

# Thornbury High School 11/12 Handbook 2019

## Post-compulsory Pathways

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### Subject Selection:

This subject selection handbook has been designed to assist students in their selection of VCE, VCAL and VET subjects for 2019. It should be used in conjunction with the parent information evening, level assemblies, class and individual career counselling that is provided for students and parents during term three.

### How are the Senior Years Different?

Students are expected to take more responsibility for their own learning, with the teacher acting more as a facilitator to the learning rather than a director. It is not just a matter of gaining skills and knowledge, but of being able to apply them in an increasing range of situations. There will be more unsupervised study time outside normal lessons, requiring increased self-discipline and motivation to complete tasks and revise efficiently. Year 11 & 12 students will have access to the library and senior school study centre outside class time, where they can choose to complete private study or join a study group. During years 7 to 10 the school designs content, assessment, rules and guidelines within a framework provided by the government. The Victorian Curriculum and Assessment Authority (VCAA) determine the study design, rules and guidelines for the VCE. The Victorian Quality Assurance does the same for VCAL. It is important that students understand and follow the rules and expectations as teachers cannot modify them. Full details are on the VCAA web site. [www.vcaa.vic.gov.au](http://www.vcaa.vic.gov.au)

### What will help you to do your best?

As motivation and self-direction are very important, it is crucial that students **select studies that interest them, provide them with confidence, and offer a positive challenge**. Those who have excellent organisation and time management skills will work more efficiently and find it easier to work independently. A balanced lifestyle, where students have a high work ethic but also find time to socialise with family and friends, and continue other interests is important in personal development. Adequate rest, exercise and good nutrition are important in helping students maintain good health and cope with the additional study required. Having a positive outlook, support from and for peers or family and taking up opportunities offered, will assist students to always achieve their personal best.

### How does the VCE work?

- A VCE study (or subject) is generally designed to last for one year and is made up of two units.
- Units 1 and 2 (usually studied in Year 11) can be taken as single units.
- Units 3 and 4 (usually studied in Year 12) must be taken as a sequence of two units. That is, where students enrol in Unit 3 in a study, they will also be expected to enrol in Unit 4 of that study.
- Completing a Unit 3 - 4 sequence in Year 11 will allow students to have an extra study score to add to their final total score (ATAR).
- Students normally enrol in six studies (12 units) in Year 11 and five studies (10 units) in Year 12.

### What is required to successfully complete the VCE?

To be awarded the VCE, students must satisfactorily complete at least 16 units. These units must include:

- An approved combination of at least three units from the group of English studies.
- At least three sequences of Unit 3/4 studies other than English.

### Designing a program of study for the VCE

Students should discuss selections with teachers and parents. Students need to design a two year program and should consider the following:

#### Personal Interests:

- What do you enjoy studying?
- What talents do you have?
- What careers do you find interesting?
- Is your program balanced?
- Have you challenged yourself?

#### External Requirements:

- What pre-requisites do certain Tertiary/TAFE courses expect?
- What units of study are preferred by employers?
- Can specific VCE units offer you credit transfers for some TAFE course?
- Have teachers/parents advised you against attempting certain subjects?
- Are you choosing a program for you, or following friends?
- Should you consider a VET? (Vocational Education and Training) to compliment your VCE course?

## **Enrolment policy, attendance & workload**

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It is anticipated that all students will be full time unless they have special circumstances. In Year 11, students will enrol in six units each semester and remain enrolled in these units for the entire semester. In Year 12, students will enrol in five or six pairs of units for the year and remain enrolled in the pairs of units for the entire year. If students are undertaking an approved VET Program, they will substitute this for a pair of Units each year. Ninety percent attendance is required to meet the VCAA requirements for course work completed in class. **If a student is absent for an assessment task or for several days, they will be required to provide a medical certificate to avoid failing the unit. This medical certificate cannot be post-dated.**

If a student is experiencing extenuating circumstances they may request to undertake fewer units. These circumstances may include: English as an Additional Language (EAL) students, personal difficulties, a chronic illness or a disability. If a student undertakes a TAFE or Training program which does not carry credit for VCE, they may need to undertake fewer subjects or take an extra year to complete the VCE. The number of studies undertaken and attendance requirements will be arranged with the sub-school manager.

## **Research all possible courses and careers**

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Students should consider career interests and aspirations. Students should consult the latest edition of the 'Job Guide'. Research the job and what exactly is involved. Students should identify University or TAFE courses that will provide the type of training they will need to enter the career areas that interest them.

Students' parents will have the opportunity to attend a counselling session at school before their course applications are due, to check that they have chosen a suitable course and met all VCAA requirements.

## **VOCATIONAL EDUCATION AND TRAINING (VET)**

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### **What is VET?**

VET aims to enhance senior school studies (VCE and VCAL). VET allows a secondary student to combine

their Year 10, VCE or VCAL studies with vocational training.

### **Features of VET**

- It is an accredited program (usually over two years).
- It enables students to complete a nationally recognised vocational qualification (e.g. Certificate II in Hospitality) and their Year 10 studies.
- It allows students to go directly into employment or receive credit towards further studies.
- It focuses on students developing industry specific and workplace skills.
- It is a vocationally oriented school program designed to meet the needs of industry.

### **Contribution to VCE**

VET units contribute to VCE. Some VET programs have a Victorian Curriculum Assessment Authority (VCAA) recognised Unit 1-4 structure, including Year 12 exams.

- At Thornbury students can choose one VET subject as part of their VCE course.
- VET fees depend on the program and the materials students are required to use. All fees must be paid prior to the commencement of the elective.

## **VCE with a VET**

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**Thornbury High School will offer students a pathway known as 'VCE with a VET'.**

VCE with a VET will be an alternative option for students who wish to move into VCE and explore specific Industry Pathways.

VCE with a VET allows students to select from a range of VCE subjects, while encouraging them to investigate, enrol and complete vocational training. The structure of the program will include 12 units:

- VCE English
- VCE Industry & Enterprise
- VCE Maths (appropriate to the student's skills level and recommendations from Year 10 teachers.)
- VCE subject
- VCE subject
- VET subject

'VCE with a VET' will enable students to complete VET while they continue their VCE studies at

Thornbury High School. The program will release students on a Wednesday in order to allow them to pursue their chosen interest. On successful completion of 'VCE with a VET' in Year 11, students will have a VCE pass, a VCAL Certificate and partial completion of their VET course (subject to VCE timetable).

#### **How is 'VCE with a VET Assessed'?**

All accredited courses/certificates that make up the student program are assessed according to VCAA guidelines. Students will be required to sit the VCE Exams including the GAT.

#### **What options does 'VCE with a VET' offer students?**

Students can continue with their course in Year 12 focusing on their pathway or trialling an alternative VET Course

Students may choose to move into a straight VCE Course if they are able to meet the promotion policy (60% average for Scored Assessment) and 10 units.

Students can move into Senior VCAL if they meet the promotion policy.

#### **Awarding a Certificate in the 'VCE with a VET' program**

At the successful completion of Year 11 students will receive:

- VET Certificate (or partial completion)
- VCAL Certificate (Intermediate Level)

## **VICTORIAN CERTIFICATE OF APPLIED LEARNING (VCAL)**

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#### **VCAL is an alternative option for Year 11 and 12.**

VCAL is a "hands on" option for students in the Senior School. The VCAL program provides students with practical work related experiences, as well as Literacy and Numeracy skills and the opportunity to build personal skills that are important for life, work and transition into Tertiary Studies. Like the Victorian Certificate of Education (VCE) VCAL is an accredited secondary certificate.

VCAL provides a pathway to TAFE, Certificates and Diplomas and on successful completion, a pathway to a Bachelor Degree (where appropriate). an apprenticeship or traineeship or employment. The structure of the VCAL program allows students to undertake a School Based Apprenticeship or Traineeship while they continue their studies at Thornbury High School. Students can enrol and

complete a Certificate II or III which would then lead into a Diploma course at tertiary level.

Students will be recommended for VCAL by teachers and Co-ordinators. Students will need to submit a request to be considered for VCAL and will be invited to attend an interview. Please note that positions in VCAL are limited and only the most suitable applicants will be considered.

#### **How is VCAL Assessed?**

All accredited courses/certificates that make up the VCAL program are assessed by the student's individual teacher in accordance with current requirements. It is not compulsory for VCAL students to sit the GAT.

#### **Awarding a VCAL Certificate**

To be awarded a VCAL certificate, students must successfully complete a learning program of 100 nominal hours that is designed to comply with the following credit requirements:

- be made up of 10 credits
- include components from each one of the four VCAL curriculum strands
- contain components drawn from accredited curriculum such as:
  - VCAL units (Personal Development and Work Related Skills)
  - VCE units (VCE English and VCE Maths)
  - VET accredited curriculum/School Based Apprenticeships

#### **School Based Apprenticeships**

This program is open to all students 15 years of age and over and who are permanent residents of Australia. Students enrol in VCAL as well as being in paid employment to complete on and/or off the job training.

#### **Subjects Studied:**

##### *Strand 1- Literacy and Numeracy*

The VCAL program must include Literacy and Numeracy subjects. At Thornbury High School the subjects offered in Year 11 and 12 are:

- Literacy (Intermediate/Senior)
- VCE Foundation Maths / Numeracy (Senior)

##### *Strand 2 – Industry Specific Skills*

The VCAL Intermediate or Senior program must include industry specific units from VET Certificates. The range of VET options is extensive. Please refer to your VET Cluster Booklet for a full list of choices.

##### *Strand 3 – Work Related Skills*

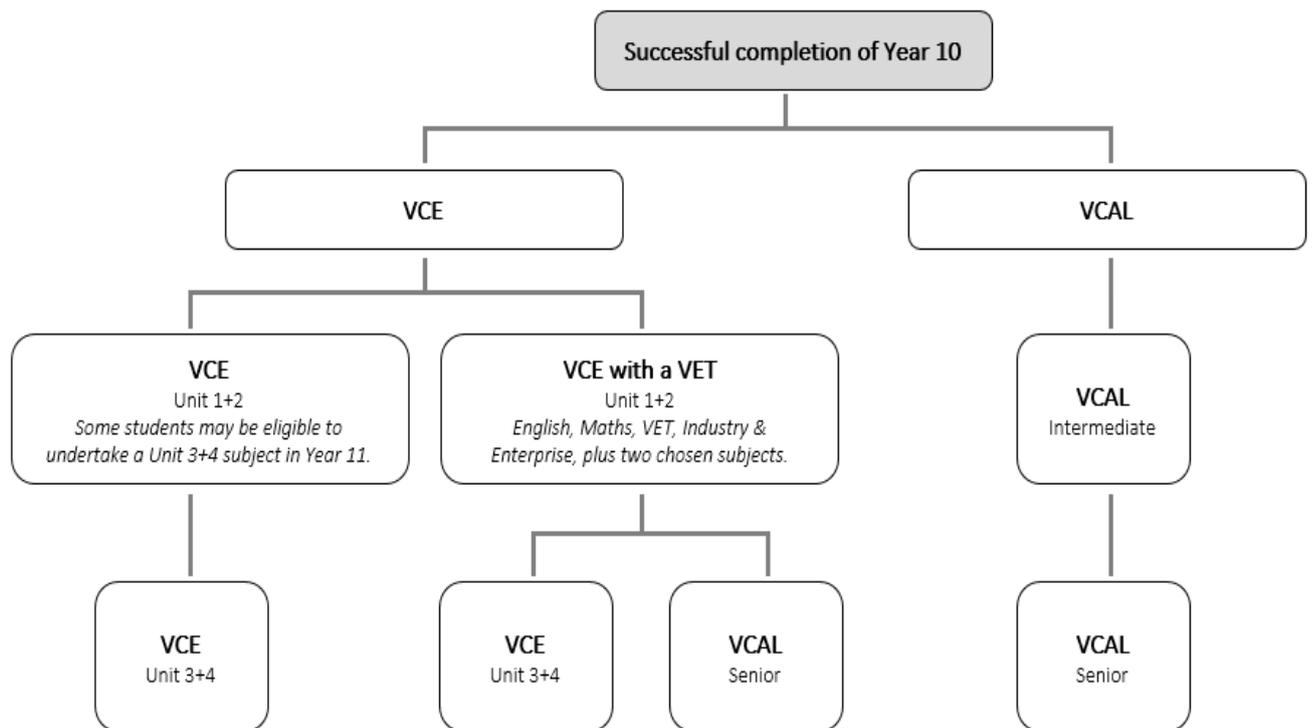
In order to develop ‘employability skills,’ VCAL gives students the choice of undertaking a structured workplace learning placement or part time work. At Thornbury High School we combine these options with units and modules that help prepare students for work in the subject – Work Related Skills. This is a compulsory subject.

**Strand 4 – Personal Development Skills**

As part of the VCAL program students participate in community based projects and structured activities that help develop teamwork skills, self-confidence and other skills important for life and work. At Thornbury High students study VCAL Personal Development. This is a compulsory subject.

**VCE Subject**

Students at Thornbury High have to complete two VCE units as part of their VCAL program. All students will enrol in VCE Food Studies and VCE Health & Human Development (one unit per semester).



## Key contacts – KLA Leaders

If you have any queries regarding subject specific information, please contact the appropriate KLA leader. Alternatively contact the sub-school leader.

English	Lisa Dunne
Maths	Samuel McDowell
Science	Matt Lowe
Humanities	Rick Manning
Performing Arts	Emma McCulloch
P.E. / Health	Carla Ruhe
Visual Arts	Sheraz Salama
Technology	Cameron Baird
Languages	Max Tosi
EAL	Renata Tirabassi

## Subject Summary Levy

Please note that this is an approximate costing of the subjects. Final costs will be published later this year. Subjects will only run if selected by enough students.

KLA	Subject	Levy	
English	English 1+2	-	
	English 3+4	\$20	
	EAL 1+2	-	
	EAL 3+4	\$20	
	Bridging EAL 1+2	-	
	Literature 1+2	-	
	Literature 3+4	\$20	
Health & PE	Health & Human Dev. 1+2	-	
	Health & Human Dev. 3+4	\$20	
	Physical Education 1+2	-	
	Physical Education 3+4	\$20	
Humanities	Accounting 1+2	\$20	
	Accounting 3+4	\$20	
	Business Management 1+2	\$20	
	Business Management 3+4	\$20	
	Geography Unit 1+2	-	
	History 1+2	\$30	
	History (Revolutions) 3+4	\$50	
	Industry and Enterprise 1+2	\$20	
	Legal Studies 1+2	\$20	
	Legal Studies 3+4	\$20	
	Philosophy 1+2	-	
	Maths	Foundation Mathematics 1+2	-
		General Mathematics 1+2	-
Further Mathematics 3+4		\$20	
Mathematical Methods 1+2		-	
Mathematical Methods 3+4		\$20	
Specialist Mathematics 1+2		-	
Specialist Mathematics 3+4		\$20	
Languages	Chinese Second Language 1+2	-	
	Greek 1+2	-	
	Italian 1+2	-	
Science	Biology 1+2	\$30	
	Biology 3+4	\$50	

	Chemistry 1+2	\$30
	Chemistry 3+4	\$50
	Physics 1+2	\$30
	Physics 3+4	\$50
	Psychology 1+2	\$30
	Psychology 3+4	\$50
Technology	Computing 1+2	-
	Computing 3+4	-
	Food Studies 1+2	\$140
	Food Studies 3+4	\$140
	Product Design & Technology 1+2	\$50
Arts	Media 1+2	\$120
	Media 3+4	\$120
	Music Performance 1+2 (levy is exclusively for excursions)	\$60
	Music Performance 3+4 (levy is exclusively for excursions)	\$60
	Music Investigation 3+4	\$120
	Instrumental Music (Sem 1&2. Hire/Levy.)	\$200/200
	Studio Arts: Photography 1+2	\$120
	Studio Arts: Photography 3+4	\$125
	Studio Arts (Art) 1+2	\$80
	Studio Arts (Art) 3+4	\$125
	Theatre Studies 1+2 (levy includes theatre excursion costs - must be paid upfront)	\$145
	Theatre Studies 3+4 (levy includes theatre excursion costs - must be paid upfront)	\$145
	Visual Communication & Design 1+2	\$80
Visual Communication & Design 3+4	\$80	
VET	Sport and Recreation	\$250
	Hospitality: Kitchen Operations	\$580
VCAL	Year 11	\$60
	Year 12	\$100

## Subject selection considerations

### Year 11

- You must select six subjects at Year 11 level (even if you have undertaken a Unit 1+2 subject in Year 10).
- If you intend to complete a VCE Language subject externally you must select another six subjects.
- If starting or continuing with an external VET you must enrol in VCE with a VET.
- Subject selections WILL ONLY be confirmed if you meet the Promotions agreement:

### Year 12

- You must select 5 subjects at Year 12 level (even if you completed a Unit 3/4 subject in Year 11).

- If you intend to study a language externally you must select another 4 subjects.
- If continuing with your external VET you must select another 5 subjects in case of timetable changes.

Subject selections WILL ONLY be confirmed if you meet the Promotions agreement: minimum 60% in your assessments for Semester 1.

Select subjects that you:

- Enjoy and find interesting
- Will achieve success in
- Will lead into a clear Tertiary or TAFE pathway (see Careers/MIPs team).

Do not choose subjects that you think will give you bonus marks but that you are not good at or you do not enjoy. You will ALWAYS achieve better results undertaking subjects you enjoy.

VTAC admissions information can be found online: <http://www.vtac.edu.au/publications.html#year10and11>

## Student holidays during school time

If you choose to take your child away during school time, teachers MAY NOT be able to provide work depending on the curriculum content being taught at the time. Your child's assessment for that semester will reflect the work they have undertaken whilst at school and in negotiation with the teacher. As a parent of VCE students, please be aware of the VCAA guidelines for attendance and requirements. If you have any concerns with this please contact the subject teacher.

## VCE SUBJECTS

### ENGLISH (COMPULSORY)

English is concerned with enhancing a student's communication skills through the modes of reading, writing and oral communication.

English is a compulsory study in VCE unless **English as an Additional Language** or **Literature** is used as an alternative. To attain the VCE, a student must successfully complete three out of the four units of English, English as an Additional Language or Literature with Units 3 and 4 completed sequentially and successfully in the same year.

#### ► ENGLISH

**Unit 1+2:** The focus of this study is on reading a range of texts and genres, particularly narrative and persuasive texts, in order to comprehend, appreciate and analyse the ways texts are constructed and layers of meaning are created.

Students will gain confidence and competence in creating written, oral and multimodal texts, influenced by the strategies and concerns of particular writers, experiment with different writing styles and develop a deep understanding of authors' capacities to position an audience and meet their varied purposes.

Students will develop their ability to compare texts which deal with similar ideas or issues and respond in an academic style of writing. Students will

continue to practise the use of oral language to interact positively, critically and confidently with audiences in formal and informal settings.

**Unit 3+4:** The foci of these units are on reading and responding both orally and in writing form, to a range of texts.

Students analyse how authors use language to create meaning, and consider the many ways in which texts can be interpreted.

Students develop competence in creating written texts by exploring ideas suggested in their reading of the selected texts and further work is done to extend student responses in analytical and creative forms.

Students compare a pair of texts and explore their key ideas and features. In response, students write an informed analysis on how the chosen authors' depict these ideas.

With that, students practice analysing persuasive texts and create oral presentations designed to position an audience.

#### ► LITERATURE

Post VCE Pathways: The valuable critical and analytical skills learnt can lead to careers in law, public service, publishing, editing, directing, writing and acting.

**Unit 1+2:** For the literature aficionado, this study delves deeply into the way literary texts represent human experience.

Students learn to:

- Apply effective reading strategies
- Create informed responses to text
- Examine complex ideas about life and humanity as presented in literature
- Relate these ideas to their own lives and social and historical context
- Develop an understanding of the author's purpose, and create critical responses to, contemporary and classic literature and analyse and interpret texts.

Students must produce personal responses to literature and decipher how themes and ideas in texts reflect on their and the writers' personal and social experiences.

**Unit 3+4:** Complex skills acquired in Unit 1+2 are enhanced and extended in Unit 3+4.

This study requires students to:

- Analyse a range of texts, developing skills in reading closely and critically
- Discuss frameworks for interpreting and evaluating text
- Analyse how the form of a text affects its interpretation; how a writer's views, values or context affect their beliefs and writing
- Consolidate an understanding of how the same text can give rise to conflicting interpretations.

As part of the course students will use their study and understanding of a writer's style and concerns to create their own piece of creative writing. They will also continue their close scrutiny of style, concerns and construction of a text.

### ► ENGLISH AS AN ADDITIONAL LANGUAGE (EAL)

Enrolment in EAL is available only to students who have approved EAL status.

**Unit 1+2:** The EAL course is designed to prepare students for Year 12. In Unit 1 students study a text and complete an Analytical SAC and Creative SAC in relation to the readings. Students also investigated the use of persuasive language through the analysis of written and audio-visual texts. Students prepare and deliver a persuasive oral as the SAC. The mid year exam requires students to respond to all three areas of study.

In Unit 2 students study two texts. They explore how these texts deal with similar ideas and characters in different ways and complete a Reading and Comparing SAC in relation to the text. They build on their knowledge of persuasive language and complete an Analytical Essay SAC on a combination of written and audio-visual texts. The course includes: Note-form summaries demonstrating their comprehension. Students also complete a written piece of persuasive text that presents an argument or viewpoint as a SAC.

**Unit 3+4:** Enrolment in EAL is available only to students who have approved EAL status. The focus of these units is on reading and responding both orally and in writing to a range of texts. Students analyse how authors of texts use language to create meaning, and the different ways in which texts can be interpreted. They develop competence in creating written texts by exploring ideas suggested by their reading of the selected text and the ability to respond in analytical and creative forms. A listening task is also assessed.

They compare a pair of texts to explore the key ideas and features and present an informed analysis of how each text presents these ideas. Students develop their ability to develop and analyse persuasive texts and create oral presentations designed to position an audience. EAL students also focus on comprehension of a spoken text through short-answer responses and note-form summaries as well as a demonstration of understanding of two to three texts that present a point of view on an issue through short-answer responses and note form summaries.

### ► BRIDGING EAL

Enrolment in Bridging EAL is available only to students who have approved EAL status. Bridging EAL is only offered as a Unit 1+2 subject.

Bridging English as an Additional Language (EAL) is the intensive and explicit study of English language in a range of socio-cultural contexts and for a range of purposes, including further education and the workplace. Students develop their language skills and confidence, assisting them to communicate effectively in a range of contexts, including academic and everyday, using a range of registers of spoken and written Standard Australian English. This contributes to students being able to participate effectively in Australian life.

**Unit 1+2:** In Unit 1, students build their understanding of how spoken and written Standard Australian English (SAE) is used to communicate effectively in a variety of contexts and for a range of purposes. Students develop the ability to listen, speak, read and write for everyday and academic purposes. They explore how language features, structures and conventions can be used to express ideas and opinions, and to create their own spoken and written texts.

In Unit 2 the elective areas of study enable students to extend their understanding of how English is constructed and used to communicate in a variety of contexts and for a range of purposes.

## ARTS

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### ♦ MEDIA

VCE Media has been designed to provide students with the opportunity to develop critical and creative knowledge and skills. Media texts, technologies and processes are considered from various perspectives including their structure and features, their industry production and distribution context, audience reception and the impact of media in society. This aspect of the study is integrated with the individual and collaborative design and production of media representations and products. No prerequisites for entry into this subject.

**Unit 1+2:** The purpose of Unit 1 is to enable students to develop an understanding of the relationship between the media, technology and the representations present in media forms. The unit involves the study of the implications of media technology for the individual and society. Students develop practical and analytical skills, including an understanding of the contribution of codes and conventions to the creation of meaning in media products, the role and significance of selection processes in their construction, and the creative and cultural implications of new media technologies.

In Unit 2 students develop their understanding of specialist production stages and roles within the collaborative organisation of media production. Students develop practical skills through undertaking assigned roles during their participation in specific stages of a media production and analyse issues concerning the stages and roles in the media production process. Students also develop an understanding of media industry issues and developments relating to production stages and roles and the broader framework within which Australian media organisations operate.

**Unit 3+4:** In Unit 3 students develop an understanding of production and story elements and explore the role and significance of narrative organisation in fictional film, radio or television programs. Students also consider how production and story elements structure narratives to engage an audience. Students develop practical skills through undertaking exercises related to aspects of the design and production process. They design a media production for a specific media form with the relevant specifications presented as a written planning document with visual representations.

In Unit 4 students develop practical skills in the production of media products and to realise a production design. Organisational and creative skills are refined and applied throughout this process. In this unit students also analyse the ways in which media texts are shaped by social values and the influence of social values in the representations and structure of a media text. The role and influence of the media is also critically analysed in this unit.

### ♦ INSTRUMENTAL MUSIC

Students explore the technical, expressive and creative capabilities of their primary instrument in conjunction with the study of VCE Music Performance or as an extra-curricular activity. They work collaboratively and independently across a wide range of styles and in various ensembles to build on and apply their understanding of melodic, harmonic and rhythmic concepts. This directly links to the study of compositional, historical and cultural elements, as well as an in-depth analysis of performance repertoire. Students receive instrumental lessons from a specialist teacher on their instrument and participate in a range of performances including a Music Tour as part of their ongoing assessment and enjoyment.

### ♦ MUSIC PERFORMANCE

**Unit 1-4:** Students explore the technical, expressive and creative capabilities of their primary instrument, in conjunction with the VCE Music Study Design 2017-2021, preparing them for two end-of-semester performances (*Group and/or Solo*). They work collaboratively and independently across a wide range of coursework tasks and ensembles to build on and apply their understanding of melodic, harmonic and rhythmic concepts through practical and analytical means.

This is demonstrated through large and small ensemble performances, notation, recordings, improvisation / composition and presentation skills.

Students develop specific aural and theory skills in both a practical and formal setting to continue to improve their musicianship with an emphasis on the two end-of-semester examinations.

They mainly focus on post-1980 Australian music to develop critical listening skills, both verbally and in written form, using accurate terminology.

*Prerequisites: students wishing to undertake Music Performance are recommended to have undertaken at least two years of instrumental music tuition on their chosen instrument. Students are strongly advised to be under the tuition of an instrumental teacher and are also recommended to have their own instrument available to them during class-time and at home. If this is not possible, THS endeavour to arrange an appropriate solution.*

### ▶ STUDIO ARTS (ART)

Studio Arts enables students to learn and experiment with processes, techniques and methods associated with a wide range of artistic media. The study endeavours to develop students' awareness of the essential relationships between artists, artworks and society. Students generate, explore and communicate ideas through art. Students develop and use specialised skills in a range of media techniques such as drawing, painting, sculpture, photography and more. This experience provides students with the necessary skills to achieve a self-directed project in Unit 2. The theory component explores how art has developed, and examines artist's working methods. It also investigates professional practices and art industry issues. Students attend different kinds of gallery and exhibition spaces and experience how to curate an exhibition.

**Unit 1+2:** The focus of these units is the investigation of personal ideas and thoughts and the exploration and application of a wide range of materials and techniques. Students will establish an effective design methodology for the production of art works and develop skills in the analysis of art works. Students work in Unit 1+2 towards the development of a folio of work that explores artmaking of personal meaning and cultural expression. Assessment includes the completion of practical and assigned theory tasks.

**Unit 3+4:** Students implement an individual design process leading to the production of a range of potential directions and solutions. They develop and

use their exploration proposal to define the area of creative exploration. In the design process, they record trialling, experimenting, analysing and evaluating the extent to which their art practices successfully communicate their aims and ideas. Students explore professional art practices of artists in relation to particular artworks and art forms and identify the styles in artworks. They also consider the issues that may arise from copyright and appropriation. Students attend different kinds of gallery and exhibition spaces and experience how to curate an exhibition. Students complete a folio of finished artworks at the end of Unit 4 based on the folio exploration of Unit 3.

### ▶ STUDIO ARTS (PHOTOGRAPHY)

In Studio Arts Photography students focus on the study of photographic practice. Students generate, explore and communicate ideas through art. Students develop and use a combination of digital and black and white photography. This experience provides students with the necessary skills to achieve a self-directed project in Unit 2. The theory component explores how art has developed, and examines artist's working methods. It also investigates professional practices and art industry issues. Students attend different kinds of gallery and exhibition spaces and experience how to curate an exhibition.

**Unit 1+2:** The focus of these units is the investigation of personal ideas and thoughts and the exploration and application of a wide range of materials and techniques. Students will establish an effective design methodology for the production of art works and develop skills in the analysis of art works. Assessment includes the completion of practical and assigned theory tasks.

**Unit 3+4:** Students implement an individual design process leading to the production of a range of potential directions and solutions. They develop and use their exploration proposal to define the area of creative exploration. In the design process, they record trialling, experimenting, analysing and evaluating the extent to which their art practices successfully communicate their aims and ideas. Students explore professional art practices of artists in relation to particular artworks and art forms and identify the styles in artworks. They also consider the issues that may arise from copyright and appropriation. Students attend different kinds of gallery and exhibition spaces and experience how to curate an exhibition. Students complete a folio of

finished artworks at the end of Unit 4 based on the folio exploration of Unit 3.

## ► THEATRE STUDIES

In VCE Theatre Studies students interpret playscripts and produce theatre for audiences. Through practical and theoretical engagement with playscripts from the pre-modern era to the present day, students gain an insight into the history and rich possibilities of playscript-based theatrical production and develop understanding and appreciation of the role and place of the practitioner in theatre. Theatre practitioners develop, create and craft productions through research, contextualisation, visualisation and the application of stagecraft. The study covers roles in theatre practice including actor, director, designer, theatre technologist and theatre administrator/manager. Throughout the study, students work with playscripts in both their written form and in performance, studying various areas of stagecraft that can be used to interpret these playscripts. Students study the contexts, that is, the time, places and cultures, of playscripts, as well as their language and theatrical possibilities. They explore ways that meaning can be constructed and conveyed through theatrical performance. They consider the audiences who will engage with their productions and incorporate knowledge and understanding of audience culture, demographic and sensibilities in their interpretations. Students apply stagecraft to collaboratively and individually interpret playscripts and their theatrical possibilities. Through study of playscripts, contribution to the production of plays, and the application of stagecraft, students develop knowledge and understanding of theatre and its practices.

**Unit 1+2:** Unit 1 focuses on the application of acting and other stagecraft in relation to theatrical styles of the pre-modern era. Students work with playscripts from the pre-modern era of theatre, focusing on works created up to 1920 in both their written form and in performance. They also study theatrical and performance analysis and apply these skills to the analysis of a play in performance.

In Unit 2 students study theatrical styles and stagecraft through working with playscripts in both their written form and in performance with an emphasis on the application of stagecraft. Students work with playscripts from the modern era, focusing on works from the 1920s to the present. They study theatrical analysis and production evaluation and

apply these skills to the analysis of a play in performance.

**Unit 3+4:** In Unit 3 students develop an interpretation of a playscript through the stages of the theatrical production process: planning, development and presentation. Students specialise in two areas of stagecraft, working collaboratively in order to realise the production of a playscript. They use knowledge they develop from this experience to analyse the ways stagecraft can be used to interpret previously unseen playscript excerpts. Students also attend a performance selected from the prescribed VCE Theatre Studies Unit 3 Playlist published annually in the *VCAA Bulletin VCE, VCAL and VET*, and analyse and evaluate the interpretation of the playscript in the performance.

In Unit 4 students study a scene and associated monologue from the *Theatre Studies Stagecraft Examination Specifications* published annually by the Victorian Curriculum and Assessment Authority, and develop a theatrical treatment that includes the creation of a character by an actor, stagecraft possibilities, and appropriate research. Students interpret a monologue from within a specified scene using selected areas of stagecraft to realise their interpretation. Students' work for Outcomes 1 and 2 is supported through analysis of a performance they attend selected from the prescribed VCE Theatre Studies Unit 4 Playlist published annually in the *VCAA Bulletin VCE, VCAL and VET*.

## ► VISUAL COMMUNICATION AND DESIGN

This study is intended to assist students in the understanding, use and interpretation of a range of visual communications, elements, and principles and functions of design in communication. The units includes the disciplines of Environmental Design, Architectural design, Graphic Design and Industrial Design. Students will complete a practical folio and written component for each unit.

**Unit 1+2:** Unit 1 introduces the skill set that underpins the design process stages of generating ideas, developing concepts and Unit 2 focuses on the application of visual communication design knowledge, design thinking skills and drawing methods to create visual communications to meet specific purposes in designated design fields.

These units focus on the development of visual language and design thinking skills using observational, visualisation and presentation drawing as the means by which ideas and concepts

are communicated. Students will apply and experiment with range of media and materials to generate drawings that represent form and surface textures. They will use presentation drawing methods that incorporate the use of technical drawing conventions to communicate information and ideas associated with specific fields of design. They investigate how typography and imagery are used in design and apply design thinking skills when exploring ways in which images and type can be manipulated to communicate ideas and concepts. Students will develop an understanding of the design process, learn different approaches to solving design problems and apply their digital design skills to create work.

**Unit 3+4:** In Unit 3 students gain an understanding of the methods designers employ to structure their thinking and communicate ideas. Students apply these skills within the fields of environmental industrial design and Visual communication. Through practical investigation, analysis of existing visual communications and study of designers' professional practice, students will develop and understanding of the processes and methods used to create visual communications.

Unit 4 focus is on the design process, where students will develop two final presentations to meet the requirements of a brief. Having completed their brief and generated ideas in Unit 3, students will continue the design process by developing and refining their concepts for each need stated in the brief. They will utilise a range of digital and manual two- and three-dimensional methods, media and materials. They will investigate how the application of design elements and design principles creates different communication messages with their target audience. Students will reflect on the design process and the design decisions they took in the realisation of their ideas, evaluate their visual communications and devise a pitch to communicate their design thinking and decision making to the intended client.

## HUMANITIES

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### ► ACCOUNTING

Accounting introduces students to recording and reporting for a small business. These are real-life skills which are useful for individual financial literacy, employment in business and management. Anyone wanting to run their own business in the future would benefit from this subject.

**Unit 1+2:** In Unit 1 students explore the establishment of a business and the role of accounting in the determination of business success or failure. In this, it considers the importance of accounting information to stakeholders. Students will analyse, interpret and evaluate the performance of the business using financial and non-financial information. They use these evaluations to make recommendations regarding the suitability of a business as an investment. Students will record financial data and prepare reports for service businesses owned by sole proprietors. In Unit 2 students develop their knowledge of the accounting process for sole proprietors operating a trading business, with a focus on inventory, accounts receivable, accounts payable and non-current assets. Students use manual processes and ICT, including spreadsheets, to prepare historical and budgeted accounting reports. Students analyse and evaluate the performance of the business relating to inventory, accounts receivable, accounts payable and non-current assets. They use relevant financial and other information to predict, budget and compare the potential effects of alternative strategies on the performance of the business. Using these evaluations, students develop and suggest to the owner strategies to improve business performance.

**Unit 3+4:** In Unit 3 students will focus on financial accounting for a trading business owned by a sole proprietor, and highlights the role of accounting as an information system. Students use the double entry system of recording financial data and prepare reports using the accrual basis of accounting and the perpetual method of inventory recording. Students develop their understanding of the accounting processes for recording and reporting and consider the effect of decisions made on the performance of the business. They interpret reports and information presented in a variety of formats and suggest strategies to the owner to improve the performance of the business.

In Unit 4 students will further develop their understanding of accounting for a trading business owned by a sole proprietor and the role of accounting as an information system. Students use the double entry system of recording financial data, and prepare reports using the accrual basis of accounting and the perpetual method of inventory recording. Both manual methods and ICT are used to record and report. Students extend their understanding of the recording and reporting

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

### ► BUSINESS MANAGEMENT

Business Management examines the ways in which managers can use an organisation's resources to achieve the objectives of the enterprise. The study recognises the range of management theories and exposes students to real business scenarios.

**Unit 1+2:** In Unit 1 students focus on businesses of all sizes as major contributors to the economic and social well being of a nation. Students explore business creation, from inception to the establishment of the enterprise. The success of this process establishing the basis of wealth creation which underpins the standard of living in Australia. Furthermore, students explore the factors affecting business enterprises from the environments within which businesses operate.

In Unit 2 students focus upon complying with legal requirements to create a business, as well as making decisions about how best to establish a system of financial record keeping, staff the business and establish a customer base. Students investigate the essential features of effective marketing and consider the best way to meet the needs of the business in terms of human resources, public relations strategies and methods of meeting corporate social responsibility obligations.

**Unit 3+4:** In unit three students explore the key processes and issues concerned with managing a business efficiently and effectively to achieve the business objectives. Students examine the different types of businesses and their respective objectives. Students consider corporate culture, management styles, management skills, operations, human resources and the relationship between each of these.

In Unit two students explore the constant pressure under which business must adapt and change to

meet their objectives. Students consider the importance of reviewing key performance indicators to determine current performance and the strategic management necessary to position a business for the future. Further, students investigate the importance of leadership in change management using a contemporary business case study from the past four years.

### ► GEOGRAPHY

The study of Geography is useful not only for a variety of careers, but will enable you to better understand your world. With this deeper understanding of the Earth's varied environments, you will be better able to participate as an effective global citizen in the sustainable use and management of the world's resources. Geographers ask questions such as: What is there? Where is it? Why is it there? What are the effects of it being there? How is it changing over time? Should it be like this? What will it be like in the future?

**Unit 1+2:** In Unit 1 students will investigate the geographic characteristics of natural environments such as volcanic, forest, and coastal environments (locally and on a global scale). Students will examine how both natural processes and human activities can change these environments.

In Unit 2, students will investigate the characteristics of rural and urban environments such as: Melbourne's CBD, the Docklands, and the Yarra Valley regions, which have developed as a direct result of human activities and their interactions with the natural environment. Rural and urban environments vary significantly from place to place and global comparisons will be made with places such as Vietnam and California.

### ► HISTORY

Students analyse the way history is represented in film, cartoons, posters, paintings and written documents. Students improve their writing, analysis, research and reporting skills. History tries to make meaning of the past and answer questions like: Why is the world like it is? What are the forces at work behind significant social, cultural and political change?

**Unit 1+2:** In Unit 1, covering the years between 1918 and 1939, students explore the nature of political, social and cultural change in the period between the world wars. Students study the changes that occurred in the aftermath of WWI that

were to have an impact for decades to come: the post-war treaties, new political and social movements and ideologies such as fascism. Using the example of Weimar and Nazi Germany, students analyse how the power of the state was used to impose controls on the way people lived and to silence criticism.

Unit 2 of Twentieth century history covers the years between 1945 and 2000. Students explore the nature and impact of the Cold War and challenges and changes to existing political, economic and social arrangements. The competing ideologies of democracy and communism are examined. The period also saw challenge and change to the established order. The rise of social movements, such as the civil rights movement, are examined and students analyse the impact of challenges to existing values and traditions. Finally, students examine the historical origins and nature of the conflict which transformed Afghanistan in the second half of the century.

In these units students construct arguments using primary sources as evidence and evaluate the extent to which new movements and ideologies brought change to the lives of people. They consider how different historical perspectives give an insight into the continuity and change experienced by people in this era. Students also evaluate historical interpretations about the causes and consequences of these changes.

**Unit 3+4 (Revolutions):** In Units 3+4 Revolutions students investigate the significant historical causes and consequences of political revolution. Students analyse the interplay of ideas, events, individuals and popular movements which cause revolution. They also study the consequences of revolution on the political and social structures of the post-revolutionary society and assess the challenges to consolidating new regimes which can result in a compromise of revolutionary ideals.

In these units students develop an understanding of the causes and consequences in the revolutionary narrative and construct arguments about the past using primary sources as evidence and evaluate the extent to which the revolution brought change to the lives of people. They consider how perspectives of the revolution give an insight into the continuity and change experienced by those who lived through dramatic revolutionary moments. Students also evaluate historical interpretations about the causes and consequences of revolution and the effects of change instigated by the new order. At Thornbury High School, students study the American

Revolution of 1776 and the Russian Revolution of October 1917.

## ♦ INDUSTRY & ENTERPRISE

VCE Industry and Enterprise investigates work and its place in work settings, industries and society. The study explores the vocational, economic, social and cultural aspects of work and encourages students to undertake a theoretical and practical investigation of these aspects throughout the four units. Students investigate trends and patterns in Australian workplaces and industries and significant issues affecting Australian industries, and analyse the industry responses to these issues. A key feature of VCE Industry and Enterprise is the structured workplace learning that students are required to undertake.

**Unit 1+2:** Unit 1 prepares students for effective workplace participation. Their exploration of the importance of work-related skills is integral to this unit. Students develop work-related skills by actively exploring their individual career goals and pathways. They observe industry and employment trends and analyse current and future work options. Students build work-related skills that assist in dealing with issues affecting participants in the workplace. Students examine the diverse contexts in which work takes place in Australian society by investigating a range of work settings. They investigate job tasks and processes in work settings as well as entry-level requirements associated with work in selected industries.

In Unit 2 students explore the development of enterprising behaviour, leadership and innovation in different settings within industry and in the context of significant issues faced by industry. Students learn that enterprising and leadership behaviours are vital for success in diverse personal, work and community settings. All work settings exist within a wider industry context and ongoing workplace enterprise and innovation are pivotal to industry success. Students investigate the characteristics and qualities of successful entrepreneurs in different settings, and investigate the relationship between leadership behaviour and the development of an individual's work-related skills.

## ♦ LEGAL STUDIES

Students will gain a general understanding of how the law operates and how it affects the community and us. Students will get to see the law in operation

through visits to the courts and prisons, keeping up to date with changes to the law via the media, and from guest speakers. Students will also get to appreciate how the law affects them directly.

**Unit 1+2:** 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.

Students undertake a detailed investigation of two criminal cases and two civil cases to form a judgement on the ability of sanctions and remedies to achieve the principles of justice. Students develop an understanding of the way rights are protected in Australia and in one other country, and possible reforms to the protection of rights. They examine a significant case in relation to the protection of rights in Australia.

**Unit 3+4:** 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 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 victims in the criminal justice system, role of the judge, jury, legal practitioners and the parties, and the ability of sanctions and remedies to achieve their purpose. Students investigate the extent to which the principles of justice are upheld in the justice system. They discuss recent and recommended reforms to enhance the ability of the justice system to achieve the principles of justice.

Students explore how the Australian Constitution establishes the law-making powers of the Commonwealth and state parliaments, 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. Students apply legal reasoning and information to actual scenarios.

## ► PHILOSOPHY

**Unit 1+2:** What is the nature of reality? How can we acquire certain knowledge? These are some of the questions that have challenged humans for millennia and underpin ongoing endeavours in areas as diverse as science, justice and the arts. Unit 1 engages students with fundamental philosophical questions through active, guided investigation and critical discussion of two key areas of philosophy: epistemology and metaphysics. The emphasis is on philosophical inquiry – ‘doing philosophy’ – and hence the study and practice of techniques of logic are central to this unit. As students learn to think philosophically, appropriate examples of philosophical viewpoints and arguments, both contemporary and historical, are used to support, stimulate and enhance their thinking about central concepts and problems. Students investigate relevant debates in applied epistemology and metaphysics, and consider whether the philosophical bases of these debates continue to have relevance in contemporary society and our everyday lives.

What are the foundations of our judgments about value? What is the relationship between different types of value? How, if at all, can particular value judgments be defended or criticised? Unit 2 invites students to explore these questions in relation to different categories of value judgment within the realms of morality, political and social philosophy and aesthetics. Students also explore ways in which viewpoints and arguments in value theory can inform and be informed by contemporary debates.

## LANGUAGES

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### ► CHINESE SECOND LANGUAGE

**Unit 1+2:** The study of Chinese develops students’ ability to understand and use a language, which is spoken by about a quarter of the world’s population. There are many spoken varieties of Chinese, and Modern Standard Chinese is pre-eminent among these. It is the major language of communication in China, Taiwan and Singapore, and is widely used by Chinese communities throughout the Asia-Pacific region, including Australia.

- It is designed to enable students to:
- use Chinese to communicate with others;

- understand and appreciate the cultural contexts in which Chinese is used;
- understand their own culture(s) through the study of other cultures;
- understand language as a system;
- make connections between Chinese and English, and/or other languages;
- apply Chinese to work, further study, training or leisure

The study of Chinese in Units 1 and 2 will comprise the following themes from which the topics for study are selected:

- The Individual
- The Chinese-speaking communities
- The Changing world

Students will use knowledge and skills to communicate in written and oral formats. Students will also translate written Chinese texts into English.

#### ♦ GREEK

**Unit 1+2:** The study of Greek develops students' ability to understand and use a language that is one of the official languages of the European Union and the second most widely spoken language in Australia. Greek is shaped by over 3,000 years of historical, linguistic and cultural continuity. The heritage of ancient Greece forms the basis of Western civilisation and has been integral to European thought. It continues to influence such fields of human endeavour as the arts, architecture, literature, philosophy, politics and the sciences. The study of Greek contributes to the overall education of students, particularly in the areas of communication, cultural understanding, literacy and general knowledge. The ability to communicate in Greek may, in conjunction with other skills, also enhance vocational opportunities in fields such as the arts, banking, diplomacy, education, law, medicine, shipping, social services and tourism.

It is designed to enable students to:

- use Greek to communicate with others;
- understand and appreciate the cultural contexts in which Greek is used;
- understand their own culture(s) through the study of other cultures;
- understand language as a system;
- make connections between Greek and English, and/or other languages;
- apply Greek to work, further study, training or leisure.

The study of Greek in Units 1 & 2 will comprise the following prescribed themes from which the topics for study are selected:

- The individual
- The Greek-speaking communities

- The changing world

Topics for study will include a selection from the following: Personal opinions and identity, Social relationships, The school experience, Future aspirations, Greek-Australian lifestyles, The Greek cultural heritage, myths and legends, Historical/Contemporary people and events, The migrant experience, Contemporary issues and The world of work.

#### ♦ ITALIAN

**Unit 1+2:** The study of Italian develops students' ability to understand and use a language that is one of the official languages of the European Union and the second most widely spoken language in Australia. It also provides students with a direct means of access to the rich and varied culture of the many communities around the world for whom Italian is a major means of communication.

It is designed to enable students to:

- use Italian to communicate with others
- understand and appreciate the cultural contexts in which Italian is used,
- extend their knowledge and skills in understanding, speaking and writing the language,
- converse in Italian on a range of topics
- produce personal, imaginative and informative writing in Italian,
- understand aural, visual and written Italian information ,
- select from and use this information in writing in Italian for a given purpose.

The study of Italian in Units 1 & 2 will comprise the following themes from which the topics for study are selected:

- The individual
- The Italian-speaking communities
- The changing world

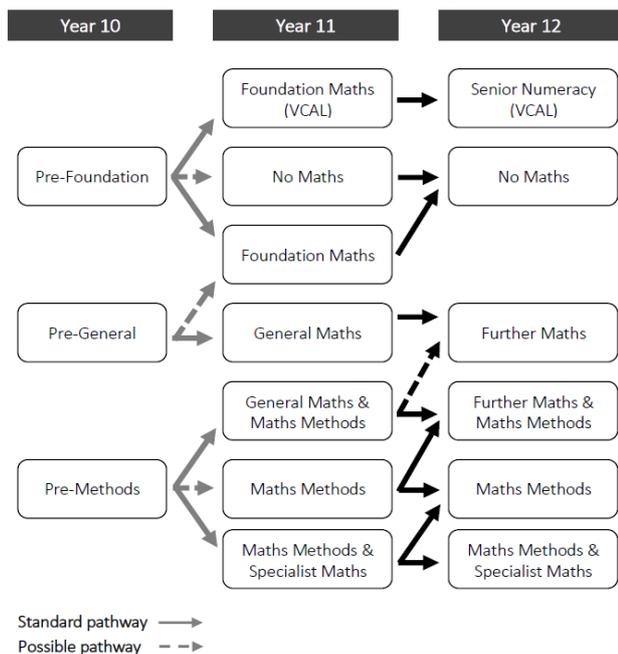
Topics for study will include a selection from the following: who am I, my past, my memories, pastimes, my ambitions, the life of young people in Italy and Australia, Italian passions: food, sport, music, the Renaissance in Italy, Italian migration to Australia, Italian cinema, travelling in Italy, social changes brought about by new technologies and the world of work in the 21<sup>st</sup> century.

#### MATHEMATICS

Mathematics provides both a framework for thinking and a means of symbolic communication that is powerful, logical, concise and precise. It also provides a means by which people can understand

and manage their environment. VCE Mathematics is designed to promote students' awareness of the importance of mathematics in everyday life in a technological society, and confidence in making effective use of mathematical ideas, techniques and processes. It is also designed to provide access to worthwhile and challenging mathematical learning in a way which takes into account the needs and aspirations of a wide range of students.

The flowchart below shows some of the many possible mathematics pathways from Year 10 through to the end of Year 12.



## ► FOUNDATION MATHEMATICS

**Unit 1+2:** Foundation Mathematics provides for the continuing mathematical development of students entering VCE needing mathematical skills to support their other studies, and who do not intend to undertake Unit 3+4 studies in VCE Mathematics the following year. For VCAL students, it provides two units towards their Intermediate Certificate.

In Foundation Mathematics there is a strong emphasis on using mathematics in practical contexts relating to everyday life, personal work and study. Students are encouraged to use appropriate technology in all areas of their study, and require a scientific calculator.

The areas of study for these units are Space & Shape, Patterns in Number, Handling Data and Measurement & Design.

*Please note: Foundation Mathematics terminates at the end of Year 11, and does not lead into any VCE Unit 3+4 mathematics study.*

## ► GENERAL / FURTHER MATHEMATICS

**Unit 1+2 (General):** This course is designed for students who have demonstrated a sound understanding of Year 10 Mathematics. Topics studied include Practical Arithmetic, Linear Equations & Relations, Statistics, Financial Arithmetic, Matrices and Graphs & Networks. Across all topics, students are expected to be able to apply techniques, routines and processes involving arithmetic, lists and tables, diagrams and geometric constructions, algebraic manipulation, equations and graphs with and without the use of technology. Students must be able to demonstrate their skills in using the CAS Calculator (Casio ClassPad) to produce results and carry out analysis.

This subject is especially recommended for students who are unsure of their future pathway.

Prerequisite: Year 10 Pre-General Mathematics or Year 10 Pre-Methods Mathematics

**Unit 3+4 (Further):** Further Mathematics follows on from General Mathematics Unit 1+2. The areas of study are Data analysis (40%), Recursion & Financial Modelling (20%), Matrices (20%) and Networks & Decision Mathematics (20%). In undertaking these units, students are expected to be able to apply techniques, routines and processes involving arithmetic, lists and tables, diagrams and geometric constructions, algebraic manipulation, equations, and graphs, with and without the use of technology. Students must be able to demonstrate their skills in using the CAS Calculator (Casio ClassPad) to produce results and carry out analysis.

Prerequisite: General Mathematics Unit 1+2 or Mathematical Methods Unit 1+2

## ► MATHEMATICAL METHODS

**Unit 1+2:** Mathematical Methods Unit 1+2 provides an introductory study of simple elementary functions of a single real variable, algebra, calculus, probability and statistics and their applications in a variety of practical and theoretical contexts. The areas of study are Functions & Graphs, Algebra, Calculus and Probability & Statistics. In undertaking this unit, students are expected to be able to apply techniques, routines and processes involving rational and real arithmetic, sets, lists and tables, diagrams and geometric constructions, algebraic manipulation, equations, graphs and differentiation with and

without the use of technology. Students must be able to demonstrate their skills in using the CAS Calculator (Casio ClassPad) to produce results and carry out analysis.

Prerequisite: Year 10 Pre-Methods Mathematics

**Unit 3+4:** Mathematical Methods Unit 3+4 consists of the areas of study Functions & Graphs, Algebra, Calculus and Probability & Statistics. In undertaking these units, students are expected to be able to apply techniques, routines and processes involving rational and real arithmetic, sets, lists and tables, diagrams and geometric constructions, algebraic manipulation, equations, graphs, differentiation, anti-differentiation, integration and inference with and without the use of technology. They should have facility with relevant mental and by-hand approaches to estimation and computation. The use of numerical, graphical, geometric, symbolic and statistical functionality of technology for teaching and learning mathematics, for working mathematically, and in related assessment, is to be incorporated throughout each unit as applicable.

Prerequisite: Mathematical Methods Unit 1+2

### ♦ SPECIALIST MATHEMATICS

**Unit 1+2:** Specialist Mathematics Unit 1+2 provide a course of study for students who wish to undertake an in-depth study of mathematics, with an emphasis on concepts, skills and processes related to mathematical structure, modelling, problem solving and reasoning. This study has a focus on interest in the discipline of mathematics in its own right and investigation of a broad range of applications, as well as development of a sound background for further studies in mathematics and mathematics related fields. The areas of study are Algebra & Structure, Arithmetic & Number, Discrete Mathematics, Geometry, Measurement & Trigonometry, Graphs of Linear and Non-Linear Relations and Statistics.

In undertaking these units, students are expected to be able to apply techniques, routines and processes involving rational, real and complex arithmetic, sets, lists and tables, diagrams and geometric constructions, algebraic manipulation, equations and graphs with and without the use of technology. They should have facility with relevant mental and by-hand approaches to estimation and computation, and students must be able to demonstrate their skills in using the CAS Calculator (Casio ClassPad) to produce results and carry out analysis.

Prerequisite: Year 10 Pre-Methods Mathematics

*Co-requisite: Mathematical Methods Unit 1+2*

**Unit 3+4:** Specialist Mathematics Units 3+4 consist of the areas of study Functions & Graphs, Algebra, Calculus, Vectors, Mechanics and Probability & Statistics. There is a focus on reasoning and applications across a range of modelling contexts. In undertaking these units, students are expected to be able to apply techniques, routines and processes involving rational, real and complex arithmetic, sets, lists and tables, diagrams and geometric constructions, algebraic manipulation, equations, graphs, differentiation, anti-differentiation and integration and inference with and without the use of technology. They should have facility with relevant mental and by-hand approaches to estimation and computation, and students must be able to demonstrate their skills in using the CAS Calculator (Casio ClassPad) to produce results and carry out analysis.

This subject provides an important background for students wishing to study Engineering, Mathematics or Physics at a tertiary level.

Prerequisite: Mathematical Methods Unit 1+2 and Specialist Mathematics Unit 1+2.

*Co-requisite: Mathematics Methods Unit 3+4.*

## P.E. & HEALTH

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### ♦ HEALTH & HUMAN DEVELOPMENT

**Unit 1+2:** Through the study of VCE Health and Human Development, students investigate health and human development in local, Australian and global communities. Health is a dynamic state that is influenced by complex interrelationships between individuals and behavioural factors, as well as physical and social environments.

The Health and Human Development study approaches the concept of 'development' as a continuum that begins with individual human development and progresses toward human development at societal level. The two levels of change are explored at two levels; Individual changes and changes from a global perspective. Units 1 & 2 focus on individual health and individual human development of Australia's population, from conception to death.

**Unit 3+4:** In Unit 3 students analyse the health status of Australia's population, together with variations in health status of population groups

within Australia and discuss the role of approaches to overall health and wellbeing in improving Australia's health status. Students will also discuss and analyse approaches to improve indigenous health and health promotion initiatives, as well as analyse Australia's health system and the different roles of government and non-government organisations in promoting health.

In Unit 4 students take a global perspective on achieving sustainable improvements in health and human development. Students build understanding of health in a global context through examining changes in burden of disease over time as well as sustainability and human development together with global action to improve health and wellbeing and human development, focusing on the United Nations' Sustainable Development Goals (SDGs) and the work of the World Health Organization (WHO).

### ♦ PHYSICAL EDUCATION

**Unit 1+2:** In Unit 1 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.

During Unit 2 students develop understanding of physical activity, sport and society from a participatory perspective. Students are introduced to types of physical activity and the role participation in physical activity and sedentary behaviour plays in their own health and wellbeing as well as in other people's lives in different population groups.

**Unit 3+4:** Unit 3 introduces students to the biomechanical and skill acquisition principles used to analyse human movement skills and energy production from a physiological perspective. Students use a variety of tools and techniques to analyse movement in physical activity, sport and exercise. They use practical activities to demonstrate how correct application of these principles can lead to improved performance in physical activity and sport. Students investigate the three energy systems in relation to performance in

physical activity, sport and exercise. Students explore the causes of fatigue and consider different strategies used to postpone fatigue and promote recovery.

In Unit 4, students analyse movement skills from a physiological, psychological and sociocultural perspective, and apply relevant training principles and methods to improve performance within physical activity at an individual, club and elite level. Students analyse skill frequencies, movement patterns, heart rates and work to rest ratios to determine the requirements of an activity. Students participate in a variety of training sessions designed to improve or maintain fitness and evaluate the effectiveness of different training methods.

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## SCIENCE

### ♦ BIOLOGY

**Unit 1+2:** Biology students are introduced to some of the challenges to an organism in sustaining life. Students examine the cell as the structural and functional unit of life, from the single celled to the multicellular organism, and the requirements for sustaining cellular processes in terms of inputs and outputs. They analyse types of adaptations that enhance the organism's survival in a particular environment and consider the role homeostatic mechanisms play in maintaining the internal environment. Students investigate how a diverse group of organisms form a living interconnected community that is adapted to, and utilises, the abiotic resources of its habitat. They will learn that all cells are derived from pre-existing cells through the cell cycle and examine the process of DNA replication in both prokaryotic and eukaryotic organisms. The role of stem cells in the differentiation, growth, repair and replacement of cells in humans is examined, and their potential use in medical therapies is considered.

**Unit 3+4:** Units 3 and 4 Biology focus on the cell as the dynamic system of interacting molecules that define life. Students explore the importance of the structure of plasma membrane in allowing substances to enter and exit the cell. The structure of DNA, importance of enzymes and response by our cells to signalling molecules is investigated along with reactions between antigens and antibodies in relation to pathogens and disease. Applications of biotechnology and manipulation of DNA is also explored.

Students further explore how the Earth has changed over time including relatedness between species and the impact of various events on a population's gene pool. They investigate how changes over time influences evolution by natural selection which leads to the rise of new species. Students explore how technological developments in the fields of comparative genomics, molecular homology and bioinformatics have resulted in evidence of change through measurements of relatedness between species. They examine the human fossil record and the interrelationships between human biological and cultural evolution.

## ♦ CHEMISTRY

**Unit 1+2:** Unit 1 focuses on the chemical properties of a range of materials from metals and salts to polymers and nanomaterials. The students will explore the relationships between properties, structure and bonding forces within and between particles that vary in size from the visible, through nanoparticles, to molecules and atoms. The students also examine the modification of metals, assess the factors that affect the formation of ionic crystals and investigate a range of non-metallic substances from molecules to polymers and giant lattices and relate their structures to specific applications. Students are introduced to quantitative concepts in chemistry including the mole concept. Throughout the unit students will become familiar with the language of chemistry including symbols, formulas, chemical nomenclature and equations to represent and explain observations and data from experiments.

Unit 2 focuses on the study of water and its uniqueness as a chemical. The students explore the physical and chemical properties of water, the reactions that occur in water and various methods of water analysis. The students investigate solubility, concentration, pH and reactions in water including precipitation, acid-base and redox. Students are introduced to stoichiometry and to analytical techniques and instrumental procedures that are used to determine concentrations of different species in water samples, including chemical contaminants.

**Unit 3+4:** Students explore energy options and the chemical production of materials with reference to efficiencies, renewability and the minimisation of their impact on the environment. They investigate energy transformations, the use of stoichiometry to calculate the amounts of reactants and products involved in combustion reactions, and calculations

of the amounts of energy released and their representations. Students explore principles of galvanic cells, fuel cells and electrolytic cells, use the electrochemical series to predict and write half and overall redox equations, and apply Faraday's laws to calculate quantities in electrolytic reactions.

Students investigate the structural features, bonding, typical reactions and uses of the major families of organic compounds including those found in food. Students consider the nature of the reactions involved to predict the products of reaction pathways and to design pathways to produce particular compounds from given starting materials. Students investigate key food molecules through an exploration of their chemical structures, the hydrolytic reactions in which they are broken down and the condensation reactions in which they are rebuilt to form new molecules. In this context the role of enzymes and coenzymes in facilitating chemical reactions is explored.

## ♦ PHYSICS

**Unit 1+2:** Students explore how physics explains phenomena, at various scales, which are not always visible to the unaided human eye. They use thermodynamic principles to explain phenomena related to changes in thermal energy. Students apply thermal laws when investigating energy transfers within and between systems, and assess the impact of human use of energy on the environment. They examine the motion of electrons and explain how it can be manipulated and utilised. Students also develop conceptual models to analyse electrical phenomena and undertake practical investigations of circuit components. They investigate the ways in which forces are involved both in moving objects and in keeping objects stationary.

**Unit 3+4:** Students examine the production of electricity and its delivery to homes. They consider the field model as a construct that has enabled an understanding of why objects move when they are not apparently in contact with other objects. They explore the interactions, effects and applications of gravitational, electric and magnetic fields. Students use Newton's laws to investigate motion in one and two dimensions, and are introduced to Einstein's theories to explain the motion of very fast objects and consider how developing technologies can challenge existing explanations of the physical world.

Further to this, students explore the use of wave and particle theories to model the properties of light and matter. Students investigate light by using a particle model to explain its behaviour. Students learn to think beyond the concepts experienced in everyday life to study the physical world from a new perspective. A student-designed practical investigation related to waves, fields or motion is undertaken either in Unit 3 or Unit 4, or across both Unit 3 and Unit 4, and is assessed in Unit 4.

## ► PSYCHOLOGY

**Unit 1+2:** Students investigate the structure and functioning of the human brain and the role it plays in the overall functioning of the human nervous system. They explore brain plasticity and the influence that brain damage may have on a person's psychological functioning and consider the complex nature of psychological development, including situations where psychological development may not occur as expected. Students also investigate cognitive development and how this changes throughout the lifespan from infancy to old age. 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 an individual and groups.

**Unit 3+4:** Students examine how the human nervous system enables a person to interact with the world around them. They explore how stress may affect a person's psychological functioning and consider the causes and management of stress. They investigate how mechanisms of memory and learning lead to the acquisition of knowledge, the development of new capacities and changed behaviours. They consider the limitations and fallibility of memory and how memory can be improved. Students also examine the nature of consciousness and how changes in levels of consciousness can affect mental processes and behaviour. They consider the role of sleep and the impact that sleep disturbances may have on a person's functioning. Students explore the concept of a mental health continuum and apply a biopsychosocial approach, as a scientific model, to analyse mental health and disorder. They use specific phobia to illustrate how the development and management of a mental disorder can be considered as an interaction between biological, psychological and social factors. A student practical investigation related to mental processes and

psychological functioning is undertaken in either Unit 3 or Unit 4, or across both Units 3 and 4, and is assessed in Unit 4.

## TECHNOLOGIES

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### ► COMPUTING

**Unit 1+2 (Computing):** Students focus on how data, information and networked digital systems can be used to meet a range of users' current and future needs. They collect primary data when investigating an issue and create a digital solution that graphically presents the findings of the investigation. Students also examine the technical underpinnings of wireless and mobile networks, and security controls to protect stored and transmitted data. They acquire and apply their knowledge of information architecture and user interfaces, when creating a website to present different viewpoints on a contemporary issue.

Students also focus on data and how the application of computational systems support the creation of solutions that automate the processing of data. They develop, computational thinking skills when using a programming language to create solutions and a sound understanding of data and how a range of software tools can be used to extract data from large repositories and manipulate it to create visualisations that are clear, usable and attractive, and reduce the complexity of data. Students apply problem-solving methodology to create a solution using database management software and explain how they are personally affected by their interactions with a database system.

**Unit 3+4 (Informatics):** Students focus on the characteristics of data and how it is acquired, managed, manipulated and interpreted to meet a range of needs. Students use relational database management system software to create a database solution and a graphics tool to represent how data flows on a website. They also frame a hypothesis, and gather, manipulate and interpret data to draw conclusions that support or refute the hypothesis.

Students also focus on strategies and techniques for manipulating, managing and securing data and information to meet a range of needs. Students create a multimodal online solution, then present the conclusions drawn from their hypothesis in Unit 3. They also examine how organisations protect the integrity and security of data that they dispose of, and store.

## ► FOOD STUDIES

VCE Food Studies takes an interdisciplinary approach to the exploration of food, with an emphasis on extending food knowledge and practical food making skills. Students explore food from a wide range of perspectives studying past and present patterns of eating, Australian and global food production systems and the many physical and social functions and roles of food in society.

**Unit 1+2:** This unit focuses on food from historical and cultural perspectives. Students investigate the origins and roles of food through time and across the world. Area of Study 1 explore how humanity has historically sourced its food, examining the general progression from hunter-gatherer to rural-based agriculture, to today's urban living and global trade in food. 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.

In Unit 2 students investigate food systems in contemporary Australia. Area of Study 1 focuses on commercial food production industries, while Area of Study 2 looks at food production in small-scale domestic settings, as both a comparison and complement to commercial production. Students gain insight into the significance of food industries to the Australian economy and investigate the capacity of industry to provide safe. Students use practical skills and knowledge to produce foods and consider a range of evaluation measures to compare their foods to commercial products.

**Unit 3+4:** Unit 3 investigates the many roles and everyday influences of food. Area of Study 1 explores the science of food: our physical need for it and how it nourishes and sometimes harms our bodies. Students investigate the physiology of eating and appreciating food, and the microbiology of digestion. They analyse the scientific rationale behind the Australian Dietary Guidelines and the Australian Guide to Healthy Eating. Area of Study 2 focuses on influences on food choice: how communities, families and individuals change their eating patterns over time. The practical component of this unit enables students to understand food science terminology.

In Unit 4 students examine debates about global and Australian food systems. Area of Study 1

focuses on issues about the environment, ecology, ethics, farming practices, the development and application of technologies. Area of Study 2 focuses on individual responses to food information and misinformation and the development of food knowledge, skills and habits to empower consumers to make discerning food choices. The practical component of this unit provides students with opportunities to apply their responses to environmental and ethical food issues, and to extend their food

## ► PRODUCT DESIGN & TECHNOLOGY

**Unit 1+2:** In VCE Product Design and Technology students assume the role of a designer-maker. Designers play an important part in our daily lives. They determine the form and function of the products we use. They transform ideas into drawings and plans for the creation and manufacture of useful products that fulfil human needs and wants. VCE Product Design and Technology can inform sustainable behaviours and develop technical skills to present multiple solutions to everyday life situations. It contributes to creating confident and unique problem solvers and project managers well equipped to deal with the multidisciplinary nature of modern workplaces.

Recent history has highlighted the overuse of resources to create an ever-increasing array of products and this has given designers an increased responsibility to think sustainably. In Units 1 & 2 students develop an understanding of the consequences of product design choices. They develop the necessary skills to critically analyse existing products and to develop their own creative solutions that may be seen as improvements on the original design.

Students can choose to work with wood, metal, plastic or textiles. VCE Product Design and Technology can provide a pathway to a range of related fields such as industrial or product design, interior and exhibition design, engineering, fashion, furniture, jewellery, textile or ceramic design.

## **VET SUBJECTS**

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### **▶ KITCHEN OPERATIONS (SIT20416 Certificate II)**

This practical course is designed to introduce students to the hospitality industry. The program aims to provide students with skills in customer service and workplace communication, in addition to food and beverage training. Commercial cookery forms a large part of the training within this course.

Graduates may find work in a variety of hospitality establishments, such as coffee shops, restaurants, function centres, hotels, clubs and casinos.

### **▶ SPORT & RECREATION (Certificate II)**

This course provides you with the knowledge and skills to work in the sport and recreation industry. Pathways are available for further studies in Certificate III or IV in Sport and Recreation and other sport programs. Core subjects include; Organise and complete daily work activities, apply first aid and work effectively in sport and recreation environments.