assessment of a range of learning activities and tasks.

A student's level of achievement in Units 3 and 4 will be determined by a combination of School-Assessed Coursework (SACs) and external assessment.

- Unit 3 School-assessed Coursework: 40%
 - Two mathematical investigation tasks.
- Unit 4 School-assessed Coursework: 20%
 - One mathematical investigation task.
- Units 3 and 4 Examination: 40%
 - Examination assumes student have access to a scientific calculator.

GENERAL MATHS UNIT 1 & 2

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

In undertaking these units, students are expected to be able to apply techniques, routines and processes involving rational and real arithmetic, sets, lists and tables, diagrams and geometric constructions, algebraic manipulation, equations and graphs with and without the use of technology.

The areas of study for General Mathematics Unit 1 and Unit 2 are:

Data analysis, probability and statistics - types of data, display and description of the distribution of data, summary statistics for centre and spread, and the comparison of sets of data.

Algebra, number and structure - the concept of a sequence and its representation by rule, table and graph, arithmetic or geometric sequences as examples of sequences generated by first-order linear recurrence relations, and simple financial and other applications.

Functions, relations and graphs - linear function and relations, their graphs, modelling with linear functions, solving linear equations and simultaneous linear equations, line segment and step graphs.

Discrete mathematics - matrices and matrix operations to model and solve a range of practical problems, including population growth and decay.

Outcomes

Students should be able to:

- define and explain key concepts, and apply a range of related mathematical routines and procedures.
- select and apply mathematical facts, concepts, models and techniques to investigate and analyse extended application problems in a range of contexts.
- select and use numerical, graphical, symbolic and statistical functionalities of technology to develop mathematical ideas, produce results and carry out analysis in situations requiring problem-solving, modelling or investigative techniques or approaches.

GENERAL MATHS UNIT 3 & 4

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.

The areas of study for General Mathematics Unit 3 and Unit 4 are:

Data analysis – data types, representation and distribution of data, location, spread, association, correlation and causation, response and explanatory variables, linear regression, data transformation and goodness of fit, times series, seasonality, smoothing and prediction.

Recursion and Financial Modelling – cover the use of first-order linear recurrence relations and the time value of money (TVM) to model and analyse a range of financial situations, and using technology to solve related problems involving interest, appreciation and depreciation, loans, annuities and perpetuities.

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

Networks and decision mathematics – definitions and representation of different kinds of undirected and directed graphs, Eulerian trails, Eulerian circuits, bridges, Hamiltonian paths and cycles, and the use of networks to model and solve problems involving travel, connection, flow, matching, allocation and scheduling.

MATHEMATICAL METHODS UNIT 1 & 2

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

The areas of study for Mathematical Methods Units 1 and 2 are:

Functions, relations and graphs – graphical representation of simple algebraic functions (polynomial and power functions) of a single real variable and the key features of functions and their graphs such as axis intercepts, domain (including the concept of maximal, natural or implied domain), co-domain and range, stationary points, asymptotic behaviour and symmetry.

Algebra, number and structure – algebra of polynomial functions of low degree, algebra of simple transcendental functions and transformations of the plane.

Calculus – constant and average rates of change and an introduction to instantaneous rate of change of a function in familiar contexts, including graphical and numerical approaches to estimating and approximating these rates of change, differentiation and anti-differentiation of polynomial functions by rule, different notations, and related applications including the analysis of graphs.

Data analysis, probability and statistics – concepts of experiment (trial), outcome, event, frequency, probability and representation of finite sample spaces and events using various forms such as lists, grids, Venn diagrams and tables. They also cover introductory counting principles and techniques and their application to probability.

Outcomes

Students should be able to:

- define and explain key concepts, and apply a range of related mathematical routines and procedures.
- select and apply mathematical facts, concepts, models and techniques to investigate and analyse extended application problems in a range of contexts.
- select and use numerical, graphical, symbolic and statistical functionalities of technology to develop mathematical ideas, produce results and carry out analysis in situations requiring problem-solving, modelling or investigative techniques or approaches.

MATHEMATICAL METHODS UNIT 3 & 4

These units extend the introductory study of simple elementary functions of a single real variable, to include combinations of these functions, algebra, calculus, probability and statistics, and their applications in a variety of practical and theoretical contexts.

Areas of study for Mathematical Methods Units 3 & 4 are:

Functions, relations and graphs – transformations of the plane and the behaviour of some elementary functions of a single real variable, including key features of their graphs such as axis intercepts, stationary points, points of inflection, domain (including maximal, implied or natural domain), co-domain and range, asymptotic behaviour and symmetry.

Algebra, number and structure – algebra of functions, including composition of functions, inverse functions and the solution of equations. They also study the identification of appropriate solution processes for solving equations, and systems of simultaneous equations, presented in various forms. This content is to be incorporated as applicable to the other areas of study

Calculus – graphical treatment of limits, continuity and differentiability of functions of a single real variable, and differentiation, anti-differentiation and integration of these functions.

Data analysis, probability and statistics – discrete and continuous random variables, their representation using tables, probability functions (specified by rule and defining parameters as appropriate); the calculation and interpretation of central measures and measures of spread; and statistical inference for sample proportions.

Outcomes

Students should be able to:

- define and explain key concepts, and apply a range of related mathematical routines and procedures.
- select and apply mathematical facts, concepts, models and techniques to investigate and analyse extended application problems in a range of contexts.
- select and use numerical, graphical, symbolic and statistical functionalities of technology to develop mathematical ideas, produce results and carry out analysis in situations requiring problem-solving, modelling or investigative techniques or approaches.

ASSESSMENT

Units 1 and 2

The award of satisfactory completion for a unit is based on the teacher's decision that the student has demonstrated achievement of the set of outcomes specified for the unit; determined by evidence gained through the assessment of a range of learning activities and tasks. This comprises of a one-to-two-week mathematical investigation in Unit 1 and 2, touching on the key skills and knowledge from a range of Areas of Studies.

Units 3 and 4

The award of satisfactory completion for a unit is based on the teacher's decision that the student has demonstrated achievement of the set of outcomes specified for the unit; determined by evidence gained through the assessment of a range of learning activities and tasks.

A student's level of achievement in Units 3 and 4 will be determined by a combination of School-Assessed Coursework (SACs) and external assessment.

- Unit 3 School-assessed Coursework: 20%
 - One application task
- Unit 4 School-assessed Coursework: 20%
 - Two Modelling/Problem Solving Tasks.
- Units 3 and 4 Examination 1: 20%
- Units 3 and 4 Examination 2: 40%
Examination 2 assumes students have access VCAA approved technology.

SPECIALIST MATHS UNIT 1 & 2

Specialist Mathematics Units 1 and 2 provide a course of study for students who wish to undertake an in-depth study of mathematics, with an emphasis on concepts, skills and processes related to mathematical structure, modelling, problem-solving, 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

The areas of study for Specialist Mathematics Units 1 and 2 are:

Algebra, number and structure – development of formal mathematical notation, definition, reasoning and proof applied to number systems, graph theory, sets, logic, and Boolean algebra, and the development of algorithms to solve problems. Arithmetic and algebra of complex numbers, including polar form, regions and curves in the complex plane and introduction to factorisation of quadratic functions over the complex field.

Discrete mathematics – study of sequences, series, and first-order linear difference equations, combinatorics, including the pigeon-hole principle, the inclusion-exclusion principle, permutations and combinations, combinatorial identities, and matrices.

Data analysis, probability and statistics – linear combinations of random variables and the distribution of sample means of a population, with the use of technology to explore variability of sample means.

Space and measurement – trigonometry and identities, rotation and reflection transformations of the plane and vectors for working with position, shape, direction and movement in the plane and related applications.

Functions, relations and graphs – introduction to partial fractions; reciprocal and inverse circular functions and their graphs and simple transformations of these graphs; locus definitions of lines, parabolas, circles, ellipses and hyperbolas and the cartesian, parametric and polar forms of these relations.

Outcomes

Students should be able to:

- define and explain key concepts, and apply a range of related mathematical routines and procedures.
- select and apply mathematical facts, concepts, models and techniques to investigate and analyse extended application problems in a range of contexts.
- select and use numerical, graphical, symbolic and statistical functionalities of technology to develop mathematical ideas, produce results and carry out analysis in situations requiring problem-solving, modelling or investigative techniques or approaches.

SPECIALIST MATHEMATICS UNIT 3 & 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

Areas of study for Specialist Mathematics Units 3 & 4 are:

Logic and Proof - development of mathematical argument and proof. This includes conjectures, connectives, quantifiers, examples and counter-examples, and proof techniques including mathematical induction. Proofs will involve concepts from topics such as: divisibility, inequalities, graph theory, combinatorics, sequences and series including partial sums and partial products and related notations, complex numbers, matrices, vectors and calculus.

Functions, relations and graphs – cover rational functions and other simple quotient functions, curve sketching of these functions and relations, and the analysis of key features of their graphs including intercepts, asymptotic behaviour and the nature and location of stationary points and points of inflection and symmetry.

Algebra, number and structure – algebra of complex numbers, including polar form, factorisation of polynomial functions over the complex field and an informal treatment of the fundamental theorem of algebra.

Calculus – advanced calculus techniques for analytical and numerical differentiation and integration of a broad range of functions, and combinations of functions; and their application in a variety of theoretical and practical situations, including curve sketching, evaluation of arc length, area and volume, differential equations and kinematics, and modelling with differential equations drawing from a variety of fields such as biology, economics and science.

Space and measurement – arithmetic and algebra of vectors; linear dependence and independence of a set of vectors; proof of geometric results using vectors; vector representation of curves in the plane and their parametric and cartesian equations; vector kinematics in one, two and three dimensions; vector, parametric and cartesian equations of lines and planes.

Data analysis, probability and statistics – of linear combinations of random variables and introductory statistical inference with respect to the mean of a single population, the determination of confidence intervals, and hypothesis testing for the mean using the distribution of sample means.

ASSESSMENT

Units 1 and 2

The award of satisfactory completion for a unit is based on the teacher's decision that the student has demonstrated achievement of the set of outcomes specified for the unit; determined by evidence gained through the assessment of a range of learning activities and tasks. This comprises of a one-to-two-week mathematical investigation in Unit 1 and 2, touching on the key skills and knowledge from a range of Areas of Studies.

Units 3 and 4

The award of satisfactory completion for a unit is based on the teacher's decision that the student has demonstrated achievement of the set of outcomes specified for the unit; determined by evidence gained through the assessment of a range of learning activities and tasks.

A student's level of achievement in Units 3 and 4 will be determined by a combination of School-Assessed Coursework (SACs) and external assessment.

- Unit 3 School-assessed Coursework: 20%
 - One application task
- Unit 4 School-assessed Coursework: 20%
 - Two Modelling/Problem Solving Tasks.
- Units 3 and 4 Examination 1: 20%
- Units 3 and 4 Examination 2: 40%
Examination 2 assumes students have access VCAA approved technology.

SCIENCE

The VCE Science Study Design comprises:

Units 1 & 2, Units 3 & 4 Biology

Units 1 & 2, Units 3 & 4 Chemistry

Units 1 & 2, Units 3 & 4 Physics

Units 1 & 2, Units 3 & 4 Psychology

BIOLOGY

There are no prerequisites for entry into Units 1, 2, and 3. Students must undertake Unit 3 prior to undertaking Unit 4. Students entering Unit 3 without Units 1 and/or 2 may be required to undertake additional preparation as prescribed by their teacher.

Biology explores the dynamic relationships between organisms and their interactions with the non-living environment. It also explores the processes of life, from the molecular world of the cell to that of the whole organism, that maintain life and ensure its continuity. Students examine classical and contemporary research, models and theories to understand how knowledge in Biology has evolved and continues to evolve in response to new evidence and discoveries.

An understanding of the complexities and diversity of Biology leads students to appreciate the interconnectedness of the content areas both within Biology, and across Biology and the other sciences.

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.

Outcomes

- Be able to explain and compare cellular structure and function and analyse the cell cycle and cell growth, death and differentiation.
- Be able to explain and compare how cells are specialised and organised in plants and animals, and analyse how specific systems in plants and animals are regulated.
- Be able to adapt or design and then conduct a scientific investigation related to function and/or regulation of cells or systems, and draw a conclusion based on evidence from generated primary data.

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.

Outcomes

- Be able to explain and compare chromosomes, genomes, genotypes and phenotypes, and analyse and predict patterns of inheritance.
- Be able to analyse advantages and disadvantages of reproductive strategies, and evaluate how adaptations and interdependencies enhance survival of species within an ecosystem.
- Be able to identify, analyse and evaluate a bioethical issue in genetics, reproductive science or adaptations beneficial for survival.

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. Examples of investigation topics include, but are not limited to: discovery and development of the model of the structure of DNA; proteomic research applications; transgenic organism use in agriculture; use, research and regulation of gene technologies, including CRISPR-Cas9; outcomes and unexpected consequences of the use of enzyme inhibitors such as pesticides and drugs; research into increasing efficiency of photosynthesis or cellular respiration or impact of poisons on the cellular respiration pathway.

Outcomes

- Be able to analyse the relationship between nucleic acids and proteins, and evaluate how tools and techniques can be used and applied in the manipulation of DNA.
- Be able to analyse the structure and regulation of biochemical pathways in photosynthesis and cellular respiration, and evaluate how biotechnology can be used to solve problems related to the regulation of biochemical pathways.

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 paleontology, 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. Examples of investigation topics include, but are not limited to: deviant cell behaviour and links to disease; autoimmune diseases; allergic reactions; development of immunotherapy strategies; use and application of bacteriophage therapy; prevention and eradication of disease; vaccinations; bioprospecting for new medical treatments; trends, patterns and evidence for evolutionary relationships; population and species changes over time in non-animal communities such as forests and microbiota; monitoring of gene pools for conservation planning; role of selective breeding programs in conservation of endangered species; or impact of new technologies on the study of evolutionary biology.

Outcomes

- Be able to analyse the immune response to specific antigens, compare the different ways that immunity may be acquired and evaluate challenges and strategies in the treatment of disease.
- Be able to analyse the evidence for genetic changes in populations and changes in species over time, analyse the evidence for relatedness between species, and evaluate the evidence for human change over time.
- Be able to design and conduct a scientific investigation related to cellular processes and/or how life changes and responds to challenges, and present an aim, methodology and methods, results, discussion and a conclusion in a scientific poster.

ASSESSMENT

Units 1 and 2

Procedures for assessment of level of achievement in Units 1 and 2 are a school decision.

Assessment may be based on:

- Practical work
- Research tasks
- Unit tests
- Semester examinations

Units 3 and 4

School assessed course work and examination

- Unit 3 school assessed course work: 20%
- Unit 4 school assessed course work: 30%
 - End of year examination: 50%

CHEMISTRY

There are no prerequisites for entry into Units 1, 2 and 3. Students must undertake Unit 3 prior to undertaking Unit 4. Students entering Unit 3 without Units 1 and/or 2 may be required to undertake additional preparation as prescribed by their teacher.

Chemistry explores and explains the composition and behaviour of matter and the chemical processes that occur on Earth and beyond. In this subject students examine a range of chemical, biochemical and geophysical phenomena through exploration of the nature of chemicals and chemical processes. In undertaking this study, students apply chemical principles to explain and quantify the behaviour of matter, as well as undertake practical activities that involve the analysis and synthesis of a variety of materials.

VCE Chemistry provides for continuing study pathways within the discipline and leads to a range of careers.

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.

Students conduct practical investigations involving the reactivity series of metals, separation of mixtures by chromatography, use of precipitation reactions to identify ionic compounds, determination of empirical formulas, and synthesis of polymers.

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 DESIGN AND INNOVATION HELP TO OPTIMISE CHEMICAL PROCESSES?

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.

ASSESSMENT

Units 1 and 2

Procedures for assessment of level of achievement in Units 1 and 2 are a school decision.

Assessment may come from tests, exam, investigations and practical reports or a combination of these.

Units 3 and 4

School-assessed coursework and examination

- Unit 3 School-assessed Coursework: 20%
- Unit 4 School-assessed Coursework: 30%

- End-of-year examination: 50%

PHYSICS

It is highly recommended to take Unit 2 before Unit 3 & 4 but there is no prerequisite for Unit 3. Students must undertake Unit 3 prior to Unit 4. Students entering Unit 3 without Units 1 and/or 2 may be required to undertake additional preparation as prescribed by their teacher.

Physics is a natural science based on observations, experiments, measurements and mathematical analysis with the purpose of finding quantitative explanations for phenomena occurring from the subatomic scale through to the planets, stellar systems and galaxies in the Universe.

VCE Physics provides students with opportunities to explore questions related to the natural and constructed world. The study provides a contextual approach to exploring selected areas within the discipline including atomic physics, electricity, fields, mechanics, thermodynamics, quantum physics and waves. Students also have options for study related to astrophysics, bioelectricity, biomechanics, electronics, flight, medical physics, nuclear energy, nuclear physics, optics, sound and sports science.

Students engage in a range of inquiry tasks that may be self-designed, enabling them to develop key skills and to interrogate the links between theory and practice.

UNIT 1 – HOW IS ENERGY USEFUL TO SOCIETY?

In this unit students examine some of the fundamental ideas and models used by physicists in an attempt to understand and explain energy. Models used to understand light, thermal energy, radioactivity, nuclear processes and electricity are explored. Students apply these physics ideas to contemporary societal issues: communication, climate change and global warming, medical treatment, electrical home safety and Australian energy needs.

Outcomes

- Be able to model, investigate and evaluate the wave-like nature of light, thermal energy and the emission and absorption of light by matter.
- Be able to explain, apply and evaluate nuclear radiation, radioactive decay and nuclear energy.
- Be able to investigate and apply a basic DC circuit model to simple battery-operated devices and household electrical systems, apply mathematical models to analyse circuits, and describe the safe and effective use of electricity by individuals and the community.

UNIT 2 – HOW DOES PHYSICS HELP US TO UNDERSTAND THE WORLD?

In this unit students explore the power of experiments in developing models and theories. They investigate a variety of phenomena by making their own observations and generating questions, which in turn lead to experiments.

In Area of Study 1, students investigate the ways in which forces are involved both in moving objects and in keeping objects stationary and apply these concepts to a chosen case study of motion.

In Area of Study 2, students choose one of eighteen options related to climate science, nuclear energy, flight, structural engineering, biomechanics, medical physics, bioelectricity, optics, photography, music, sports science, electronics, astrophysics, astrobiology, Australian traditional artefacts and techniques, particle physics, cosmology and local physics research. The selection of an option enables students to pursue an area of interest through an investigation and using physics to justify a stance, response or solution to a contemporary societal issue or application related to the option.

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

Outcomes

- Be able to investigate, analyse, mathematically model and apply force, energy and motion.
- Be able to investigate and apply physics knowledge to develop and communicate an informed response to a contemporary societal issue or application related to a selected option.
- Be able to draw an evidence-based conclusion from primary data generated from a student-adapted or student-designed scientific investigation related to a selected physics question.

UNIT 3 – HOW DO FIELDS EXPLAIN MOTION AND ELECTRICITY

In this unit students use Newton's laws to investigate motion in one and two dimensions. They explore the concept of the field as a model used by physicists to explain observations of motion of objects not in apparent contact. Students compare and contrast three fundamental fields – gravitational, magnetic and electric – and how they relate to one another. They consider the importance of the field to the motion of particles within the field. Students examine the production of electricity and its delivery to homes. They explore fields in relation to the transmission of electricity over large distances and in the design and operation of particle accelerators.

Outcomes

- Be able to investigate motion and related energy transformations experimentally, and analyse motion using Newton's laws of motion in one and two dimensions.
- Be able to analyse gravitational, electric and magnetic fields, and apply these to explain the operation of motors and particle accelerators, and the orbits of satellites.
- Be able to analyse and evaluate an electricity generation and distribution system.

UNIT 4 – HOW CAN CREATIVE IDEAS AND INVESTIGATION REVOLUTIONISED THINKING IN PHYSICS?

A complex interplay exists between theory and experiment in generating models to explain natural phenomena. Ideas that attempt to explain how the Universe works have changed over time, with some experiments and ways of thinking having had significant impact on the understanding of the nature of light, matter and energy. Wave theory, classically used to explain light, has proved limited as quantum physics is utilised to explain particle-like properties of light revealed by experiments. Light and matter, which initially seem to be quite different, on very small scales have been observed as having similar properties. At speeds approaching the speed of light, matter is observed differently from different frames of reference. Matter and energy, once quite distinct, become almost synonymous.

In this unit, students explore some monumental changes in thinking in Physics that have changed the course of how physicists understand and investigate the Universe. They examine the limitations of the wave model in describing light behaviour and use a particle model to better explain some observations of light. Matter, that was once explained using a particle model, is re-imagined using a wave model. Students are challenged to think beyond how they experience the physical world of their everyday lives to thinking from a new perspective, as they imagine the relativistic world of length contraction and time dilation when motion approaches the speed of light. They are invited to wonder about how Einstein's revolutionary thinking allowed the development of modern-day devices such as the GPS.

Outcomes

- Be able to analyse and apply models that explain the nature of light and matter, and use special relativity to explain observations made when objects are moving at speeds approaching the speed of light.
- Be able to design and conduct a scientific investigation related to fields, motion or light, and present an aim, methodology and method, results, discussion and a conclusion in a scientific poster.

ASSESSMENT

Units 1 and 2

Procedures for the assessment of levels of achievement in Units 1 and 2 are a school decision. Assessment may come from tests, exam, investigations and practical reports or a combination of these.

Units 3 and 4

School assessed coursework and examination.

- Unit 3 school assessed coursework: 30 %
- Unit 4 school assessed coursework: 20 %
- End of year examination: 50%

PSYCHOLOGY

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

Psychology is a broad discipline that incorporates both the scientific study of human behaviour through biological, psychological and social perspectives and the systematic application of this knowledge to personal and social circumstances in everyday life. VCE Psychology enables students to explore how people think, feel and behave through the use of a biopsychosocial approach.

Students explore the connection between the brain and behaviour by focusing on several key interrelated aspects of the discipline: the interplay between genetics and the environment, individual differences and group dynamics, sensory perception and awareness, memory and learning, and mental health.

This course allows students to examine classical and contemporary research and the use of imaging technologies, models and theories to understand how knowledge in psychology has evolved in response to new evidence and discoveries.

An important feature is the opportunity for students to engage in a range of inquiry tasks that may be self-designed, develop key science skills and interrogate the links between theory, knowledge and practice.

UNIT 1 – HOW ARE BEHAVIOUR AND MENTAL BEHAVIOURS SHAPED

In this unit students examine the complex nature of psychological development, including situations where psychological development may not occur as expected. Students examine the contribution that classical and contemporary knowledge from Western and non-Western societies, including Aboriginal and Torres Strait Islander peoples, has made to an understanding of psychological development and to the development of psychological models and theories used to predict and explain the development of thoughts, emotions and behaviours. They investigate the structure and functioning of the human brain and the role it plays in mental processes and behaviour and explore brain plasticity and the influence that brain damage may have on a person's psychological functioning.

Outcomes

- Be able to discuss complexity of psychological development over the life span, and evaluate ways of understanding and representing psychological development.
- Be able to analyse the role of the brain in mental processes and behaviour and evaluate how brain plasticity and brain injury can change biopsychosocial functioning.
- Be able to identify, analyse and evaluate the evidence available to answer a research question relating to contemporary psychology.

UNIT 2 – HOW DO INTERNAL AND EXTERNAL FACTORS INFLUENCE BEHAVIOUR AND MENTAL PROCESSES?

In this unit students 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 individuals and groups, recognising that different cultural groups have different experiences and values. Students are encouraged to consider Aboriginal and Torres Strait Islander people's experiences within Australian society and how these experiences may affect psychological functioning.

Students examine the contribution that classical and contemporary research has made to the understandings of human perception and why individuals and groups behave in specific ways. 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.

Outcomes

- Be able to analyse how social cognition influences individuals to behave in specific ways and evaluate factors that influence individual and group behaviour.
- Be able to explain the roles of attention and perception, compare gustatory and visual perception and analyse factors that may lead to perceptual distortions.
- Be able to adapt or design and then conduct a scientific investigation related to internal and external influences on perception and/or behaviour and draw an evidence-based conclusion from generated primary data.

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.

Outcomes

- Be able to analyse how the functioning of the human nervous system enables a person to interact with the external world, and evaluate the different ways in which stress can affect psychobiological functioning.
- Be able to apply different approaches to explain learning to familiar and novel contexts and discuss memory as a psychobiological process.

UNIT 4 – HOW IS MENTAL WELLBEING SUPPORTED 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.

Outcomes

- Be able to analyse the demand for sleep and evaluate the effects of sleep disruption on a person's psychological functioning.
- Be able to discuss the concept of mental wellbeing, apply a biopsychosocial approach to explain the development and management of specific phobia, and discuss protective factors that contribute to the maintenance of mental wellbeing.
- Be able to design and conduct a scientific investigation related to mental processes and psychological functioning, and present an aim, methodology and method, results, discussion and conclusion in a scientific poster.

ASSESSMENT

Units 1 and 2

Procedures for the assessment of Unit 1 and 2 are a school decision.

Assessment may come from tests, exams, investigations and practical reports or a combination of these.

Units 3 and 4

School assessed coursework and examination

- Unit 3 School-assessed Coursework: 20%
- Unit 4 School-assessed Coursework: 30%
- End-of-year examination: 50%

TECHNOLOGY

The VCE Applied Technology's Study Design comprises:

Units 1 -2 Applied Computing

Units 1- 4 Food Studies

Units 1 - 4 Product Design and Materials (Wood)

Units 1 - 4 Product Design and Materials (Textiles)

Units 1 – 4 Systems Engineering

APPLIED COMPUTING

There are no prerequisites for entry to Units 1, 2 and 3. However, it is assumed that students enrolling in VCE Data Analytics have sound design thinking skills. Students must undertake Unit 3 prior to undertaking Unit 4. Units 1 to 4 are designed to a standard equivalent to the final two years of secondary education. All VCE studies are benchmarked against comparable national and international curriculum.

Introduction

Note: In 2020 a new study design begins, see the [Applied Computing](#) study design for details. VCE Computing focuses on the application of a problem-solving methodology, and strategies and techniques for managing information systems in a range of contexts, to create digital solutions that meet specific needs. The study examines the attributes of each component of an information system including people, processes, data and digital systems (hardware, software, networks), and how their interrelationships affect the types and quality of digital solutions.

VCE Computing is underpinned by four key concepts: approaches to problem solving, data and information, digital systems and interactions and impact. Together these form the conceptual framework of the study and the organising elements for its key knowledge.

An important component of the study is the opportunity for students to develop social capital, that is, the shared understanding in social networks that enable cooperation and a cooperative approach to problem solving.

VCE Computing provides students with opportunities to acquire and apply knowledge and skills to use digital systems efficiently and effectively when creating digital solutions both individually and as part of a network. Students investigate legal requirements and ethical responsibilities that individuals and organisations have with respect to the security and integrity of data.

Through a structured approach to problem solving, incorporating computational, design and systems thinking, students are equipped to orient themselves towards the future, with an awareness of the technical and societal implications of digital systems.

At present, Diamond Valley College does not offer the Software Development course at Units 3 & 4, although this may be offered in the future if there is sufficient interest.

For more information, refer to the Study Design: [VCE Applied Computing](#)

UNIT 1 – APPLIED COMPUTING

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

Areas of Study:

1. Data Analysis

In this area of study students use software tools to create data visualisations in response to teacher-provided requirements and designs. The software tools are used for the collection, interpretation and manipulation of data to draw conclusions and create data visualisations that represent their findings. Data visualisations could include charts, graphs, histograms, maps, network diagrams and spatial relationships diagrams. No restrictions are placed on the software tools used to create data visualisations.

2. Programming

In this area of study students use a programming language to create a working software solution in response to teacher-provided solution requirements. Students apply the problem-solving stages of design, development and evaluation to develop the solution.

Outcomes

On completion of this unit the student should be able to:

1. interpret teacher-provided solution requirements and designs, collect and manipulate data, analyse patterns and relationships, and develop data visualisations to present findings.
2. interpret teacher-provided solution requirements to design, develop and evaluate a software solution using a programming language.

UNIT 2 – APPLIED COMPUTING

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

Areas of Study:

1. Innovative Solutions

In this area of study students work collaboratively to develop an innovative solution to an identified need or opportunity. They apply all stages of the problem-solving methodology to investigate the use of digital devices and emerging technologies and their applications.

The innovative solution may take the form of a proof of concept, prototype or product. Students choose one of the following topics to explore in greater detail:

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

2. Network Security

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

Outcomes

On completion of this unit, the student should be able to:

1. in collaboration with other students, analyse, design, develop and evaluate an innovative solution to an identified need or opportunity involving a digital system.
2. respond to a teacher-provided case study to examine the capabilities and vulnerabilities of a network, design a network solution, discuss the threats to data and information, and propose strategies to protect the security of data and information.

UNIT 3 – DATA ANALYTICS

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

Areas of Study:

1. Data analytics

In this area of study students access, select and extract authentic data from large repositories. They manipulate the data to present findings as data visualisations in response to teacher-provided solution requirements and designs. Students develop software solutions using database, spreadsheet and data visualisation software tools to undertake the problem-solving activities in the development stages of manipulation, validation and testing.

2. Data analytics: analysis and design

In this area of study students, individually, determine and propose a research question and collect and analyse data. This is the first part of the School-assessed Task (SAT), involving analysis and design, with the second part undertaken in Unit 4, Area of Study

Outcomes

On completion of this unit the student should be able to:

1. respond to teacher-provided solution requirements and designs to extract data from large repositories, manipulate and cleanse data and apply a range of functions to develop software solutions to present findings.
2. individually, determine and propose a research question and collect and analyse data.

UNIT 4 – DATA ANALYTICS

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

Areas of Study

1. Data analytics: development and evaluation

In this area of study students develop the design they prepared in Unit 3, Area of Study 2, into infographics or dynamic data visualisations that address a research topic or question by applying the problem-solving stages of development and evaluation.

2. Cybersecurity: data and information security

In this area of study students focus on data and information security and its importance to an organisation. Students investigate security strategies used by an organisation to manage the storage, communication and disposal of data and information in their networked environment. They examine the threats to this data and information, and evaluate the methods an organisation uses to protect their data and information. Students consider the consequences for an organisation that fails to protect their data and information. They recommend strategies to reduce the threats to data and information, taking into account the key legal requirements and any ethical issues faced by the organisation.

Students apply systems thinking skills when investigating data and information security strategies within an organisation, and when recommending strategies to reduce threats.

Outcomes

On completion of this unit the student should be able to:

1. develop and evaluate infographics or dynamic data visualisations that present findings in response to a research question, and assess the effectiveness of the project plan in monitoring progress.
2. respond to a teacher-provided case study to investigate the current data and information security strategies of an organisation, examine the threats to the security of data and information, and recommend strategies to improve current practices.

ASSESSMENT

Units 1 and 2

The individual school will determine levels of achievement.

Units 3 and 4

- Unit 3 school-assessed coursework: 10 %
- Unit 4 school-assessed coursework: 10 %
- School-assessed task: 30 %
- End-of-year examination: 50 %

FOOD STUDIES

This elective has a material levy. This levy is passed by School Council each year and will be on the levy sheet at the end of the year.

Unit 1 & 2 Food Technology:-

- There are no prerequisites for either Unit 1 or 2 of Food Technology

Unit 3 & 4 Food Technology:-

- No prerequisites for Unit 3
- For Unit 4 Food Studies, Unit 3 Must be completed to undertake Unit 4

VCE Food Studies takes an interdisciplinary approach to the exploration of food, with an emphasis on extending food knowledge and skills and building individual pathways to health and wellbeing through the application of practical food skills.

Practical work is integral to Food Studies and includes cooking, demonstrations, creating and responding to design briefs, dietary analysis, food sampling and taste-testing, sensory analysis, product analysis and scientific experiments.

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.

In Area of **Study 1** 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 particular food-producing region of the world.

In Area of **Study 2** students focus on Australia. They 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 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.

Area of Study 1 focuses on commercial food production industries, while Area of Study 2 looks 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.

Area of Study 1 explores the science of food: our physical need for it and how it nourishes and sometimes harms our bodies. Students investigate the 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 (see www.eatforhealth.gov.au), and develop their understanding of diverse nutrient requirements.

Area of Study 2 focuses 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.

Practical activities enable students to understand how to plan and prepare food to cater for various dietary needs through the production of everyday food that facilitates the establishment of nutritious and sustainable meal 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.

In **Area of Study 1** 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.

In **Area of Study 2** students 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.

Practical activities provide students with opportunities to apply their responses to environmental and ethical food issues, reflect on healthy eating recommendations of the Australian Dietary Guidelines and the Australian Guide to Healthy Eating, and consider how food selections and food choices can optimise human and planetary health.

Outcome 2 (links to area of study 2)

On completion of this unit the student should be able to explain a variety of food information contexts, analyse the formation of food beliefs, evaluate a selected food trend, fad or diet and create food products that meet the Australian Dietary Guidelines.

ASSESSMENT

Units 1 and 2

Procedures for the assessment of levels of achievement in Units 1 and 2 are a matter for school decision. Assessment of levels of achievement for these units will not be reported to the Victorian Curriculum and Assessment Authority.

Units 3 and 4

VCE Food and Technology are as follows:

- Unit 3 School-assessed Coursework: 30 per cent
- Unit 4 School-assessed Coursework: 30 per cent
- End-of-year examination: 40 per cent



PRODUCT DESIGN TECHNOLOGY – WOOD/METAL

This elective has a material levy. This levy is passed by School Council each year and will be on the levy sheet at the end of the year.

Units 1 & 2 Product Design and Technology (Materials: Wood/Metal)

- No prerequisites for Units 1 & 2

Unit 3 & 4 Product Design and Technology (Materials: Wood/Metal)

- Unit 3 No prerequisites
- Unit 3, MUST be undertaken to complete Unit 4

In **VCE Product Design and Technology students** assume the role of a designer-maker. In adopting this role, they acquire and apply knowledge of factors that influence design. Students address the design factors relevant to their design situation.

VCE Product Design and Technology: Materials (Wood/Metal) enables students to

- generate and communicate multiple creative ideas, concepts and product design options using a range of techniques to develop viable solutions to problems
- explore and determine characteristics and properties of materials that make them suitable for use
- examine methods of sourcing, processing, production and assembly of materials and their social, economic, ethical, legal and environmental implications
- apply appropriate, efficient and safe methods of working with materials, tools, equipment and machines using risk assessment
- apply project management techniques of time and sequence, and choose appropriate processes
- analyse and evaluate the appropriateness of production activities and product design
- understand the requirement for ethical, social, environmental, economic and legal considerations involved in designing for the needs of the broader community.
- understand design practice and product development and how these occur in a variety of contexts and environments

UNIT 1 – DESIGN PRACTICES

This unit focuses on the work of designers across relevant specialisations in produce 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 practice 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.

Area of study 1: Product and conceptualising designs (Links to Outcome 1)

In this area of study, students focus on the Double Diamond design approach. They investigate and define needs and/or opportunities. They generate and design when proposing graphical product concepts using visualisations, design options and working drawings. This gives them the opportunity to demonstrate design thinking that incorporates critical, creative and speculative thinking. They learn to use appropriate drawing systems for their design specialisations and refine their product concepts to convey their ideas graphically, using manual and digital technologies. Students work in various design specialisations and have opportunities to work individually, in teams, and collaboratively in their classroom environment.

Area of study 2: Generating, designing and producing (Links to Outcome 2)

In this area of study, students focus on the second diamond in the Double Diamond design approach to develop, trial and test physical product concepts, and make a designed product. Based on the graphical product concepts proposed in Outcome 1, students create prototypes to experiment with the physicality of their product concepts. Trials and tests are conducted to inform, evaluate and critique physical product concepts and to justify the selection of the chosen product concept and its production processes. Students develop a final proof of concept and implement a scheduled production plan to make the product efficiently and effectively. They explore available materials, tools and processes, and develop skills in using them.

Outcomes

Outcome 1 (Links to Area of Study 1)

On completion of this unit the student should be able to apply design thinking strategies to research, critique and communicate a response to a need or opportunity, and work collaboratively and in teams to develop and propose graphical product concepts that address a design brief.

Outcome 2 (Links to Area of Study 2)

On completion of this unit the student should be able to work collaboratively and in teams to trial and test, evaluate and use materials, tools and processes to determine their chosen product concept and produce a product through implementing a scheduled production plan, as well as reflect on and make suggestions for future improvements when working collaboratively and as a team.

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.

Area of study 1: Opportunities for positive impacts for end users (Links to Outcome 1)

In this area of study, student engage with a variety of human and/or non-human end user scenarios and research current products that cater for the specific needs of end users. They explore opportunities to work collaboratively with end users to create positive impacts and minimise harm by supporting increased belonging, access, usability and/or equity through inclusive product design. 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.

Area of study 2: Designing for positive impacts for end users (Links to Outcome 2)

In this area of study, students respond to a need or opportunity to develop a profile of an end user(s), and they design and make an inclusive product that improves belonging, access, usability and/or equity for the end user(s). Students explore needs and/or opportunities of end users, which may involve adjustments and/or variations for specific needs or opportunities, to create positive impacts and minimise harm by supporting inclusion through increased belonging, access, usability and/or equity. Specifically, students use design thinking strategies creative, critical and speculative to examine ways to make a positive impact and minimise harm when generating and designing graphical and physical product concepts, including prototypes, and a final proof of concept that addresses the need or opportunity of the end user.

Area of study 3: Cultural influences on design (Links to Outcome 3)

In this area of study, students look at how culture influences products, and how a designer should engage with culture as they develop a profile of an end user(s) when designing products to address their needs and/or opportunities. Specifically, students look through a cultural lens to extend their thinking about the needs and opportunities of end users, going beyond physical requirements. 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.

Outcomes

Outcome 1 (Links to Area of Study 1)

On completion of this outcome the student should be able to investigate and critique products using the factors that influence design, to make judgments about the success or failure of the products to support positive impacts for end users.

Outcome 2 (Links to Area of Study 2)

On completion of this unit the student should be able to 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.

Outcome 3 (Links to Area of Study 3)

On completion of this unit the student should be able to research and discuss how designers and end users are influenced by culture.

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) opportunities of the end user(s). 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 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.

Area of study 1: Influences on design, development and production of products (Links to Outcome 1)

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.

Area of study 2: Investigating opportunities for ethical design and production (Links to Outcome 2)

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.

Area of study 3: Developing a final proof of concept for ethical production (Link to Outcome3)

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.

Outcomes

Outcome 1 (Links to Area of Study 1)

On completion of this unit the student should be able to critique examples of ethical product design and innovation within industrial settings.

Outcome 2 (Links to Area of Study 2)

On completion of this unit the student should be able to investigate a need or opportunity that relates to ethics and formulate a design brief, conduct research to analyse current market needs or opportunities and propose, evaluate and critique graphical product concepts.

Outcome 3 (Links to Area of Study 3)

On completion of this unit the student should be able to evaluate product concepts related to ethical design, synthesise and apply feedback to justify a final proof of concept, and plan to make the 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.

Area of study 1: Managing production for ethical designs (Links to Outcome 1)

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.

Area of study 2: Evaluation and speculative design (Links to Outcome 2)

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.

Outcomes

Outcome 1 (Links to Area of Study 1)

On completion of this unit the student should be able to implement a scheduled production plan, using a range of materials, tools and processes and managing time and other resources effectively and efficiently to safely make the product designed in Unit 3.

Outcome 2 (Links to Area of Study 2)

On completion of this unit the student should be able to synthesise data to evaluate a range of products, including making judgments about the success of each product, and discuss product designs in regard to entrepreneurial activity, innovation and sustainability and/or other ethical considerations.

ASSESSMENT

Units 1 and 2

Procedures for the assessment of levels of achievement in Units 1 and 2 are a matter for school decision. Assessment of levels of achievement for these units will not be reported to the Victorian Curriculum and Assessment Authority.

Units 3 and 4

VCE Product Design and Technology are as follows as prescribed by VCAA:

Unit 3 School-assessed Coursework: 10 per cent

Unit 4 School-assessed Coursework: 10 per cent

School-assessed Task (SAT Folio): 50 per cent

End of year Examination: 30 per cent

PRODUCT DESIGN TECHNOLOGY – TEXTILES

This elective has a material levy. This levy is passed by School Council each year and will be on the levy sheet at the end of the year.

Units 1 & 2 Product Design and Technology (Textiles)

- No prerequisites for Units 1 & 2

Unit 3 & 4 Product Design and Technology (Textiles)

- Unit 3 No prerequisites
- Unit 3 MUST be completed to undertake Unit 4

In VCE Product Design and Technology students assume the role of a designer-maker. In adopting this role, they acquire and apply knowledge of factors that influence design. Students address the design factors relevant to their design situation.

VCE Product Design and Technology: Textiles enables students to:

- generate and communicate multiple creative ideas, concepts and product design options using a range of techniques to develop viable solutions to problems
- explore and determine characteristics and properties of materials that make them suitable for use
- examine methods of sourcing, processing, production and assembly of materials and their social, economic, ethical, legal and environmental implications
- apply appropriate, efficient and safe methods of working with materials, tools, equipment and machines using risk assessment
- apply project management techniques of time and sequence, and choose appropriate processes
- analyse and evaluate the appropriateness of production activities and product design
- understand the requirement for ethical, social, environmental, economic and legal considerations involved in designing for the needs of the broader community.
- understand design practice and product development and how these occur in a variety of contexts and environments

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 practice 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.

Area of study 1: Developing and conceptualising designs (Links to Outcome 1)

In this area of study, students focus on the Double Diamond design approach. They investigate and define needs and/or opportunities. They generate and design when proposing graphical product concepts using visualisations, design options and working drawings. This gives them the opportunity to demonstrate design thinking that incorporates critical, creative and speculative thinking. They learn to use appropriate drawing systems for their design specialisations and refine their product concepts to convey their ideas graphically, using manual and digital technologies. Students work in various design specialisations and have opportunities to work individually, in teams, and collaboratively in their classroom environment.

Area of study 2: Generating, designing and producing (Links to Outcome 2)

In this area of study, students focus on the second diamond in the Double Diamond design approach to develop, trial and test physical product concepts, and make a designed product. Based on the graphical product concepts proposed in Outcome 1, students create prototypes to experiment with the physicality of their product concepts. Trials and tests are conducted to inform, evaluate and critique physical product concepts and to justify the selection of the chosen product concept and its production processes. Students develop a final proof of concept and implement a scheduled production plan to make the product efficiently and effectively. They explore available materials, tools and processes, and develop skills in using them.

Outcomes

Outcome 1 (Links to Area of Study 1)

On completion of this unit the student should be able to apply design thinking strategies to research, critique and communicate a response to a need or opportunity, and work collaboratively and in teams to develop and propose graphical product concepts that address a design brief.

Outcome 2 (Links to Area of Study 2)

On completion of this unit the student should be able to work collaboratively and in teams to trial and test, evaluate and use materials, tools and processes to determine their chosen product concept and produce a product through implementing a scheduled production plan, as well as reflect on and make suggestions for future improvements when working collaboratively and as a team.

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.

Area of study 1: Opportunities for positive impacts for end user (Links to Outcome 1)

In this area of study, students engage with a variety of human and/or non-human end user scenarios and research current products that cater for the specific needs of end users. They explore opportunities to work collaboratively with end users to create positive impacts and minimise harm by supporting increased belonging, access, usability and/or equity through inclusive product design. 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

Area of Study 2: Designing for positive impacts for end users (Links to Outcome 2)

In this area of study, students respond to a need or opportunity to develop a profile of an end user(s), and they design and make an inclusive product that improves belonging, access, usability and/or equity for the end user(s). Students explore needs and/or opportunities of end users, which may involve adjustments and/or variations for specific needs or opportunities, to create positive impacts and minimise harm by supporting inclusion through increased belonging, access, usability and/or equity. Specifically, students use design thinking strategies creative, critical and speculative to examine ways to make a positive impact and minimise harm when generating and designing graphical and physical product concepts, including prototypes, and a final proof of concept that addresses the need or opportunity of the end user.

Area of study 3: Cultural influences on design (Links to Outcome 3)

In this area of study, students look at how culture influences products, and how a designer should engage with culture as they develop a profile of an end user(s) when designing products to address their needs and/or opportunities. Specifically, students look through a cultural lens to extend their thinking about the needs and opportunities of end users, going beyond physical requirements. 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.

Outcomes

Outcome 1 (Links to Area of Study 1)

On completion of this outcome the student should be able to investigate and critique products using the factors that influence design, to make judgments about the success or failure of the products to support positive impacts for end users.

Outcome 2 (Links to Area of Study 2)

On completion of this unit the student should be able to 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.

Outcome 3 (Links to Area of Study 3)

On completion of this unit the student should be able to research and discuss how designers and end users are influenced by culture.

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). 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 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.

Area of study 1: Influences on design, development and production of products (Links to Outcome 1)

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.

Area of study 2: Investigating opportunities for ethical design and production (Links to Outcome 2)

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.

Area of study 3: Developing a final proof of concept for ethical production (Link to Outcome3)

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.

Outcomes

Outcome 1 (Links to Area of Study 1)

On completion of this unit the student should be able to critique examples of ethical product design and innovation within industrial settings.

Outcome 2 (Links to Area of Study 2)

On completion of this unit the student should be able to investigate a need or opportunity that relates to ethics and formulate a design brief, conduct research to analyse current market needs or opportunities and propose, evaluate and critique graphical product concepts.

Outcome 3 (Links to Area of Study 3)

On completion of this unit the student should be able to evaluate product concepts related to ethical design, synthesise and apply feedback to justify a final proof of concept, and plan to make the 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.

Area of study 1: Managing production for ethical designs (Links to Outcome 1)

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.

Area of study 2: Evaluation and speculative design (Links to Outcome 2)

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.

Outcomes

Outcome 1 (Links to Area of Study 1)

On completion of this unit the student should be able to implement a scheduled production plan, using a range of materials, tools and processes and managing time and other resources effectively and efficiently to safely make the product designed in Unit 3.

Outcome 2 (Links to Area of Study 2)

On completion of this unit the student should be able to synthesise data to evaluate a range of products, including making judgments about the success of each product, and discuss product designs in regard to entrepreneurial activity, innovation and sustainability and/or other ethical considerations.

ASSESSMENT

Units 1 and 2

Procedures for the assessment of levels of achievement in Units 1 and 2 are a matter for school decision. Assessment of levels of achievement for these units will not be reported to the Victorian Curriculum and Assessment Authority.

Units 3 and 4

VCE Product Design and Technology are as follows as prescribed by VCAA:

- Unit 3 School-assessed Coursework: 10 per cent
- Unit 4 School-assessed Coursework: 10 per cent
- School-assessed Task (SAT Folio): 50 per cent
- End of year Examination: 30 per cent

SYSTEMS ENGINEERING

VCE Systems Engineering explores integrated systems within engineering and STEM. It's a future-focused subject with strong links to university and advanced trades, ideal for students planning to innovate in new and emerging technologies. This course prepares students for careers in engineering, manufacturing and design through various pathways. Including university, TAFE, vocational study, employment, apprenticeships, and traineeships. Systems Engineering is suited for students who excelled in subjects like Product Design, 3D Printing, Advanced Robotics and Electronics.

UNIT 1: Focus on Mechanical Systems

UNIT 2: Focus on Electronic Systems

UNITS 3 & 4: Focus on integrated Electro-Mechanical Systems, involving designing, planning and building an individual system

VCE VET

The VCE VET options at DVC:

Units 1 & 2, 3 & 4 Certificate III in Screen and Media-Games Development

Units 1 & 2, 3 & 4 Certificate III in Sport and Recreation

Options for other VCE VET: courses can be obtained from Northern Melbourne VET Cluster.

VET CERTIFICATE III Units 1 & 2 Screen and Media-(Games Development)

This elective has a material levy. This levy is passed by School Council each year and will be on the levy sheet at the end of the year.

UNIT 1 & 2

This covers core game development skills in dealing with game engines. Students design and build a game of their own, including assets, puzzles and AI.

In this subject students are introduced to the game design pipeline. They learn about the key elements required to create a fully functioning game in the Unreal Development Kit (UE4). They complete design documents including game flow, level concepts and storyboards and incorporate feedback from teachers and peers. Students develop their skills in the use of Photoshop, Flash and HTML, which are required for creating in-game menus and heads up displays. This unit also covers OH&S in a game design environment.

UNIT 3 & 4

Students extend and develop their skills to include third person games, complex scripting and multiple levels.

A study score is available for this program. To be eligible students must:

- achieve all the units of competence designated as the scored Units 3 and 4 sequence
- be assessed in accordance with the tools and procedures specified by the VCAA
- undertake an end-of-year examination.

AUSPICING

The Diamond Valley College VET Screen and Media Games Development program is auspiced by the Academy of Interactive Entertainment, a Registered Training Organisation who monitor the program to ensure it complies with national standards. Trainers from AIE will visit the school at regular intervals, and will also organise visits to the Academy. Students enrolled in these courses will receive their qualification from AIE, and will be offered the opportunity to enrol in post-secondary courses that build on their school experience.

Pathways

This qualification could allow students to undertake further training or study to enable them to be employed in roles such as games developers, animators or other related IT occupations.

VET CERTIFICATE III SPORT & RECREATION

This elective has a material levy. This levy is passed by School Council each year and will be on the levy sheet at the end of the year.

VCE VET Sport and Recreation is studied at Year 10 for the whole year. Completion of the Certificate III Sport and Recreation is achieved at Year 11 across the whole year. This course is classroom based with a student workbook and involves multiple off site excursions incorporating canoe, rock climb, ski and bushwalk experiences.

VET Sport and Recreation provides students with the opportunity to acquire and develop the skills, knowledge and confidence to work in the areas of sport and recreation and fitness. Leadership, organisational and specialist activity skills such as outdoor recreation and fitness will be developed throughout the program.

Course Objectives

This qualification provides the skills and knowledge for an individual wishing to work in the sport and recreation industry in areas such as maintaining grounds and playing surfaces, providing customer service, facilities maintenance and administrative assistance. This qualification also provides pathways for multi skilled roles which combine a range of activities required to support the operation of facilities such as fitness centres, outdoor sporting grounds or complexes, aquatic centres and community recreation centres. You will gain the skills to deliver a sport and recreation service to clients in a recreation facility, learn about event management and how to deal with conflict and have the ability to put these skills into practice through on the job practice.

Pathways

This qualification could allow students to undertake further training or study to enable them to be employed in roles such as outdoor recreation, personal training, gym instruction, event promotions, facilities management and coaching.

Contribution to the VCE

Upon successful completion of the VCE VET Sport and Recreation program students will be eligible for up to four units of credit towards their VCE: Two units at Units 1 and 2, and a Units 3 and 4 sequence. The program also may contribute to VCAL at the Foundation, Intermediate or Senior levels.

ATAR Contribution

Students wishing to receive an ATAR contribution for the Units 3 & 4 sequence must undertake cored assessment for the purposes of gaining a study score. This study score can contribute directly to the primary four or as a fifth or sixth study.

VCE VET CLUSTER AVAILABLE THROUGH NMVC CLUSTER

Students wishing to pursue a VET course that is not available at Diamond Valley College can access a wide selection of VET courses via the Northern Melbourne VET Cluster. Through the cluster students have access to more than 40 VET courses. Handbooks for the cluster can be collected from the VET Coordinator.

Contribution to the VCE

VCE VET subjects can provide students with contributions to their VCE in two ways. Either directly through scored assessments or indirectly through Block Credit. Course guides will indicate how the different courses can contribute to the VCE.

VOCATIONAL MAJOR (VM)

The VCE Vocational Major (VM) is a vocational and applied learning program within the VCE designed to be completed over a minimum of two years. The VCE VM will give students greater choice and flexibility to pursue their strengths and interests and develop the skills and capabilities needed to succeed in further education, work and life.

It prepares students to move into apprenticeships, traineeships, further education and training, university (via non-ATAR pathways) or directly into the workforce.

The purpose of the VCE VM is to provide students with the best opportunity to achieve their personal goals and aspirations in a rapidly changing world by:

- equipping them with the skills, knowledge, values and capabilities to be active and informed citizens, lifelong learners and confident and creative individuals; and
- empowering them to make informed decisions about the next stages of their lives through real life workplace experiences.

The 2023 VCE Administrative Handbook to be released later in 2022 will include the VCE VM administrative advice set out on this webpage.

To be eligible to receive the VCE VM, students must satisfactorily complete a minimum of 16 units, including:

- 3 VCE VM Literacy or VCE English units (including a Unit 3–4 sequence)
- 2 VCE VM Numeracy or VCE Mathematics units
- 2 VCE VM Work Related Skills units
- 2 VCE VM Personal Development Skills units, and
- 2 VET credits at Certificate II level or above (180 nominal hours)

Students must complete a minimum of three other Unit 3–4 sequences as part of their program. Units 3 and 4 of VM studies may be undertaken together over the duration of the academic year to enable these to be integrated.

The VCE VM can be tailored to the needs and interests of the student, to keep them engaged while developing their skills and knowledge. Students can also include other VCE studies and VET, and can receive structured workplace learning recognition.

Most students will undertake between 16-20 units over the two years.

For more information visit –

<https://www.vcaa.vic.edu.au/curriculum/vce/Pages/AboutVCEVocationalMajor.aspx>