YEAR 11 -12
SENIOR SCHOOL
COURSE GUIDELINES
2016 - 2017

Year 11 – 12 SENIOR SCHOOL COURSE GUIDELINE 2016 – 2017

INDEX

Macleod College

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Victorian Curriculum and Assessment Authority No. 01064

Senior School Team

The Senior School Team is a dynamic team who is responsible for the management of the general day-to-day issues generated by students in Years 10 – 12.

The team is involved in the development, implementation and management of proactive programs that enhance student engagement and ultimately learning both within and outside of the classroom.

These programs are designed to cater for the needs of students in Years 10 – 12, their parents, our community and of the College, consistent with the College's Strategic Plan goals and priorities, vision, mission, values and beliefs.

Some of the roles of the team include:-

- monitoring individual student progress
- ensuring effective reporting of student progress
- maintaining clear and open communication with parents, support personnel and, where appropriate, external agencies
- monitoring attendance
- ensuring effective support structures are in place
- providing key support in student welfare
- ensuring an effective operation of the College Code of Conduct
- promoting student involvement in co-curricular activities
- acknowledging and promoting student achievement across all areas both within and outside of school
- enhancing the involvement of parents in their children's education
- attracting the involvement of both the local and wider communities in the College.

Glossary of Terms

Academic: Theoretical learning which can provide a variety of skills and knowledge.

ATAR*:* ***Australian Tertiary Admission Rank****. The overall ranking on a scale of zero to 99.95 that a* student receives based on his/her Study Scores. The ATAR is calculated by VTAC and used by universities, TAFE institutes and independent tertiary colleges to select students for courses.

Macleod Graduation Certificate: An award given to all students who successfully complete Macleod graduation requirements at Year 12 level.

Macleod Subjects: Units of study at Year 10 accredited by Macleod College. You will acquire skills and knowledge preparing for VCE.

Pathway: The name given to education, training and LifeWork options.

Prerequisite: A subject that must be completed before entry into another subject or course.

Primary Four: A combination of subjects used in the calculation of your ATAR score; an English, ESL or Literature, and your next best three results. These four subjects will be counted in full when your ATAR is calculated.

Scaling: An adjustment made to Study Scores by VTAC based on a statistical moderation process.

ASBA Australian School Based Apprenticeship: A nationally accredited apprenticeship undertaken as part of your studies.

Semester: Two terms of study, a half-year.

Sequence: The combined study of Units 3 and 4.

Study Score: A score from zero to 50 which shows how a student performed in a VCE study, relative to all other students doing the same study. It is based on the student's results in school assessments and examinations.

TAFE Technical and Further Education: A training college offering courses designed for providing students with skills for employment.

Tertiary: Continuing education after completing Senior School through TAFE, University or Private College.

Unit: The amount of work allocated to complete a one semester length subject of study.

University: An educational institution offering degree courses usually requiring three or more years of study. These can be academic or vocational.

University Enhancement: A course of study accredited by a university for inclusion in the VCE as a 6th subject.

VCAA Victorian Curriculum and Assessment Authority: It administers the VCE.

VCE: Victorian Certificate of Education.

VCE Subjects: Subjects accredited by VCAA for study in the VCE program.

VET in the VCE subjects Vocational Education and Training. Certificate Courses available as part of the VCE.

Vocational: Practical learning directed towards a particular occupation and its skills.

VTAC Victorian Tertiary Admissions Centre: administers the application and selection process of tertiary places within Victoria.

About Macleod College Senior School: The Pathway to Your Future

How to Study in the Senior School

Senior School students are managers of their individual study programs. Your week will include timetabled classes for each of your subjects and a number of personal study sessions. Assemblies will also be included.

For each of your subjects you will be expected to attend classes, complete preparation reading, work tasks and assignments. Much of this work will be individual (there is not as much group work in Senior School).

You will need to be organised!
Effective time management is a life and leadership skill that all students should aim to develop. By learning to organise your time and your scheduled study sessions you can achieve great things.

Study sessions are available to provide time for you to organise and manage your learning needs (you have the daily planner to help you).

- complete work assignments
- seek out help or conference with teachers, Senior School Team Members and the Careers Counsellor
- develop and participate in study groups with students taking the same subjects as yourself
- work towards completing MACLEOD COLLEGE Graduation Certificate requirements
- research, develop and extend your study programs
- explore career pathways

It is up to you to maximise your personal and academic success. You are encouraged to make decisions, accept responsibility and direct your own learning. This will help equip you for life beyond school.

Senior School Explained

Flexibility within the Senior School - Macleod College offers a variety of courses; there are many ways a program of study can be individually tailored for a Senior School's student. You may study a combination of Macleod, VCE, VET in the VCE and VCAL. Year 13 and University Enhancement subjects are available to students who have achieved exceptional results in unit 3/4 studies. Some students undertake a School Based New Apprenticeship to complement their studies.

Macleod College Core and Elective subjects - At Year 10 these offer the opportunity to consolidate skills and explore new subject areas. They are also often regarded as prerequisites for VCE studies in equivalent areas. They are accredited by the College.

VCE units - VCE Units are programs of study developed and managed by an external body, the VCAA (Victorian Curriculum and Assessment Authority). These cover a wide range of subjects and study styles.

VET units - These are vocational subjects. They provide the opportunity to develop work-related competencies and skills. There is often a Work Placement requirement. Students obtain credit for VCE units and also receive a nationally recognised VET Certificate.
Macleod College is part of the Northern Metropolitan VET Cluster and a wide range of VET subjects are available. Students are advised to refer to the Northern Metropolitan VET Cluster Handbook for more specific information.

University Enhancement - Enhancement studies are first year university studies available to VCE students who are very able academically. There are strict entrance requirements set by the University. Upon satisfactory completion these studies can be used as a sixth study bonus in the calculation of the ATAR.

ASBA

Australian School Based Apprenticeship **(ASBA) -** These are available in a wide range of vocational areas, students are advised to meet with the Transitions & Pathways Coordinator for more information. Students study a relevant VET/VCE subject and pursue paid employment for one day a week in their chosen field whilst studying for their VCE. It is important to choose a program which is challenging and stimulating, that you will enjoy and which will utilise your interests, skills and abilities.

First Year – Year 10 - Year 10 students study six core areas for the whole year (English, Maths, Science, Humanities & PE/Health). There are also 3 Elective Blocks, from which the students can choose one full-year subject, or a combination of shorter courses. Some students with exemplary academic results may choose to undertake a VCE Unit 1/2 subject.

Second Year – Year 11 - Year 11 students begin to focus their program, studying at least 10 semester-length units of study.
VCE 1/2 +/or VCE 3/4 +/or VET/VCAL

Third Year – Year 12 - Year 12 students concentrate on 5 subjects, studying each one for 2 units, known as a 3/4 sequence. Information specific to each year level is provided later in this booklet.

What do These Terms Mean?

What is the VCE?

The VCE is a course of study, which is accredited by the Victorian Curriculum and Assessment Authority (VCAA). VCAA ensures a standardised, common curriculum and is taught and assessed throughout the state.

Most subjects offer four units of study. Units I and 2 provide background knowledge preparation for Units 3 and 4. To gain a study score credit for a subject, both Units 3 and 4 must be studied. It is not necessary for you to have studied all four units in a subject. However, some subjects are sequential and it is recommended all four units be studied, for example Sciences, Maths and Languages.

VCE Requirements - To meet the graduation requirement of the VCE, each student must satisfactorily complete a minimum of at least 16 VCE units (across their total VCE course of study).
These units must include:

- at least 3 units of English/ESL/Literature/Language (including a sequence at the Unit 3 or 4 level)
- at least 3 other sequences of Units 3/4 studies

Subject areas include:

- The Arts
- Business Studies
- English/Literature/Language/ESL
- Health and Physical Education
- Humanities
- Languages
- Mathematics
- Science
- Technology

A maximum of three VET in the VCE subjects can be studied, two of which can be included in the student's primary four and the other as a bonus subject.

Students can study more VET subjects if they are not seeking an ATAR.

A University Enhancement subject can be counted as a 6th bonus, and offers other advantages.

Students receive a statement of results from VCAA at the end of each year of VCE study.

Each VCE and most VET in the VCE subjects receive a study score out of 50.

What is the 'ATAR' Score?

The Victorian Tertiary Admissions Centre (VTAC) converts students' VCE results into an Australian Tertiary Admission Rank (ATAR) using a statistical scaling process. This process has been developed by tertiary institutions who may use it as part of their selection process.

To obtain an ATAR score you must meet VCE requirements and your studies must include:

- a 3/4 sequence in English/EAL/Literature/English Language
- a minimum of 3 other 3/4 sequences
- a maximum of 5 other 3/4 sequences
- two sequences can be VET subjects

Further Unit 3/4 sequences can be studied but they will not be used to calculate the ATAR.

The ATAR is calculated by aggregating your scaled study scores in a maximum of 6 subjects. This ATAR aggregate ...is a score between 0 and 210+ which is then converted into an ATAR up to 99.95 at intervals of 0.05. "

English/ESL/Literature/Language and your best three subjects (known as the Primary Four subjects) are counted in full in compiling the aggregate score. Your fifth and sixth subjects each count as a 10% bonus.

University Enhancement subjects must be counted as the 6th bonus subject. VET subjects carry a full study score which can be included in your Primary Four, with the exception of Horticulture, Applied Language Screen and Community Recreation, which provide a 10% bonus as a fifth and/or sixth subject.
Only two VET subjects can count in your Primary Four.

Calculation of Aggregate Score and ATAR

Example I:

Scaled Study Scores

English	34
Maths Methods	36
Economics	33
Studio Arts	32
Chemistry	31

10% bonus for Chemistry 3.1
PE 29 - 10% bonus for PE 2.9

Aggregate Score = 141
ATAR = 77.40

Example 2:

Scaled Study Scores

English	34
History	46
VET IT	43
Further Maths	42
Psychology	35

10% bonus for Psychology 3.5
LOTE: Chinese 42 10% bonus for LOTE: Chinese 4:1

Aggregate Score = 172.6
ATAR = above 94

NOTE: **ATAR** score cannot be directly calculated from study scores.

An **ATAR** may contain studies accumulated over a number of years. However, students need to be aware that some tertiary institutions apply their own penalties for repeated studies. Students must investigate each individual tertiary institution's enrolment policy. Middle band selection criteria will be specified for each tertiary institution for each course they offer.

The criteria will include considerations that were previously handled by bonuses for particular studies; consideration of any relevant factor introduced by using **ATARs** rather than the previously announced scoring formula for the course; more detailed consideration of VCE results, and whatever other factors had been previously specified as relevant for middle-band selection for that course.

Further information regarding the tertiary selection process can be obtained in the *ATAR into Tertiary Courses booklet* published by VTAC, available in the Careers Office, Senior School office or the VTAC website (www.vtac.edu.au) The Unit Descriptions and details of courses listed in this outline have been written by the relevant Key Learning Area Leaders following ***Victorian Curriculum and Assessment Authority (VCAA)*** study guidelines. In some study areas, KLAs have chosen to provide additional course content information.

The VCE Structure

The VCE is designed to provide a comprehensive curriculum while providing opportunity for choice and for developing a specialist emphasis. Students should commit themselves to a two year program, but it is possible to change direction at the end of Unit 1 and at the end of Unit 2. The second year is less flexible than the first because students must satisfactorily complete at least three pairs of Units 3 and 4 as well as studies in English.

How many Units?

The VCE is a two-year course. Most students will complete 20 units over two years. Students will enrol in at least 10 units during Year 11 and at least 10 units in Year 12. At Macleod College it is an enrolment requirement that students attempt five pairs of Unit 3 and 4 studies, including an English, during their Year 12 year. Some students may choose to undertake an additional study in a LOTE through the School of Distance Education or the Victorian School of Languages (VSL) e.g. Chinese, Korean, Macedonian (many languages possible).

Assessment in VCE

Assessment of Units 3 and 4

- For each study, students' levels of achievement for Units 3 and 4 sequences will be assessed using school-based assessment and external examinations.
- Each study will have a number of assessment components, including school based assessment tasks and at least one examination – please refer to the relevant study design for more detail.

VCE study score

- The VCE study score will be derived from the sum of the student's performances in all school assessed coursework and external examinations.
- In addition, students will receive separate from their VCE results, an Australian Tertiary Admission Rank (ATAR) from the Victorian Tertiary Admissions Centre (VTAC) which will be used for tertiary selection. The Tertiary Entrance Rank is designed specifically for use by tertiary institutions for selection into their faculties.

There will be an opportunity for Year 11 students, with teacher approval, to undertake a Unit 3/4 study. Whilst there are some restrictions in terms of choice of studies, those students wishing to maximize their ATAR scores should seriously consider undertaking a Unit 3/4 study in Year 11. However, students will still need to enrol in five pairs of Unit 3 and 4 studies, including English, during their Year 12 year.

The GAT

The General Achievement Test is used to ensure that all schools are marking their students in a way that is fair and uniform across Victoria. It has been introduced so that school assessment can be retained as an integral part of the VCE.

All students enrolled in <u>one</u> or more Unit 3 and 4 studies are required to take the GAT. <u>It is vital that students complete the GAT to the best of their ability, otherwise their own future subject scores might be downgraded to match GAT results.</u>

The GAT is a general test, which measures what level of general achievement students have accomplished across three broad areas:

- written communication
- mathematics, science, technology
- humanities, arts, social sciences

Because the GAT does not test knowledge of a particular subject or topic, it is not possible to study for the GAT in the way students study for an examination. This is one reason the VCAA adopted the introduction of the GAT instead of other methods of monitoring school assessment as it virtually does not add to student workload.

The VCAA uses the GAT scores as a basis for:

- reviewing school assessments in SAT
- checking the accuracy of student scores in examinations.
- requesting authentication checks by schools for particular students' SATs
- enhancing the statistical moderation of school-assessed Coursework.

NB:-<u>Students' results are adjusted if they are not consistent with examination results or indicative grades or school-based assessments.</u>

Statistical Moderation

Statistical Moderation is a process for adjusting schools' assessments to the same standard, while maintaining the students' rank order by the individual school. VCAA will use it to ensure that the coursework assessments given by different schools are comparable throughout the State.

VCAA will use the examination scores in each study as the basis for statistical moderation of schools' assessments. The VCE assessment program includes the GAT in studies, where in doing so, a better match with schools' assessments throughout the State is achieved.

In moderating schools' assessments in each study, VCAA will:

- identify the moderation group for each study at each school
- form an external score for each student doing the study
- use the external scores of the moderation group to adjust the school coursework scores for the group

NB:-**Students should be aware that school given scores are subject to statistical moderation and are thus likely to change.**

English Requirements

Regardless of a student's enrolment type, English units may be selected from English Units 1 to 4, English (EAL) Units 3 & 4, English Language Units 1 to 4 and Literature Units 1 to 4.

No more than two units at Unit 1 & 2 level selected from English Units 1 & 2, English Language Units 1 & 2, Foundation English Units 1 & 2 and Literature Units 1 & 2 may count towards the English requirement.

Students may not obtain credit for both English Units 3 & 4 and English (EAL) Units 3 & 4.
Units from the English group may also contribute to the sequences other than English requirement. In calculating whether students meet the minimum requirements for the award of the VCE, the VCAA first calculates the student's English units.

Once students have either met the English requirements that relates to their enrolment type, or have satisfied an English sequence, any additional sequences from the English group will be credited towards the sequences other than English requirement.

The following table provides examples of how English requirements will apply (the requirements for students who are adults and have interstate or overseas credit or have achieved their Intermediate of Senior VCAL are not listed).

Note: All possible combinations of units from the English group have not been listed on this table.

English group Units I and 2 satisfactorily completed	**English group Units 3 and 4 satisfactorily completed**	**English requirement?**	**Sequences other than English**	**Units contributing to 16 unit count**	**Note**
English Units I and 2	English Units 3 and 4	Yes	0	4	
English Units I and 2	Literature Units 3 and 4	Yes	0	4	
English Units I and 2	Literature Unit 3	Yes	0	3	Because there is no **S** for Literature Unit 4, there will be no Study Score and no ATAR score.
Literature Units 1 and 2	Literature Units 3 and 4	Yes	0	4	

English group Units I and 2 satisfactorily completed	English group Units 3 and 4 satisfactorily completed	English requirement?	Sequences other than English	Units contributing to 16 unit count	Note
English Language Units 1 and 2	English Language Units 3 and 4	Yes	0	4	
English Units 1 and 2	English Language Units 3 and 4	Yes	0	4	
English Units 1 and 2	English Units 3 and 4 English Language Units 3 and 4	Yes	1	6	The study score for both Unit 3 and 4 sequences can be included in the primary four for ATAR.
	English Units 3 and 4 English Language Units 3 and 4	Yes	1	4	The study score for both Unit 3 and 4 sequences can be included in the primary four for ATAR.
	English Units 3 and 4 Literature Units 3 and 4	Yes	1	4	The study scores for both Unit 3 and 4 sequences can be included in the primary four for ATAR
Literature Units 1 and 2 English Units 1 and 2		No	0	4	Only two of these units count towards the English requirement. The student needs at least one **S** from Units 3 and 4.
	English Units 3 and 4 English Language Units 3 and 4 Literature Units 3 and 4	Yes	2	6	Only two study scores from Unit 3 and 4 sequences can be included in the primary four for ATAR.
English Units 1 and 2	English Unit 3 English Language Units 3 and 4	Yes	1	5	
English Unit 1 Literature Unit 2	English Unit 3	Yes	0	3	Because there is no **S** for English Unit 4, there will be no study score and no ATAR.

Students are reminded that when undertaking VCAL Literacy Skills Reading & Writing Units, they may obtain a credit towards one unit only at Unit 1 & 2 English, provided they have met the specified outcomes for that unit.

If students wish to obtain a study score at Units 3 & 4 level (required for an ATAR score), then they must complete two units at Unit 3 & 4 level from the English group. Students must consult with the VCAL Coordinator and Senior School Team Leader regarding these choices.

VTAC advises that for the calculation of a student's ATAR, satisfactory completion of both Unit 3 and 4 of an English sequence is required. Details on minimum tertiary entrance requirements and ATAR eligibility requirements are available from VTAC at www.vtac.edu.au.

TAFE Accreditation - VCAA and the State Training Board have developed formal arrangements where specific combinations of VCE units provide considerable credit towards TAFE Advanced Certificate Courses. These credits make it possible to complete some TAFE courses in a shorter period of time.

Victorian Certificate of Applied Learning (VCAL)

The Victorian Certificate of Applied Learning (VCAL) is a 'hands-on' alternative senior school certificate for students in Years 11 and 12. VCAL gives practical work-related experience, as well as literacy and numeracy skills and the opportunity to build personal skills that are important for life and work. Like the Victorian Certificate of Education (VCE), VCAL is an accredited secondary school certificate.

There are three levels of VCAL – Foundation, Intermediate and Senior – and individual counselling will determine the most suitable level of study for each student. Each student undertaking VCAL is required to undertake a vocational unit of study (such as a VET subject) as part of their learning program.

Students most suited to undertaking VCAL are those interested in going onto training at Technical and Further Education (TAFE) institutes, doing an apprenticeship or getting a job after completing school. However, if a student starts VCAL, they may transfer to the VCE.

The VCAL program's flexibility enables students to undertake a study program that suits individual interests and learning needs. Accredited modules and units are selected for the following four compulsory strands:

- Literacy and Numeracy Skills
- Industry Specific Skills
- Work Related Skills
- Personal Development Skills

Typical VCAL Program

- Monday, Tuesday & Friday at school
- Wednesday – TAFE
- Thursday – Work Placement

Students who successfully complete the VCAL will receive a certificate and statement of results that detail the areas of study that have been completed.

The VCAL has been designed to allow flexible entry and exit for other courses. It also provides maximum credit toward further study a student may undertake in the future.
Students who have successfully completed the VCAL at Intermediate level or Senior level who enrol in the VCE in a subsequent year will be eligible to complete the VCE if they satisfactorily complete:

- two units from the VCE English group
- three sequences of VCE units 3 and 4 in studies other than English (see Credit for VCAL units within the VCE)

Credit for VCAL units within the VCE

If a VCAL student who has not yet completed a VCAL Intermediate or VCAL Senior certificate transfers to the VCE, s/he must meet VCE requirements for continuing students and may count units successfully completed.

Studies completed as part of a VCAL learning program that have been identified as Intermediate or Senior level will contribute towards the VCE as follows:

- ✶ Intermediate VCAL units contribute towards the VCE at Unit 1-2 level
- ✶ Senior VCAL units contribute towards the VCE at Unit 3-4 level
- ✶ Senior VCAL units can be accumulated towards VCE Unit 3-4 sequences in the following ways:
  - any 2 Senior VCAL units from the Personal Development Skills strands and Literacy and Numeracy Skills strands
  - a combination of any Senior VCAL Personal Development Skills/Literacy and Numeracy Skills unit and 90 nominal hours of appropriate further Education training at AQF III and above from the Literacy and Numeracy Skills strands
  - any 2 Senior VCAL, units from the Work-Related Skills strand
  - a combination of any Senior VCAL. Work Related Skills unit and 90 nominal hours of appropriate VET training at AQF III or above from the Industry Specific Skills strand.

Further Information

1. The Careers Centre and the library contain some important references which will assist in students' decisions.
2. *'The Job Guide'*: The Job Guide contains information about all occupations in Australia.
3. The *Annual Tertiary Entrance Requirements* booklet summarises entrance requirements for universities and colleges of advanced education.
4. TAFE Handbook: *The TAFE (Technical and Further Education Handbook)* contains an extensive list of all Certificate, Associate Diploma and Trade courses throughout the State.
5. *Job and Course Explorer*: The OZJAC program is another way to search for information regarding both jobs and courses. JAC is located in the Careers Centre and in the library and after researching information, students can print a copy of all the relevant data.
6. VTAC site – www.VTAC.EDU.AU
7. WWW.SOFWEB.EDU.AU
8. WWW.VCAA.VIC.EDU.AU

Vocational Education and Training (VET)

What is VET?

The Vocational Education and Training (VET) program lets you take your VCE, VCAL and a VET Certificate at the same time. VET programs provide for a more vocational VCE by combining both vocational and general education.

On successful completion of study, students are awarded their VCE, VCAL as well as a VET Certificate. This certificate is at Level Two in the Australian Quality Training Framework and is recognised nationally. Students are eligible to apply for an Australian Tertiary Admission Rank (ATAR) and are also granted credit towards other VET certificate and diploma courses.

How does it work?

Students start the program in Year 11 and undertake a range of VCE /VET units to gain practical and academic experience. Assessment is outcome and skill-based in VET units, that is, the student will have to demonstrate their ability to perform all the required tasks, tests and assignments. You may be required to do at least 40 - 80 hours of work placement. This may occur out of school hours or during vacation time. Select the VCE / VET units required for the certificate you have chosen. Generally each VET unit is worth one VCE unit.

Vocational Education and Training (VET)

Students are able to select from a wide range of VET courses offered through the Northern Melbourne VET Cluster of which Macleod College is a member school. Macleod College will be offering VET Hairdressing Units 1 and 2, but students may wish to undertake other VET studies at some of our network schools.

VET programs are usually run each Wednesday. Each program requires students to undertake some work experience (40 – 80 hours) related to the VET study which gives them a chance to learn more about the industry and the skills it requires.

Details of the VET courses on offer are to be found in the NMVC VET Handbook which can be obtained from the VET/Careers Coordinator.

Students undertaking a VET subject need to be aware that course fees apply and these fees are levied to cover the shortfall between the cost of the course and the level of government funding provided. Details of the cost of courses will be provided to students at their course selection interview.

It should be noted that it is each student's responsibility to make his/her own way each week to and from the school where the VET program is being delivered, and so are advised to ensure that transport to the VET course they select is manageable.

Features of VET

VET programs are nationally recognised qualifications that can be credited towards the attainment of the VCE or VCAL certificate. They are vocationally orientated senior school studies that are designed to meet the needs of industry. They focus on developing industry specific and workplace skills, and can provide credit towards future TAFE studies.

VET programs have a Unit 1 – 4 structure just like VCE units. From 2008, there is no limitation on the number of VCE units a student may select to study. All VET programs with a Unit 3 and 4 scored assessment sequence can be used in the calculation of the Australian Tertiary Admission Ranking (ATAR) score and can count in the Primary Four in the same way as a non-VET subject. When scored assessment is not available for a VET subject, it contributes as a 10% bonus to the Primary Four.

Assessment

The assessment of VET studies is outcome and skill-based. This means students have to demonstrate their ability to perform all of the required tasks, tests and assignments to a satisfactory standard.

Application Process

There are three steps in making an application for a NMVC VET program:

- **Step 1** Read the NMVC Handbook and course requirements carefully, select your program and complete the NMVC Application Form. Submit this application to the VET Coordinator.
-
- **Step 2** Attend the compulsory Information Enrolment Evening in Term 4. You will be advised by letter about the location, date and time of this event.
-
- **Step 3** Payment for the VET course must be received by the date advertised in Term 4, prior to commencing the program in the following year.

VET Offerings that may be offered in 2016 and beyond. Please check with the VET/Careers Co-ordinator or current offerings.

- Certificate lll in Allied Health Assistance
- Certificate II in Automotive
- Certificate II in Building and Construction
- Certificate II in Business
- Certificate lll in Community Recreation
- Certificate II in Community Services Work
- Certificate II in Dance
- Certificate II in Electro technology (Career Start)
- Certificate II in Electro technology (Shared Technology)
- Certificate II in Engineering Studies
- Certificate II in Equine Studies
- Certificate II in Furnishings
- Certificate II in Hairdressing
- Certificate II in Horticulture (Landscape)
- Certificate II in Hospitality
- Certificate III in Information Technology (partial completion)
- Certificate II in Music Industry Foundation
- Certificate II in Community Services (Childcare)
- Certificate III in Music
- Certificate III in Music (Technical Production)
- Certificate III in Permaculture
- Certificate II in Outdoor Recreation
- Certificate II in Retail Skin Care & Beauty

Macleod College offers a range of VET units, as well as a limited number of Australian School Based Apprenticeships (ASBA). Students who complete all or part of these programs will receive credit towards satisfactory completion of the VCE.

Australian School Based Apprenticeships (ASBA)

The ASBA comprises of three main parts:

- Enrolment in the VCE/VCAL at school
- Enrolment with a Registered Training Organisation (RTO) in a structured training program that leads to a vocational qualification
- Part time paid work

Students may not be simultaneously enrolled in an ASBA and a VCE VET program in the same industry. For certificates at Australian Quality Framework Level II credit is granted at Units 1 and 2, subject to completion of sufficient hours of training. AQF Level III certificates are credited at Units 3 and 4.

Credit is awarded on the basis of achieving units of competence in the modules. The maximum amount of credit available for ASBA is eight units, which may include two sequences at Unit 3 and 4 level.

VET

Students may receive an 'S' (satisfactory/pass) for a unit of competence when they have demonstrated competence as assessed by the RTO. Students receive an 'S' for a module when they have demonstrated achievement of all the learning outcomes as assessed by the RTO.

Satisfactory completion of VCE VET units is calculated automatically as student's satisfactorily complete unit of competence. The maximum amount of credit available for VET is eight units, which may include two sequences at Unit 3 and 4 level.

All certificates and statements of attainment are awarded by the RTO and recorded on the VCE Statement of Results.

The Certificate III in Hospitality includes Scored Assessments for each of two components:

- School-assessed Coursework
- Examination based on Unit 3 and 4 sequence, set by VCAA.

These scores are statistically moderated and are used to calculate study scores using the same procedures as other VCE studies.

For further information, refer to the VCAA website at www.vcaa.vic.edu.au/vet

NOTE: **Students enrolled in a ASBA will need to negotiate appropriate time release with the College.**

YEAR 11
Choosing Your Program – Year 11

In Year 11, many students begin to focus their study towards their developing areas of interest whilst still continuing to experiment.

What sort of subjects can I study?
In Year 11 you can study a combination of:
VCE 1/2 units VCE 3/4 units VET subjects VCAL

What can I choose?
Most students study 10 units of VCE or VET subjects.

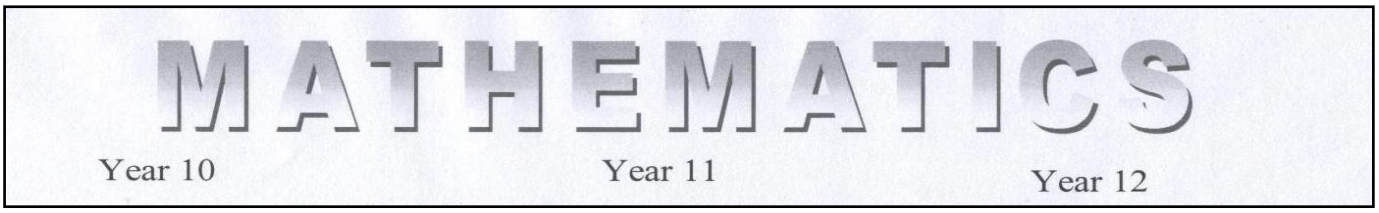
This can be personalised and you are encouraged to speak with the Careers Counsellor about your plans. Most of your subjects will be studied as two-unit sequences; this helps to build the skills and knowledge for 3/4 study. You may also take some single units to increase your range of subjects.

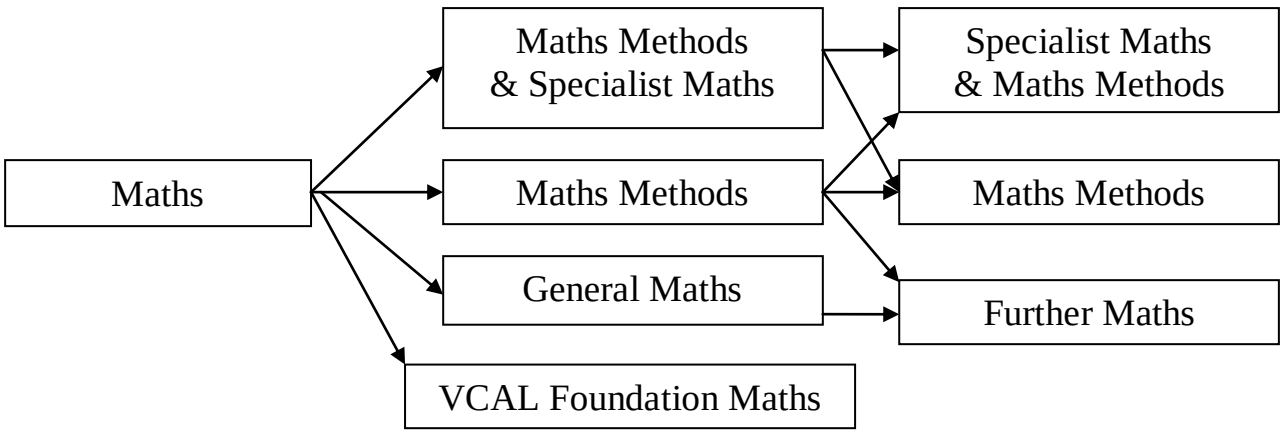
Are there any guidelines for me to follow?
We recommend some students take a VCE 3/4 and/or VET in Year II.
This allows you to:
- experience the study demands and assessment process of 3/4 study
- include a 6th bonus subject in your program

It is important you consider any prerequisites for any tertiary studies you may be considering.

Please Note: That if a Year 11 student does not achieve a study score of 30 or more for their Unit 3/4 study they will repeat that study in the following year. If a student obtains a study score of higher than 30 they may apply to only do 4 studies in Year 12 or will be required to pick up another subject. (Panel made up of level coordinators, sub school head, AP and curriculum coordinator will decide if a student is permitted to do only 4 studies).

Mathematics Guidelines
Choose the correct level of Mathematics. Maths is a sequential subject that builds skills and changing the level of Maths you study during the year may be disruptive to your learning.





Please read the subject entries, look at your Maths Selection Test result and gain advice from your Maths teacher.

How do I decide what to include in my Program?

We recommend you:

- read about the subjects on offer in the Senior School Curriculum section of this handbook
- discuss your selection with your parents, friends and teachers
- attend the VCE Information Evening
- make use of the Career Counselling process

What happens next?

The subject selection process will be a little different to the process going into year 10. In Term 3 you will be asked to nominate subjects in priority order which you would like to do.

A basic timetable with blocks will be distributed to students and you will be asked to then select the subjects you wish to do.

It is therefore vital that you take every step in this process seriously because the timetable will be based on your selections.

Every effort will be made to include all your choices within the framework of the timetable grid. If there are any issues with your selection we will contact you for counselling.

You will be given a supplement to this handbook at this stage which will include details of:

- any changes to subject offerings
- the information you need to supply
- the subject selection form
- the date your form must be returned

YEAR 12

Choosing Your Program – Year 12

In Year 12, students usually concentrate on five subjects studying each as a sequence of two Units (a 3/4 sequence).
A supplement to this Handbook will be provided during Term 3, to assist you in this selection.

What sort of subjects can I study?

In Year 12 you can study a combination of:

- VCE 3/4 Units
- VET
- VCAL
- a University Enhancement subject
- a Year 13 subject

University Enhancement Subjects

Students who have a strong interest and academic results in a subject may choose to apply to study a University Enhancement course that is offered by a University. These subjects may provide a 6th bonus score. Entry is determined by the University, and based on previous VCE results.

What can I choose?

Year 12 students usually choose five subjects. Variations may be considered.

Are there any guidelines for me to follow?
We recommend you carefully consider the VCE Requirements to ensure you meet them. It is also important you consider the prerequisites for any tertiary studies you may be considering.

How do I decide what to include in my Program?
For many of you, choosing your program will be a simple process as you continue with the plan embarked upon in the previous year, or you may need to redefine plans and goals in light of your studies so far.

Also, your interests, skills and personal values may have changed. It is really worth using the subject selection process to carefully consider your options.

You will be given a supplement to this handbook at this stage which will include details of:

- any changes to subject offerings
- the information you need to supply
- the subject selection form
- the date your form must be returned

What happens next?
Priority is given to Year 12 students when formulating the timetable grid within the subject selection process. If there are any issues with your selection we will contact you for counselling.

Senior School Curriculum
Units of study will run subject to viable student numbers. **Check with the Annual Supplement for any subject changes.**

Macleod College VCE Units 1/2 & Units 3/4 offered in 2016

YEAR 12 VCE **VCAL VET**	**UNITS 3 & 4** Accounting *Biology* Business Management *Chemistry* Computing	*English* English as another Language *English Language* Health & Human Development Languages –German	*Legal Studies* Mathematics - Further Mathematics - Mathematical Methods *Music Performance – Group*	Music Performance - Solo *Physical Education* Physics *Psychology* Studio Arts *VCAL (Senior)*
YEAR 11 VCE VCAL VET	**UNITS 1 & 2** Accounting *Biology* Business Management *Chemistry* Computing *Design & Technology - Wood* *English* English as another Language	*English Language* Health & Human Development *History – 20th Century* Languages - German *Legal Studies* Literature *Mathematics* *- General* *- Specialist* *- Maths Methods*	Music Performance *Physical Education* Physics *Psychology* Studio Arts *VCAL (Intermediate)* VET Hairdressing (Macleod Campus)	**UNITS 3 & 4** Biology *Business Management* Health *Psychology*
NOTE: VET Partnership Regional Offerings – A variety of Certificates are available for study – consult with the Careers Teacher				

VCE SUBJECTS

ACCOUNTING

Scope of study
VCE Accounting focuses on the financial recording, reporting and decision-making processes of a sole proprietor small business. Students study both theoretical and practical aspects of accounting. Financial data will be collected and recorded, and accounting information reported, using both manual and information and communications technology (ICT) methods.
The preparation and presentation of financial statements is governed by Australian Accounting Standards and guided by the Framework for the Preparation and Presentation of Financial Statements (AASB Framework).

Rationale
Accounting is the process of recording, reporting, analysing and interpreting financial data and accounting information which is then communicated to internal and external users of this information. It plays an integral role in the successful operation and management of businesses.
VCE Accounting focuses on small business. Unit 1 begins with a small service business, allowing students to develop knowledge and skills in accounting without the complexities of accounting for trading businesses or large organisations. Units 2, 3 and 4 then focus on a single activity trading business where students build on and extend their accounting skills.
Many students who study VCE Accounting will go on to further studies and careers in business and finance.

Structure
The study is made up of four units:
Unit 1: Establishing and operating a service business
Unit 2: Accounting for a trading business
Unit 3: Recording and reporting for a trading business
Unit 4: Control and analysis of business performance
Each unit contains between two and four areas of study.

Entry
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: Establishing and Operating a Service Business
This unit focuses on the establishment of a small business and the accounting and financial management of the business. Students are introduced to the processes of gathering and recording financial data and the reporting and analysing of accounting information by internal and external users. The cash basis of recording and reporting is used throughout this unit.
Using single entry recording of financial data and analysis of accounting information, students examine the role of accounting in the decision-making process for a sole proprietor of a service business.
Where appropriate, the accounting procedures developed in each area of study should incorporated the application of accounting principles and the qualitative characteristics of accounting information (see pages 12–14 of the study design).

Unit 2: Accounting for a Trading Business
This unit extends the accounting process from a service business and focuses on accounting for a sole proprietor of a single activity trading business. Students use a single entry recording system for cash and credit transactions and the accrual method for determining profit. They analyse and evaluate the performance of the business using financial and non-financial information. Using these evaluations, students suggest strategies to the owner on how to improve the performance of the business.

Students develop their understanding of the importance of ICT in the accounting process by using a commercial accounting software package to establish a set of accounts, record financial transactions and generate accounting reports.
Where appropriate, the accounting procedures developed in each area of study should incorporated the application of accounting principles and the qualitative characteristics of accounting information (see pages 12–14 of the study design).

Unit 3: Recording and Reporting for a Trading Business
This unit focuses on financial accounting for a single activity trading business as operated by a sole trader and emphasises the role of accounting as an information system. Students use the double entry system of recording financial data and prepare reports using the accrual basis of accounting. The perpetual method of stock recording with the First In, First Out (FIFO) method is used.
Where appropriate, the accounting procedures developed in each area of study should incorporated the application of accounting principles and the qualitative characteristics of accounting information (see pages 12–14 of the study design).

Unit 4: Control and Analysis of Business Performance
This unit provides an extension of the recording and reporting processes from Unit 3 and the use of financial and non-financial information in assisting management in the decision-making process. The unit is based on the double entry accounting system and the accrual method of reporting for a single activity trading business using the perpetual inventory recording system.
Students investigate the role and importance of budgeting for the business and undertake the practical completion of budgets fro cash, profit and financial position. Students interpret accounting information from accounting reports and graphical representations, and analyse the results to suggest strategies to the owner on how to improve the performance of the business.
Where appropriate, the accounting procedures developed in each area of study should incorporated the application of accounting principles and the qualitative characteristics of accounting information (see pages 12–14 of the study design).

Assessment
Satisfactory Completion
The award of satisfactory completion for a unit is based on a decision that the student has demonstrated achievement of the set of outcomes specified for the unit. This decision will be based on the teacher's assessment of the student's performance on assessment tasks designated for the unit.

Levels of Achievement
Units 1 and 2
Procedures for the assessment of levels of achievement in Units 1 and 2 are a matter for school decision.

Units 3 and 4
The Victorian Curriculum and Assessment Authority will supervise the assessment of all students undertaking Units 3 and 4. In the study of VCE Accounting students' level of achievement will be determined in Unit 3 by School-assessed Coursework and an end-of-year examination; and in Unit 4 by School-assessed Coursework and an end-of-year examination.
In both Unit 3 and Unit 4, at least 30 marks out of the 100 available for School-assessed Coursework must be allocated to ICT-based assessment.

Percentage contributions to the study score in VCE Accounting are as follows:
- Unit 3 School-assessed Coursework: 25 per cent
- Unit 4 School-assessed Coursework: 25 per cent
- End-of-year examination: 50 per cent.

BIOLOGY

Scope of study
Biology seeks to understand and explore the nature of life, past and present.
VCE Biology enables students to investigate the dynamic relationships between organisms, their interactions with the non-living environment, and the processes of life, from the molecular world of the cell to that of the whole organism, that maintain life and ensure its continuity.
An important feature of VCE Biology is the opportunity for students to undertake a range of inquiry tasks both collaboratively and independently. Inquiry methodologies can include laboratory experimentation, fieldwork, microscopy, local and remote data logging, simulations, animations, literature reviews and the use of global databases and bioinformatics tools. Students pose questions, formulate hypotheses, collect and analyse data, evaluate methodologies and results, justify conclusions, make recommendations and communicate their findings.
As well as an increased understanding of scientific processes, students develop capacities that enable them to critically assess the strengths and limitations of science, respect evidence-based conclusions and gain an awareness of the ethical, social and political contexts of scientific endeavours.

Rationale
VCE Biology enables students to investigate the processes involved in sustaining life at cellular, system, species and ecosystem levels. In undertaking this study, students examine how life has evolved over time and understand that in the dynamic and interconnected system of life all change has a consequence that may affect an individual, a species or the collective biodiversity of Earth.
In VCE Biology students develop their inquiry, analytical and communication skills. They apply critical and creative thinking to analyse contemporary biology-related issues, and communicate their views from an informed position.

Structure
The study is made up of four units:
Unit 1: How do living things stay alive?
Unit 2: How is continuity of life maintained?
Unit 3: How do cells maintain life?
Unit 4: How does life change and respond to challenges over time?
Each unit contains two or three areas of study.

Entry
There are no prerequisites for entry to 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. 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.

Unit 1: How Do Living Things Stay Alive?
In this unit students explain what is needed by an organism to stay alive. They are introduced to some of the challenges for organisms in sustaining life. Students examine the cell as the structural and functional unit of life and the requirements for sustaining cellular processes in terms of inputs and outputs. Types of adaptations that enhance the organism's survival in a particular environment are analysed, and the role that homeostatic mechanisms play in maintaining the internal environment is studied. Students consider how the planet's biodiversity is classified and investigate the factors that affect population growth.

A student investigation related to the survival of an organism or species is undertaken in Area of Study 3. The investigation draws on content from Area of Study 1 and/or Area of Study 2.

Unit 2: How is Continuity of Life Maintained?
In this unit students focus on asexual and sexual cell reproduction and the transmission of biological information from generation to generation. The role of stem cells in the differentiation, growth, repair and replacement of cells in humans is examined, and their potential use in medical therapies is considered. Students explain the inheritance of characteristics, analyse patterns of inheritance, interpret pedigree charts and predict outcomes of genetic crosses. They consider the role of genetic knowledge in decision-making about the inheritance of various genetic conditions. In this context the uses of genetic screening and its social and ethical issues are examined.

A student investigation into, and communication of, an issue related to genetics and/or reproductive science is undertaken in Area of Study 3. The investigation draws on content from Area of Study 1 and/or Area of Study 2.

Unit 3: How Do Cells Maintain Life?
In this unit students investigate the workings of the cell from several perspectives. These different perspectives enable consideration of both the capabilities and the limitations of living organisms whether animal, plant, fungus or microorganism. Students examine the key molecules and biochemical pathways involved in cellular processes both within the cell and between cells. At this molecular level students study the human immune system and the interactions between its components to provide immunity to a specific antigen.

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

Unit 4: How Does Life Change and Respond To Challenges Over Time?
In this unit students consider the continual change and challenges to which life on Earth has been subjected. They examine change in life forms, investigate the relatedness between species and consider the impact of various change events on a population's gene pool. Students explore the structural and cognitive trends in the human fossil record and the interrelationships between human biological and cultural evolution. The biological consequences, and social and ethical implications, of manipulating the DNA molecule and applying biotechnologies are explored for both the individual and the species.

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

Assessment
Satisfactory Completion
The award of satisfactory completion for a unit is based on a decision that the student has demonstrated achievement of the set of outcomes specified for the unit. This decision will be based on the teacher's assessment of the student's performance on assessment tasks designated for the unit.

Levels of Achievement
Units 1 and 2
To obtain a pass in these units, the student must achieve an overall satisfactory grade based on the results of a variety of assessment tasks designed to assess the outcomes of the unit.

Units 3 and 4
The Victorian Curriculum and Assessment Authority will supervise the assessment of all students undertaking Units 3 and 4. In the study of VCE Biology the student's level of achievement will be determined by School-assessed Coursework and an end of year exam.
Percentage contributions to the study score in VCE Biology are as follows:

- Unit 3 School-assessed Coursework: 16 per cent
- Unit 4 School-assessed Coursework: 24 per cent
- End-of-year examination: 60 per cent.

BUSINESS MANAGEMENT

Rationale

In contemporary Australian society, there is a wide variety of business organisations in terms of size, ownership, objectives, resources and location. These organisations are managed by people who establish systems and processes to achieve a range of objectives.

VCE Business Management examines the ways in which people at various levels within a business organisation manage resources to achieve the objectives of the organisation. Students develop an understanding of the complexity, challenges and rewards that come from business management and gain an insight into the various ways resources can be managed in small, medium and large-scale organisations.

The study recognises that there is a range of management theories. In each unit students examine some of these theories and, through exposure to real business scenarios and direct contact with business, compare them with management in practice.

In studying VCE Business Management, students develop knowledge and skills that enhance their confidence and ability to participate effectively, as socially responsible and ethical members of the business community, and as informed citizens, consumers and investors.

Structure

The study is made up of four units:
Unit 1: Small business management
Unit 2: Communication and management
Unit 3: Corporate management
Unit 4: Managing people and change
Each unit contains between two and four areas of study.

Entry

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: Small Business Management

Small rather than large businesses make up the large majority of all businesses in the Australian economy. It is the small business sector that provides a wide variety of goods and services for both consumers and industries, such as manufacturing, construction and retail.

This, combined with employment opportunities, makes the small business sector a vital component in the success, growth and stability of Australia. Small businesses are tangible to students as they are visible and accessible in daily life. This unit provides an opportunity for students to explore the operations of a small business and its likelihood of success.

Unit 2: Communication and Management

This unit focuses on the importance of effective communication in achieving business objectives. Students investigate communication both internal and external to the business.

They develop knowledge of aspects of business communication and are introduced to skills related to its effective use in different contexts. The vital functions of marketing and public relations are considered, with students developing an understanding of the important role these functions play in the ultimate success of a business.

Unit 3: Corporate Management
In this unit 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 and have the opportunity to compare theoretical perspectives with practical applications.

Unit 4: Managing People and Change
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.

Assessment
Satisfactory Completion
The award of satisfactory completion for a unit is based on a decision that the student has demonstrated achievement of the set of outcomes specified for the unit. This decision will be based on the teacher's assessment of the student's performance on assessment tasks designated for the unit.

Levels of Achievement
Units 1 and 2
Procedures for the assessment of levels of achievement in Units 1 and 2 are a matter for school decision.

Units 3 and 4
The Victorian Curriculum and Assessment Authority will supervise the assessment of all students undertaking Units 3 and 4. In the study of VCE Business Management students' level of achievement will be determined by School-assessed Coursework and an end-of-year examination.

Percentage contributions to the study score in VCE Business Management are as follows:
- Unit 3 School-assessed Coursework: 25 per cent
- Unit 4 School-assessed Coursework: 25 per cent
- End-of-year examination: 50 per cent.

CHEMISTRY

Scope of study
VCE Chemistry enables students to explore the relationship between materials and energy through four themes: the design and composition of useful materials, the reactions and analysis of chemicals in water, the efficient production and use of energy and materials, and the investigation of carbon-based compounds as important components of body tissues and the materials used in society.

An important feature of VCE Chemistry is the opportunity for students to undertake a range of inquiry tasks both collaboratively and independently. Inquiry methodologies can include laboratory experimentation, modelling, site tours, fieldwork, local and remote data-logging, simulations, animations, literature reviews and the use of global databases. Students pose questions, formulate hypotheses, collect and analyse data, evaluate methodologies and results, justify conclusions, make recommendations and communicate their findings.

As well as an increased understanding of scientific processes, students develop capacities that enable them to critically assess the strengths and limitations of science, respect evidence-based conclusions and gain an awareness of the ethical, social and political contexts of scientific endeavours.

Rationale
VCE Chemistry enables students to explore the nature of chemicals and chemical processes. In undertaking this study, students apply chemical principles to explain and quantify the behaviour of matter, as well as undertake practical activities that involve the analysis and synthesis of a variety of materials.

Structure
The study is made up of four units:
Unit 1: How can the diversity of materials be explained?
Unit 2: What makes water such a unique chemical?
Unit 3: How can chemical processes be designed to optimise efficiency?
Unit 4: How are organic compounds categorised, analysed and used?

Entry
There are no prerequisites for entry to 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.

Unit 1: How Can The Diversity of Materials Be Explained?
The development and use of materials for specific purposes is an important human endeavour. In this unit students investigate the chemical properties and practical applications of a range of materials including metals, crystals, polymers, nanomaterials and giant lattices.

They explore and explain the relationships between properties, structure and bonding forces within and between particles that vary in size from the visible through to nanoparticles, molecules and atoms. Students are introduced to quantitative concepts in chemistry.

Unit 2: What Makes Water Such a Unique Chemical?
Water is the most widely used solvent on Earth. In this unit students explore the physical and chemical properties of water, the reactions that occur in water and various methods of water analysis.

Students examine the structure and bonding within and between water molecules in order to investigate solubility, concentration, pH and reactions in water including precipitation, acid-base and redox. They are introduced to stoichiometry and to analytical techniques and instrumental procedures analysis, and apply these to determine concentrations of different species in water samples, including chemical contaminants. Students explore the solvent properties of water in a variety of contexts and analyse selected issues associated with substances dissolved in water.

Unit 3: How can Chemical Processes be Designed to Optimise Efficiency?
The global demand for energy and materials is increasing with world population growth. In this unit students explore energy options and the chemical production of materials with reference to efficiencies, renewability and the minimisation of their impact on the environment.

Students compare and evaluate different chemical energy resources and investigate the combustion of fuels. They consider the purpose, design and operating principles of galvanic cells, fuel cells and electrolytic cells and calculate quantities in electrolytic reactions.

Students analyse manufacturing processes with reference to factors that influence their reaction rates and extent. They apply the equilibrium law and Le Chatelier's principle to predict and explain the conditions that will improve the efficiency and percentage yield of chemical processes.

Unit 4: How are Organic Compounds Categorised, Analysed and Used?
Carbon is the basis of the diverse compounds found in living tissues and in the fuels, foods, medicines and many of the materials we use in everyday life. In this unit students investigate the structural features, bonding, reactions and uses of the major families of organic compounds including those found in food.

Students process data from instrumental analyses to confirm or deduce organic structures, and perform volumetric analyses to determine the concentrations of organic chemicals in mixtures. They predict the products of reaction pathways and design pathways to produce particular compounds from given starting materials. Students investigate key food molecules including carbohydrates, proteins, lipids and vitamins and use calorimetry to determine the energy released in the combustion of food.

Assessment
Satisfactory Completion
The award of satisfactory completion for a unit is based on a decision that the student has demonstrated achievement of the set of outcomes specified for the unit. This decision will be based on the teacher's assessment of the student's performance on assessment tasks designated for the unit.

Levels of Achievement
Units 1 and 2
Procedures for the assessment of levels of achievement in Units 1 and 2 are a matter for school decision.

Units 3 and 4
The Victorian Curriculum and Assessment Authority will supervise the assessment of all students undertaking Units 3 and 4. In the study of VCE Chemistry the student's level of achievement will be determined by School-assessed Coursework as specified in the VCE Chemistry study design and external assessment.

Percentage contributions to the study score in VCE Chemistry are as follows:
- Unit 3 School-assessed Coursework: 16 per cent
- Unit 3 School-assessed Coursework: 24 per cent
- End-of-year examination: 60 per cent.

COMPUTING

The study is made up of four units:
Unit 1: Computing Unit 2: Computing
Unit 3: Informatics Unit 4: Informatics

Unit 1: Computing
In this unit, students focus on how data, information and networked digital systems can be used to meet a range of users' current and future needs.

Area of Study 1
Data and Graphic Solutions
In this area of study students conduct an investigation into an issue, practice or event and through the systematic collection, interpretation and manipulation of primary data they create a graphic solution, such as an infographic, that represents their findings. Examples of investigations include the social networking habits of people of different age groups, the heritage of a class of students to three generations and music preferences by genre and favourite artists within each. Graphic solutions could include charts, flowcharts, diagrams, images, hierarchies, animations, maps and timelines. Students develop and apply a detailed understanding of data, including its types, characteristics, sources and methods of acquisition. Relevant primary data is collected and then evaluated to determine its suitability for manipulation. When acquiring this data, students consider risks associated with using data owned by other people or organisations, and apply strategies and techniques for acknowledging legal requirements and ethical responsibilities. Students apply computational thinking skills when extracting meaning from data and apply design thinking knowledge and skills to create graphic information for the purpose of informing, educating or persuading an audience. No restrictions are placed on the software tool used to create these solutions.

Area of Study 2
Networks
In this area of study students investigate how networks with wireless capability allow data and information to be exchanged locally and within the global environment. Students examine the hardware and software components and procedures required to connect and maintain a wireless network. They focus on ways in which the security of exchanged and stored data and information can be compromised in wireless networks, in order to understand ways of controlling the networked devices they use. Students apply this technical knowledge to create the design for a network with wireless capability that meets a need or opportunity, identifying its components and how data and information are transmitted. Students use a software tool to depict the components of their network and its interactions. When designing network solutions, students apply systems thinking by considering how users will interact with the network and the potential effects of the network on users and their data and information.

Area of Study 3
Collaboration and Communication
In this area of study students examine how the use of particular information systems within specified contexts can cause tensions and conflicts between different stakeholders. Students develop the ability to critically appraise how information systems are used and how individuals can be empowered to shape their use. Working in virtual (local, national, international) or face-to-face teams, students use web authoring software to create a website, designed for viewing on a mobile device, which presents an overview of an issue associated with one field. When designing their website students apply their knowledge of information architecture such as structuring sets of information to facilitate navigation and allowing users choices about levels of detail. They evaluate the merits of storing their website and its content in the cloud or on a private server. Project plans are prepared to support an organised approach to problem solving. Students use software to record tasks to be completed and team member responsibilities and schedules. Students record and monitor progress of the website development. Students do not have to use dedicated project management software.

On their website students present the viewpoints of different stakeholders, drawing on evidence acquired from primary and/or secondary sources. They publish the team's opinions about the issue and propose actions that can be taken to shape how information systems are used, for example, using social media to encourage actions or inviting comments in a forum. Students use visualising thinking tools to analyse content, online collaborative tools to support sharing of ideas, and techniques to assist in forming team opinions. They use other appropriate software to manipulate acquired data such as image, numeric, text and sound editing tools, and web authoring tools to communicate viewpoints.

Unit 2: Computing

In this unit students focus on data and how the application of computational, design and systems thinking skills support the creation of solutions that automate the processing of data.

Area of Study 1

Programming

In this area of study students focus on using a programming or scripting language that can support object-oriented programming to create working software modules. These languages provide users with greater flexibility than application software, as specific sets of instructions can be implemented to create solutions that are purpose designed. Flexibility exists regarding the specific language studied. Depending on its nature the language could also be used in Area of Study 2. Students develop skills in interpreting teacher-provided solution requirements and in designing working modules. They apply methods and techniques for completing a series of small discrete tasks or working modules that use features of a programming or scripting language, including predefined classes. They apply knowledge and skills associated with the design and development stages of the problem-solving methodology. Details of this methodology are on pages 14–16. Students also apply computational and design thinking skills when preparing design specifications and transforming them into working modules through the use of programming or scripting languages.

Area of Study 2

Data Analysis and Visualisation

In this area of study students learn to use software tools to access, select and, where appropriate, manipulate authentic data from large data repositories, and to present the key aspects of the data in an appropriate visual form. Once the data has been isolated and checked for its integrity, students create data visualisations that assist in reducing the complexity of data by using designs that illustrate patterns, connections and structure. These visualisations should minimise the effort required by readers to interpret complex data and they need to be clear, usable and relevant. Some data visualisation tools allow presentations to be dynamic and/or interactive. Appropriate visualisation forms include graphs, charts, spatial relationships, maps, histograms and network diagrams (nodes and edges). Sources of large data repositories include the Bureau of Meteorology, World Development Indicators, Australian Bureau of Statistics, United Nations, CSIRO, OECD. Appropriate tools to extract or structure data and create visualisations include a programming language, database software, spreadsheet software and data visualisation software. It is important that students engage in a two-step approach when creating visualisations: acquiring and preparing data (step one) and manipulating data into a visual form (step two). In response to teacher-provided design briefs, students apply all stages of the problem-solving methodology.

Area of Study 3

Data Management

In this area of study students are introduced to the structure of databases and their applicability in a range of settings. Databases underpin many applications such as borrowing and booking systems, medical records and social media websites. Students develop an understanding of the purposes of databases by exploring the data and information they supply to and receive from systems such as banking, membership, online purchasing and voting systems. They apply systems thinking skills when considering the effects of their interactions with information systems that use databases. Students develop and apply knowledge and skills in determining data types required to solve specific problems, and in organising and storing data.

They examine the flexibility of databases by constructing query searches and sorts, and apply design principles that contribute to effective and efficient data collections tools, input forms and reports. Where appropriate, students apply mathematical calculations to the data and may create macros to automate repetitive tasks. Students devise a need or opportunity for a solution and collect relevant data for manipulation by database management software. This facilitates a deeper understanding of the benefits and risks associated with using database solutions. Students apply all stages of the problem-solving methodology.

Unit 3: Informatics
In Informatics Units 3 and 4 students focus on data, information and information systems.

Area of Study 1
Organisations and Data Management
In this area of study students investigate why organisations acquire data online for transaction processing and how they structure their data-gathering processes to support these transactions. Students also develop and apply skills in using a relational database management system (RDBMS) to manipulate data typically sourced through interactive online solutions, such as websites and applications (apps). Students examine how value can be added to this data through the careful structuring of data and the application of functions, such as queries, searches and reports that identify patterns and relationships between data sets. Students investigate interactive online solutions to ascertain the types of data being acquired, how it is obtained and protected and how transactions are completed. They design a user flow diagram that traces different ways in which users interact with online solutions when initiating and completing transactions, acknowledging that there can be multiple entry points and multiple interactions. Students diagrammatically represent the user interface of the page on which the user commences an online transaction. Students examine how organisations fulfil their legal requirements to protect the rights of those who provide data and why organisations want the data organised in particular ways. Students consider the fundamentals of an RDBMS; that is, fields and data types, data structures and the relationships between data sets. Students learn to describe data types and data structures, and apply functions, techniques, formats and conventions to store, validate and manipulate data, and to present suitable solutions. When tracing user interactions and developing a solution, students respond to two teacher-provided design briefs: one relates to how users interact with an online solution when conducting a transaction; the other provides details of why an RDBMS solution is needed, and includes data. The contexts of the briefs can be the same or different. In this area of study there is an emphasis on the design and development stages of the problem-solving methodology.

Area of Study 2
Data Analytics: Drawing Conclusions
In this area of study students focus on data analytics, in particular selecting, referencing, organising, manipulating and interpreting relevant data to draw valid conclusions about a hypothesis. Students initially frame a hypothesis within a chosen field such as entertainment, sport, science/medicine, business and education, and undertake an analysis to determine the multiple data sets needed to support their claim, the scope of the hypothesis and any constraints. The hypothesis could reflect an existing or emerging trend such as confirming or predicting a changing pattern in food culture in a defined precinct due to demographic shifts. Students complete this as the first part of a project; the other part is undertaken in Unit 4, Outcome 1. Students prepare their acquired data for manipulation through integrity checks and, where appropriate, codify data and information. Students manipulate this data to support interpretation and apply computational thinking skills to extract meaning from the data in order to express a conclusion to their hypothesis.
Students devise a file management plan and prepare a project plan for the execution of the problem-solving methodology. This includes both parts of the project, from the framing of the hypothesis, the analysis and the conclusion (Unit 3, Outcome 2), through to the design, development and evaluation of the multimodal online solution showing the correctness (or otherwise) of the hypothesis (Unit 4, Outcome 1). Students determine the milestones of their project.

Unit 4: Informatics

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

Area of Study 1

Data analytics: presenting the findings

In this area of study students draw on the conclusion they formed to their hypothesis in Unit 3, Outcome 2, and design and develop a multimodal online solution that communicates and substantiates this conclusion. Students evaluate the effectiveness of the solution in communicating the conclusion. Effective designs and clarity of messages are key features of solutions designed to communicate conclusions and findings arising from complex data sets. In this area of study students design a multimodal online solution with an educational purpose that is intended for a world-wide audience. When designing the solution, students generate two or three alternative design ideas and develop and apply criteria to select the design idea that will be fully detailed and transformed into a solution. Students use software tools and functions that support the types of data being manipulated to transform the design into a solution. Students also use their set of criteria to evaluate the effectiveness of their solution in presenting the conclusion and findings. During these problem-solving methodology stages students use their project plan to monitor and record progress and assess the effectiveness of this strategy in managing the project.

Area of Study 2

Information Management

This area of study focuses on information management and its importance to organisations. Students develop knowledge about the components of an information system and the role of these components in managing information. They investigate how different organisations store and dispose of their data and information. Students examine the threats to this data and information, whether accidental, deliberate or technical, and consider the potential consequences to organisations of ineffective information management strategies. Students recommend information management strategies to protect the integrity and security of data and information, taking into account key legal requirements of organisations and any ethical dilemmas faced by organisations and individuals regarding security of information.

Satisfactory Completion

The award of satisfactory completion for a unit is based on whether the student has demonstrated the set of outcomes specified for the unit.

Assessment of Levels of Achievement

All assessments at Units 1 and 2 are school-based. Procedures for assessment of levels of achievement in Units 1 and 2 are a matter for school decision.

The student's level of achievement in Units 3 & 4 will be determined by School-assessed Coursework and a School-assessed Task.

External Assessment

The level of achievement for Units 3 and 4 is also assessed by an end-of-year examination.

Contribution to Final Assessment

School-assessed Coursework for Unit 3 will contribute 10 per cent to the study score.
School-assessed Coursework for Unit 4 will contribute 10 per cent to the study score.
The School-assessed Task will contribute 30 per cent to the study score.
The examination will contribute 50 per cent.

ENGLISH

Scope of Study
VCE English focuses on how English language is used to create meaning in written, spoken and multimodal texts of varying complexity.

Literary texts selected for study are drawn from the past and present, from Australia and from other cultures. Other texts are selected for analysis and presentation of argument.
The study is intended to meet the needs of students with a wide range of expectations and aspirations, including those for whom English is an additional language.

Rationale
The study of English contributes to the development of literate individuals capable of critical and creative thinking, aesthetic appreciation and creativity. This study also develops students' ability to create and analyse texts, moving from interpretation to reflection and critical analysis.

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

This study will build on the learning established through AusVELS English in the key discipline concepts of language, literature and literacy, and the language modes of listening, speaking, reading, viewing and writing.

Structure
The study is made up of four units.
Each unit contains between two and three areas of study.

Entry
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.

Text selection
Units 1 and 2
In Units 1 and 2, text selection is a school-based decision, refer to book list.

Units 3 and 4
In Units 3 and 4, text selection is a school-based decision, refer to book list.

Unit 1
In this unit, students read and respond to texts analytically and creatively. They analyse arguments and the use of persuasive language in texts and create their own texts intended to position audiences.

Students develop their skills in creating written, spoken and multimodal texts.

Unit 2
In this unit students compare the presentation of ideas, issues and themes in texts. They analyse arguments presented and the use of persuasive language in texts and create their own texts intended to position audiences.
Students develop their skills in creating written, spoken and multimodal texts.

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

Unit 4
In this unit students compare the presentation of ideas, issues and themes in texts.
They create an oral presentation intended to position audiences about an issue currently debated in the media.

Assessment
Satisfactory Completion
The award of satisfactory completion for a unit is based on a decision that the student has demonstrated achievement of the set of outcomes specified for the unit. This decision will be based on the teacher's assessment of the student's performance on assessment tasks designated for the unit.

Levels of Achievement
Units 1 and 2
Comprises a number of tasks designed to test competencies and will be done under formal test conditions.

Units 3 and 4
The Victorian Curriculum and Assessment Authority will supervise the assessment of all students undertaking Units 3 and 4. In the study of VCE English/EAL students' level of achievement will be determined by School-assessed Coursework (SACs) as specified in the VCE study design, and external assessment.

Percentage contributions to the study score in VCE English/EAL are as follows:
- Unit 3 School-assessed Coursework: 25 per cent
- Unit 4 School-assessed Coursework: 25 per cent
- End-of-year examination: 50 per cent.

EAL (ENGLISH AS ANOTHER LANGUAGE)

The EAL course is the same as English but the EAL assessment tasks are appropriately modified to suit the needs of students for whom English is their second language.

ENGLISH LANGUAGE

Scope of Study
The study of English Language enables students to understand the structures, features and discourses of written and spoken texts through the systematic and objective deconstruction of language in use.

VCE English Language builds on students' previous learning about the conventions and codes used by speakers and writers of English. Informed by the discipline of linguistics, it provides students with metalinguistic tools to understand and analyse language use, variation and change. Students studying English Language understand that uses and interpretations of language are nuanced and complex, rather than a series of fixed conventions.

Students explore how people use spoken and written English to communicate, to think and innovate, to construct identities, to build and interrogate attitudes and assumptions, and to create and disrupt social cohesion.

Rationale
The study of English Language enables students to further develop and refine their own skills in reading, writing, listening to and speaking English. Students learn about personal and public discourses in workplaces, fields of study, trades or social groups.

In this study students read widely to develop their analytical skills and understanding of linguistics. Students are expected to study a range of texts, including publications and public commentary about language in print and multimodal form. Students also observe and discuss contemporary language in use, as well as consider a range of historical and contemporary written and spoken texts.

Structure
The study is made up of four units. Each unit contains two areas of study. Metalanguage underpins the key knowledge and key skills in each of the four units.

Students are required to understand and use the metalanguage contained in the unit and area of study introductions, the key knowledge and skills, and the metalanguage lists for Units 1 and 2, and Units 3 and 4.

Entry
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: Language and Communication
In this unit, students consider the way language is organised and explore the various functions of language and the nature of language as an elaborate system of signs.

The relationship between speech and writing as the dominant modes of language and the impact of situational and cultural contexts on language choices are also considered. Students investigate children's ability to acquire language, and the stages of language acquisition across a range of subsystems.

Unit 2: Language Change
In this unit, students consider factors contributing to change over time in the English language and factors contributing to the spread of English. They explore texts from the past and from the present, considering how all subsystems of the language system are affected.

Students also explore. They consider how the global spread of English has led to a diversification of the language and to English now being used by more people as an additional or a foreign language than as a first language. Students consider the cultural repercussions of the spread of English and the various possibilities for the future of English.

Unit 3: Language Variation and Social Purpose
In this unit students investigate English language in contemporary Australian social settings, along a continuum of informal and formal registers.

Students examine the stylistic features of formal and informal language in both spoken and written modes. Students learn how to describe the interrelationship between words, sentences and text as a means of exploring how texts construct message and meaning.

Students consider how texts are influenced by the situational and cultural contexts in which they occur. They learn how language can be indicative of relationships, power structures and purpose through the choice of a particular variety of language, and through the ways in which language varieties are used in processes of inclusion and exclusion.

Unit 4: Language Variation and Identity
In this unit students focus on the role of language in establishing and challenging different identities. Students examine both print and digital texts to consider the ways different identities are constructed.

Students explore how our sense of identity evolves in response to situations and experiences and is influenced by how we see ourselves and how others see us. Through our language we express ourselves as individuals and signal our membership of particular groups.

Students explore how language can distinguish between ‘us’ and ‘them’, creating solidarity and reinforcing social distance.

Assessment
Satisfactory Completion
The award of satisfactory completion for a unit is based on a decision that the student has demonstrated achievement of the set of outcomes specified for the unit. This decision will be based on the teacher’s assessment of the student’s performance on assessment tasks designated for the unit.

Levels of Achievement
Units 1 and 2
Procedures for the assessment of levels of achievement in Units 1 and 2 are a matter for school decision.

Units 3 and 4
The Victorian Curriculum and Assessment Authority will supervise the assessment of all students undertaking Units 3 and 4. In VCE English Language, students’ level of achievement will be determined by School-assessed Coursework and an end-of-year examination.

Percentage contributions to the study score in VCE English Language are as follows:
- Unit 3 School-assessed Coursework: 25 per cent
- Unit 4 School-assessed Coursework: 25 percent
- End-of-year examination: 50 per cent.

FOOD & TECHNOLOGY (Units 1 & 2 only)

Rationale

VCE Food and Technology focuses on the importance of food in our daily lives from both a theoretical and practical point of view. The study enables students to apply their theoretical understanding of the relationship between food and technology as they develop skills in food preparation.

Unit 1: Food Safety and Properties of Food

In this unit students study safe and hygienic food handling and storage practices to prevent food spoilage and food poisoning, and apply these practices in the preparation of food. They consider food preparation practices suitable for use in a small-scale food operation, such as in the home, a school setting or in a small food business. Students consider the selection and use of a range of tools and equipment suitable for use in food preparation.

Students examine the links between classification of foods and their properties, and examine changes in properties of food when different preparation and processing techniques are used. Students apply this knowledge when preparing food. They investigate quality and ethical considerations in food selection. Students use the design process to meet the requirements of design briefs to maximise the qualities of key foods.

Unit 2: Planning and Preparation of Food

In this unit students investigate the most appropriate tools and equipment to produce optimum results, including the latest developments in food technology. Students research, analyse and apply the most suitable food preparation, processing and cooking techniques to optimise the physical, sensory and chemical properties of food.

Students work both independently and as members of a team to research and implement solutions to a design brief. They use the design process to respond to challenges of preparing food safely and hygienically for a range of contexts and consumers, taking into account nutritional considerations, social and cultural influences, and resource access and availability. Students also explore environmental considerations when planning and preparing meals.

Assessment

Satisfactory Completion

The award of satisfactory completion for a unit is based on a decision that the student has demonstrated achievement of the set of outcomes specified for the unit. This decision will be based on the teacher's assessment of the student's performance on assessment tasks designated for the unit.

Levels of Achievement

Units 1 and 2

Procedures for the assessment of levels of achievement in Units 1 and 2 are a matter for school decision.

HEALTH & HUMAN DEVELOPMENT

Scope of Study

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 condition that is influenced by complex interrelationships between individuals and biomedical and behavioural factors, as well as physical and social environments. These interrelationships are reflected in a social view of health that sees health as being created in the settings where people live and work. This social view of health recognises the need for personal skills development, the importance of empowering communities to take action to promote health, the creation of social and physical environments that are supportive of health and development, an awareness of the impacts on health of public policies and the need for health services to be oriented towards health promotion and the prevention of ill health.

The VCE Health and Human Development study approaches the concept of 'development' as a continuum that begins with individual human development and progresses towards human development at a societal level. At an individual level, the study of human development is about individual change, that is, a continuous lifelong process that begins at conception and continues until death. Individual human developmental changes are cumulative; development that occurs in the future is dependent upon development occurring in the past. At a society level, the study takes a global perspective on health and human development and uses definitions of human development that are consistent with approaches taken by both the World Health Organization (WHO) and the United Nations (UN).

Human development at this level is about expanding people's choices and enhancing capabilities (the range of things people can be and do) and their freedoms; enabling people to live full, productive and creative lives; having access to knowledge, health and a decent standard of living; and participating in the life of their community and decisions affecting their lives (adapted from the United Nations Development Programme, 1990).

The study also promotes the understanding that nutrition plays a major role in influencing both health status and individual human development.

Rationale

VCE Health and Human Development provides students with the skills and knowledge to make informed decisions about their own health and to recognise the importance of health in society. In undertaking this study, they will be able to actively participate in making appropriate choices that allow for good health and be able to seek appropriate advice.

It enables students to understand the current ideologies of health and human development in contemporary society. Students critically evaluate the health and development of the individual across the lifespan in the context of both Australia's and global health and human development.

Also offers students a range of pathways and caters to those who wish to pursue further formal study in areas such as health promotion, community health research and policy development, humanitarian aid work, allied health practices, education, and the health profession.

Structure

The study is made up of four units:

Unit 1: The health and development of Australia's youth

Unit 2: Individual human development and health issues

Unit 3: Australia's health

Unit 4: Global health and human development

Each unit deals with specific content contained in areas of study and is designed to enable students to achieve a set of outcomes for that unit. Each outcome is described in terms of key knowledge and key skills.

Entry

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: The Health and Development of Australia's Youth

In this unit students are introduced to the concepts of health and individual human development. The World Health Organization (WHO) defines health as 'a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity' (World Health Organization, 1946). The WHO's definition is still widely used today, despite the identification of a number of limitations. Individual human development is a lifelong continuous process beginning at conception and ending with death and is perceived as involving a series of orderly and predictable changes, which can be classified as physical, social, emotional and intellectual. This unit focuses on the health and individual human development of Australia's youth. For the purposes of this study, 'youth' is defined as twelve to eighteen years of age; however, it should be acknowledged that some agencies may use differing age classifications for the stage of youth. There are many factors that influence health and individual human development of youth, including the importance of nutrition. The health status of Australia's youth is good and continues to improve as demonstrated by reductions in morbidity and mortality from communicable diseases, chronic diseases, suicide, motor vehicle accidents and other injuries. However, Australia's youth still experience a range of health issues that affect both their immediate and longer term health and individual human development. In this unit students identify issues that have an impact on the health and individual human development of Australia's youth. Students investigate one health issue in detail and analyse personal, community and government strategies or programs that affect youth health and individual human development.

Unit 2: Individual Human Development and Health Issues

Individual human development involves a series of orderly and predictable changes, which can be classified as physical, social, emotional and intellectual. Over the lifespan, individuals accumulate life experiences that affect both their health and individual human development.

This unit focuses on the health and individual human development for the lifespan stages of prenatal, childhood and adulthood. The prenatal stage is characterised as the most rapid time of growth and physical development during the human lifespan. During this stage the health and development of the embryo/foetus is shaped by a range of determinants, which in turn can have an impact on future health and development. Health and development during childhood has also been identified as having a significant impact on both health and development throughout the rest of the lifespan. There are many determinants of health and development of Australia's children; however, social factors such as family and community are crucial, as children develop through their relationships with others. The lifespan stage of adulthood represents a period of great diversity. The period of adulthood commonly spans a time frame of over sixty years. The health and individual human development of this group can vary considerably and is influenced by a range of determinants, which include physical environment, biological, behavioural and social. In this unit students identify issues that affect the health and individual human development of Australia's mothers and babies, children and adults. Students investigate health issues in detail and analyse personal, community and government strategies and programs that affect the health and individual human development of mothers and babies, children and adults.

Unit 3: Australia's Health

Australians generally enjoy good health and are among the healthiest people in the world. The health status of Australians can be measured in many ways, such as consideration of burden of disease, health adjusted life expectancy, disability adjusted life years (DALYs), life expectancy, under-five mortality rate, mortality and morbidity rates, incidence and prevalence of disease. Despite Australia's good health status, there is still potential for improvements. The National Health Priority Areas (NHPAs) initiative provides a national approach that aims to improve health status in the areas that contribute most of the burden of disease in Australia. Regardless of how health is measured, health is not shared equally by all Australians. Different levels of health are experienced by different groups, which can be attributed to the determinants of health, including the physical environment, biological, behavioural and social. Funding for the Australian health system involves a combination of both government and nongovernment sources. The Australian Government makes a significant contribution to the health system through the funding of Medicare. Both government and non-government organisations play an important role in the implementation of a range of initiatives designed to promote health in Australia.

Unit 4: Global Health and Human Development
This unit takes a global perspective on achieving sustainable improvements in health and human development. In the context of this unit human development is about creating an environment in which people can develop to their full potential and lead productive, creative lives in accord with their needs and interests. It is about expanding people's choices and enhancing capabilities (the range of things people can be and do), having access to knowledge, health and a decent standard of living, and participating in the life of their community and decisions affecting their lives (adapted from the United Nations Development Programme, 1990). Sustainability 'implies meeting the needs of the present without compromising the ability of future generations to meet their own needs' (96th plenary meeting of the UN, December 1987). The United Nations (UN) human development work is encapsulated in the Millennium Development Goals, where the world's countries have agreed to a set of measurable goals and targets for combatting poverty, hunger, disease, illiteracy, environmental degradation and discrimination against women. A significant focus of the Millennium Development Goals is reducing the inequalities that result in human poverty and lead to inequalities in health status and human development. The World Health Organization (WHO) is the directing and coordinating authority for international health within the United Nations. Both the WHO and the UN have a range of strategies aimed at reducing global burdens of disease and promoting human development through the achievement of the Millennium Development Goals. The Australian Agency for International Development (AusAID) manages the Australian Government's overseas aid program. AusAID aims to reduce poverty in developing countries and improve human development, with a focus on assisting developing countries to achieve the Millennium Development Goals. Non-government organisations also play a role in promoting sustainable human development.

Assessment
Satisfactory Completion
The award of satisfactory completion for a unit is based on a decision that the student has demonstrated achievement of the set of outcomes specified for the unit. This decision will be based on the teacher's assessment of the student's performance on assessment tasks designated for the unit.

Levels of Achievement
Units 1 and 2
Procedures for the assessment of levels of achievement in Units 1 and 2 are a matter for school decision.

Units 3 and 4
The Victorian Curriculum and Assessment Authority will supervise the assessment of all students undertaking Units 3 and 4. In the study of VCE Health and Human Development students' level of achievement will be determined by School-assessed Coursework and an end-of-year examination.

Percentage contributions to the study score in VCE Health and Human Development are as follows:
- Unit 3 School-assessed Coursework: 25 per cent
- Unit 4 School-assessed Coursework: 25 per cent
- End-of-year examination: 50 per cent.

HISTORY

Units 1 & 2 Twentieth Century History 1918 - 1939

Scope of Study
In Unit 1 students explore the nature of political, social and cultural change in the period between the world wars. World War I is regarded by many as marking the beginning of twentieth century history since it represented such a complete departure from the past and heralded changes that were to have an impact for decades to come.

The post-war treaties ushered in a period where the world was, to a large degree, reshaped with new borders, movements, ideologies and power structures. These changes affected developments in Europe, the USA, Asia, Africa and the Middle East. Economic instability caused by the Great Depression also contributed to the development of political movements. Despite ideals about future peace, reflected in the establishment of the League of Nations, the world was again overtaken by war in 1939.

The period after World War One was characterised by significant social and cultural change in the contrasting decades of the 1920s and 1930s. New fascist governments used the military, education 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.

Unit 1 Ideology and Conflict
- *What impact did the treaties which concluded World War One have on nations and people?*
- *What were the dominant ideologies of the period?*
- *What impact did the post-war treaties, the development of ideologies and the economic crisis have on the events leading to World War Two?*

In this area of study students explore the events, ideologies and movements of the period after World War One; the emergence of conflict; and the causes of World War Two. They investigate the impact of the treaties which ended the Great War and which redrew the map of Europe and broke up the former empires of the defeated nations. They consider the aims, achievements and limitations of the League of Nations.

While democratic governments initially replaced the monarchies and authoritarian forms of government in European countries at the end of the war, new ideologies of socialism, communism and fascism gained popular support. Communism emerged in Russia after the 1917 Bolshevik Revolution. Fascism first emerged in Italy where the Italian Fascist Party gained power in 1922 and before the end of the decade fascist parties existed in several European countries. In 1933, Adolf Hitler's National Socialist (Nazi) Party gained power in Germany. In Japan, the government was increasingly influenced by the military and by anti-Western attitudes, shaping much of its political and social action. In the wake of World War One, the USA pursued an isolationist policy and while the 'Roaring Twenties' was a decade of economic growth, the thirties saw considerable suffering as a result of the Depression.

Economic instability, territorial aggression and totalitarianism combined to draw the world into a second major conflict in 1939.

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.

Unit 2 Social & Cultural Change

- *What continuity and what change is evident between the 1920s and 1930s in social and cultural life?*
- *How did ideologies affect the daily lives of people?*
- *How did cultural life both reflect and challenge the prevailing political, economic and social circumstances?*

In this area of study students focus on the social life and cultural expression in the 1920s and 1930s and their relation to the technological, political and economic changes of the period. Students explore particular forms of cultural expression from the period in one or more of the following contexts: Italy, Germany, Japan, USSR and/or USA.

The period between the wars was characterised by significant social and cultural change. While the 1920s was largely marked by optimism and material prosperity in the West, by contrast the 1930s was a period of severe economic hardship for many dominated by the impact of the Great Depression. The emergence of new governments in Italy, Germany and Japan at the end of World War One led to the emergence of societies driven by new ideologies and in some countries the consequent oppression and persecution of certain groups, the most extreme case being the Holocaust of Nazi Germany. In the USSR, the establishment of a communist regime in 1917 was initially greeted with support by a large proportion of the people, but under Stalin millions of people were forced to work in state-owned factories and farms and dissenters were sent to labour camps.

In the USA controls such as prohibition and race segregation affected the lives of many people during the decades between the wars. While the 1920s was characterised by material progress, increased personal freedoms and unprecedented economic growth, the Great Depression brought hardship.

The creative arts both reflected and challenged social life and change in this period where mass entertainment and information by means of radio and film became widespread.

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.

Units 3 & 4 Revolutions

Scope of Study

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

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

In these units students develop an understanding of the complexity and multiplicity of causes and consequences in the revolutionary narrative. They construct an argument about the past using primary sources as evidence and evaluate the extent to which the revolution brought change to the lives of people. They consider how perspectives of the revolution give an insight into the continuity and change experienced by those who lived through dramatic revolutionary moments. Students evaluate historical interpretations about the causes and consequences of revolution and the effects of change instigated by the new order. For the two selected revolutions, both areas of study must be undertaken. Students are expected to demonstrate a progression from Unit 3 to Unit 4 in historical understanding and skills.

The periods for this study are:

- The French Revolution from 1774 to October 1789 (Accession of Louis XVI to the throne to The October Days 1789)
- The Russian Revolution from 1896 to October 1917 (Coronation of Tsar Nicholas to the 25th October Revolution 1917)

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

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

In this area of study 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 analyse significant events and evaluate how particular conditions profoundly influenced and contributed to the outbreak of revolution. They consider triggers such as, in France, the calling of the Estates-General.

Revolutionary ideologies emerged in opposition to the existing and dominant order, such as Leninism in Russia. These ideologies were utilised by individuals and movements to justify revolutionary action and change. In the French Revolution, students analyse the degree to which the influence of enlightenment thinking was instrumental in promoting change in French Society.

Revolutions can be caused by the motivations and the intended and unintended actions of individuals who shape and influence the course of revolution. Individuals such as Louis XVI and Emmanuel Joseph Sieyès in France, had a significant impact on the course of revolution.

Students evaluate historical interpretations about the causes of revolution and explain why differing emphases are placed on the role of events, ideas, individuals and popular movements.

On completion of this unit the student should be able to analyse the causes of revolution, and evaluate the contribution of significant ideas, events, individuals and popular movements.

Assessment
Satisfactory Completion
The award of satisfactory completion for a unit is based on a decision that the student has demonstrated achievement of the set of outcomes specified for the unit. This decision will be based on the teacher's assessment of the student's performance on assessment tasks designated for the unit.

Levels of Achievement
Units 1 and 2
Procedures for the assessment of levels of achievement in Units 1 and 2 are a matter for school decision.

Units 3 and 4
The Victorian Curriculum and Assessment Authority will supervise the assessment of all students undertaking Units 3 and 4. In the study of History students' level of achievement will be determined by School-assessed Coursework and an end-of-year examination.

Contribution to Final Assessment
School-assessed Coursework for Unit 3 will contribute 25 per cent to the study score.
School-assessed Coursework for Unit 4 will contribute 25 per cent to the study score.
The examination will contribute 50 per cent.

LANGUAGES - GERMAN

Rationale
The study of a language other than English contributes to the overall education of students, most particularly in the area of communication, but also in the areas of cross-cultural understanding, intercultural learning, cognitive development, literacy and general knowledge. It provides access to the culture of communities which use the language and promotes understanding of different attitudes and values within the wider Australian community and beyond.

The ability to communicate in another language, in conjunction with other skills, may provide opportunities for employment in the fields of interpreting, social services, ethnic affairs, the tourism and hospitality industries, international relations, the arts, commerce, technology, science, education etc.

Structure
The study is made up of four units, each involving at least 50 hours of scheduled classroom instruction.

Outcomes
Outcomes define what students will know and be able to do as a result of undertaking the study. *Outcomes* include a summary statement and the key knowledge and skills that underpin them. Only the summary statements of the outcomes have been reproduced below and must be read in conjunction with the key knowledge and skills published in each language study design.

Students demonstrate the achievement of the outcomes based on progressive development of skills in listening, speaking, reading and writing through activities and tasks organised around the areas of study. The areas of study in Units 1–4 focus on the areas of study for language, which are made up of the themes and topics, text types, kinds of writing, vocabulary and grammar. They are common to all four units of the study and are published in the study design. They are tailored to the specific qualities of the language being studied.

Unit 1
The three outcomes for Unit 1 are:
Outcome 1
On completion of this unit the student should be able to establish and maintain a spoken or written exchange related to personal areas of experience.

Outcome 2
On completion of this unit the student should be able to listen to, read and obtain information from spoken and written texts.

Outcome 3
On completion of this unit the student should be able to produce a personal response to a text focusing on real or imaginary experience.

Unit 2
The three outcomes for Unit 2 are:
Outcome 1
On completion of this unit the student should be able to participate in a spoken or written exchange related to making arrangements and completing transactions.

Outcome 2
On completion of this unit the student should be able to listen to, read, and extract and use information and ideas from spoken and written texts.

Outcome 3
On completion of this unit the student should be able to give expression to real or imaginary experience in spoken or written form.

Unit 3
The three outcomes for Unit 3 are:
Outcome 1
On completion of this unit the student should be able to express ideas through the production of original texts.

Outcome 2
On completion of this unit the student should be able to analyse and use information from spoken texts.

Outcome 3
On completion of this unit the student should be able to exchange information, opinions and experiences.

Unit 4
The two outcomes for Unit 4 are:

Outcome 1
On completion of this unit the student should be able to analyse and use information from written texts.

Outcome 2
On completion of this unit the student should be able to respond critically to spoken and written texts which reflect aspects of the language and culture of German-speaking communities.

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

Assessment
Satisfactory Completion
Demonstrated achievement of the set of outcomes specified for the unit.

Levels of Achievement
Unit 1 and 2
Individual school decision on levels of achievement, 4 outcomes per unit.

Unit 3 and 4
School-assessed coursework and end-of-year examinations:

- Unit 3 school-assessed coursework: 25 per cent
- Unit 4 school-assessed coursework: 25 per cent
- Examinations: oral component 12.5 per cent
  written component 37.5 per cent

LEGAL STUDIES

Rationale

VCE Legal Studies investigates the ways in which the law and the legal system relate to and serve individuals and the community. This knowledge is central to understanding the workings of contemporary Australian society. Legal Studies examines the processes of law-making, dispute resolution and the administration of justice in Australia. Students develop an understanding of the impact of the legal system on the lives of citizens, and the implications of legal decisions and outcomes on Australian society. The study provides students with an appreciation of how individuals can be involved in decision-making within the legal system, encouraging civic engagement and helping them to become more informed and active citizens.

Students develop an understanding of the complexity of the law and the legal system and the challenges faced by our law-makers and dispute resolution bodies. They investigate the workings of the Australian legal system and undertake comparisons with international structures and procedures. Students are encouraged to question these systems and develop informed judgments about their effectiveness, as well as consider reforms to the law and the legal system. Legal Studies also focuses on the development of skills. Students develop an ability to identify, collect and process information from a range of sources and engage in its interpretation and analysis. Skills for independent inquiry, critical thinking and legal reasoning to solve legal problems are also fostered. Students are required to apply legal reasoning and decision-making to contemporary cases and issues. They engage in analysis and evaluation of existing legal processes and form opinions about the operation of the legal system.

Structure

The study is made up of four units:

Unit 1: Criminal law in action
Unit 2: Issues in civil law
Unit 3: Law-making
Unit 4: Resolution and justice

Each unit contains between two and four areas of study.

Entry

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: Criminal Law in Action

The law influences all aspects of society – at home, at work and in the wider community. Laws are used by society to preserve social cohesion, and to ensure the protection of people from harm and from the infringement of their rights. These laws can be grouped according to their source and whether they are criminal or civil in nature. Following an overview of the law in general, this unit focuses on criminal law. Students examine the need for laws in society. They investigate the key features of criminal law, how it is enforced and adjudicated and possible outcomes and impacts of crime. Through a consideration of contemporary cases and issues, students learn about different types of crimes and explore rights and responsibilities under criminal law. Students also consider the role of parliament and subordinate authorities in law-making, as well as the impact of the Victorian Charter of Rights and Responsibilities on law enforcement and adjudication in Victoria. Students investigate the processes and procedures followed by courts in hearing and resolving criminal cases. They explore the main features and operations of criminal courts and consider the effectiveness of the criminal justice system in achieving justice.

Unit 2: Issues in Civil Law

The civil law regulates the rights and responsibilities that exist between individuals, groups and organisations. If legal rights have been infringed, the aggrieved party may pursue legal action through the court system, through a tribunal, or by using one of the methods of dispute resolution. Students examine the rights that are protected by civil law, as well as obligations that laws impose. They investigate types of civil laws and related cases and issues and develop an appreciation of the role of civil law in society and how it affects them as individuals.

The unit also focuses on the resolution of civil disputes through judicial determination and alternative methods in courts, tribunals and independent bodies. Students examine these methods of dispute resolution and evaluate their effectiveness. Individuals can influence a change in the law by taking a case to court. Students focus on cases that have had a broader impact on the legal system and on the rights of individuals. Students develop an appreciation of the role played by such cases and undertake an analysis of relevant legal issues.

Unit 3: Law-making
In this unit students develop an understanding of the institutions that determine our laws, and their law-making powers and processes. They undertake an informed evaluation of the effectiveness of law-making bodies and examine the need for the law to keep up to date with changes in society. Students develop an appreciation of the complex nature of law-making by investigating the key features and operation of parliament, and influences on law-making, with a focus on the role of the individual. Central to the investigation of law-making is the role played by the Commonwealth Constitution. Students develop an understanding of the importance of the Constitution in their lives and on society as a whole, and undertake a comparative analysis with another country. They learn of the importance of the role played by the High Court of Australia in interpreting and enforcing the Constitution, and ensuring that parliaments do not act outside their areas of power nor infringe protected rights. Students investigate the nature and importance of courts as law-makers and undertake an evaluation of their effectiveness as law-making bodies. They also investigate the relationships that exist between parliaments and courts. Throughout this unit, students examine relevant cases to support their learning and apply legal principles to these cases.

Unit 4: Resolution and Justice
The legal system provides mechanisms by which legal disputes of both a criminal and a civil nature can be resolved in a fair and just manner. Dispute resolution bodies such as courts and tribunals employ a range of means and processes that enables the resolution of legal disputes.
Students examine the institutions that adjudicate criminal cases and civil disputes. They also investigate methods of dispute resolution that can be used as an alternative to civil litigation. Students investigate the processes and procedures followed in courtrooms and develop an understanding of the adversary system of trial and the jury system, as well as pre-trial and post-trial procedures that operate in the Victorian legal system. Using the elements of an effective legal system, students consider the extent to which court processes and procedures contribute to the effective operation of the legal system. They also consider reforms or changes that could further improve its effective operation. Throughout this unit, students examine current or recent cases to support their learning, and apply legal principles to these illustrative cases.

Assessment
Satisfactory Completion
The award of satisfactory completion for a unit is based on a decision that the student has demonstrated achievement of the set of outcomes specified for the unit. This decision will be based on the teacher's assessment of the student's performance on assessment tasks designated for the unit.

Levels of Achievement
Units 1 and 2
A combination of structured assignments, an action plan and report, case study, tests and a 90 minute examination.

Units 3 and 4
The Victorian Curriculum and Assessment Authority will supervise the assessment of all students undertaking Units 3 and 4. In the study of VCE Legal Studies students' level of achievement will be determined by School-assessed Coursework and an end-of-year examination.

Percentage contributions to the study score in VCE Legal Studies are as follows:
- Unit 3 School-assessed Coursework: 25 per cent
- Unit 4 School-assessed Coursework: 25 per cent
- End-of-year examination: 50 per cent.

LITERATURE (Units 1 & 2 Only)

Scope of study
In VCE Literature students undertake close reading of texts and analyse how language and literary elements and techniques function within a text. Emphasis is placed on recognition of a text's complexity and meaning, and on consideration of how that meaning is embodied in its literary form.

The study provides opportunities for reading deeply, widely and critically, responding analytically and creatively, and appreciating the aesthetic merit of texts. VCE Literature enables students to examine the historical and cultural contexts within which both readers and texts are situated.

It investigates the assumptions, views and values which both writer and reader bring to the texts and it encourages students to contemplate how we read as well as what we read. It considers how literary criticism informs the readings of texts and the ways texts relate to their contexts and to each other.

Rationale
VCE Literature provides opportunities for students to develop their awareness of other people, places and cultures and explore the way texts represent the complexity of human experience. Students examine the evolving and dialogic nature of texts, the changing contexts in which they were produced and notions of value.

They develop an understanding and appreciation of literature, and an ability to reflect critically on the aesthetic and intellectual aspects of texts. The study of Literature enables students to consider the power and complexity of language, the ways literary features and techniques contribute to meaning and the significance of form and structure.

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

They develop an awareness of how the views and values that readers hold may influence the reading of a text.

Unit 2: Context and connections
In this unit students explore the ways literary texts connect with each other and with the world. They deepen their examination of the ways their own culture and the cultures represented in texts can influence their interpretations and shape different meanings.

Students consider the relationships between authors, audiences and contexts and analyse the similarities and differences across texts and establish connections between them. They engage in close reading of texts and create analytical responses that are evidence-based.

Satisfactory completion
The award of satisfactory completion for a unit is based on a decision that the student has demonstrated achievement of the set of outcomes specified for the unit. This decision will be based on the teacher's assessment of the student's performance on assessment tasks designated for the unit.

Levels of achievement
Units 1 and 2
Procedures for the assessment of levels of achievement in Units 1 and 2 are a matter for school decision.

MATHEMATICS

Rationale
Mathematics is designed to provide access to worthwhile and challenging mathematical learning and is also designed to promote students' awareness of the importance of mathematics in everyday life in a technological society.

Aims
This study enables students to:
- develop mathematical concepts, knowledge and skills
- apply mathematics to analyse, investigate and model a variety of contexts and solve practical and theoretical problems in situations that range from well-defined and familiar to open-ended and unfamiliar
- use technology effectively as a tool for working mathematically.

Structure
The study is made up of the following units:
- Foundation Mathematics Units 1 and 2
- General Mathematics Units 1 and 2
- Mathematical Methods Units 1 and 2
- Specialist Mathematics Units 1 and 2
- Further Mathematics Units 3 and 4
- Mathematical Methods Units 3 and 4
- Specialist Mathematics Units 3 and 4

Due to changes in VCE Maths studies, student choices of Maths classes at Year 11 have been reviewed. Mathematical Methods requires a high level of understanding in all topics.

Despite our program of teacher recommendations and subject counselling, we feel that some students are still making inappropriate choices.

UNITS 1 & 2

In order to make sure that students are aware of the level of difficulty involved in the various VCE Maths studies available in 2016, recommended guidelines for entry into Maths Methods Units 1 & 2 and General Maths Units 1 & 2 will operate.

<u>To enrol in:</u>
- **Year 11 Maths methods, students need to achieve at least 60% pass on the Semester Exams and an average of at least 60% on topic tests.**

- **Year 11 General Maths, students need to achieve at least 50% pass on the Semester Exams and an average of at least 50% on topic tests.**

- **Year 11 Specialist Maths, students needs to show excellence in all topics throughout the year.**

Students who do not attaint this standard will be recommended to do one of the following:
1. **Enrol in Units 1 & 2 Foundation Maths**
2. **Do no VCE Maths**
3. **Repeat year 10 Maths.**

FOUNDATION MATHEMATICS UNITS 1 AND 2 provide for the continuing mathematical development of students entering VCE. In general, these students would **NOT** intend to undertake Unit 3 and 4 studies in VCE Mathematics in the following year.

There is a strong emphasis on the use of mathematics in practical contexts encountered in everyday life in the community, at work and at study. The areas of study for Units 1 and 2 of Foundation Mathematics are 'Space, shape and design', 'Patterns and number', 'Data' and 'Measurement'.

GENERAL MATHEMATICS UNITS 1 AND 2 provide for a range of courses of study involving non-calculus based topics for a broad range of students and may be implemented in various ways to reflect student interests in, and applications of, mathematics. They incorporate topics that provide preparation for various combinations of studies at Units 3 and 4 and cover assumed knowledge and skills for those units.

The areas of study for General Mathematics Unit 1 and Unit 2 are 'Algebra and structure', 'Arithmetic and number', 'Discrete mathematics', 'Geometry, measurement and trigonometry', 'Graphs of linear and non-linear relations' and 'Statistics'.

MATHEMATICAL METHODS UNITS 1 AND 2 are completely prescribed and provide an introductory study of simple elementary functions, 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 cover assumed knowledge and skills for those units.

Mathematical Methods provides a course for students wanting to study a **HIGH** level of maths. There is a strong emphasis on Algebra and Graphs including functions with various powers, intercepts, asymptotic behaviour, domain and range. It also includes the introduction to rates of change and calculus.

SPECIALIST MATHEMATICS UNITS 1 AND 2 provide courses of study for students interested in **ADVANCED** study of mathematics, with a focus on mathematical structure and reasoning. Units 1 and 2, provide preparation for Specialist Mathematics Units 3 and 4.

The areas of study are Number Systems, Geometry and Trigonometry and Discrete Mathematics. A sound background in algebra is vital as this study extends and develops topics from Mathematical Methods.

UNITS 3 & 4

To enrol in:

- **Maths Methods Units 3 & 4, students need to achieve an average of at least 60% on topic tests and the Semester Exams in Maths Methods Units 1 and 2.**
- **Further Maths Units 3 & 4, students need to achieve an average of at least 60% on topic tests in General Maths or have satisfactorily completed Maths Methods Units 1 and 2 and passed the Semester Exams.**
- **Specialist Maths, students need to achieve an average of at least 70% on topic tests in Maths Methods and 60% in Specialist Maths and passes on both Semester Exams.**

These guidelines will hopefully improve the student's ability to maximise possible ATAR scores by giving them realistic expectations in subject selection.

FURTHER MATHEMATICS UNITS 3 AND 4 are designed to be widely accessible and comprise a combination of non-calculus based content from a prescribed core and a selection of two from four possible modules. They provide general preparation for employment or further study, in particular where data analysis, recursion and number patterns are important. The assumed knowledge and skills for the Further Mathematics Units 3 and 4 are covered in specified topics from General Mathematics Units 1 and 2.

Area of Study 1 – Unit 3
Core
Data Analysis - Investigating data distributions, investigating associations between two variables, investigating and modelling linear associations and investigating and modelling time series data.

Recursion and Financial Modelling - Depreciation of assets, compound interest investments and loans, reducing balance loans, annuities and perpetuities and compound interest.

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

Matrices - This module covers definition of matrices, different types of matrices, matrix operations, transition matrices and the use of first-order linear matrix recurrence relations.

Networks and Decision Mathematics - This module covers definition and representation of different kinds of undirected and directed graphs, eulerian trails, eulerian circuits, bridges, hamiltonian paths and cycles.

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

Graphs and Relations - This module covers the use of linear relations, including piecewise defined relations, and non-linear relations to model a range of practical situations.

MATHEMATICAL METHODS UNITS 3 AND 4 extend the study of simple elementary functions to include combinations of these functions, algebra, calculus, probability and statistics and their applications. They also provide background for further study in, for example, science, humanities, economics and medicine.

Area of Study 1 - Functions and Graphs - In this area of study students cover transformations of the plane and the behaviour of some elementary functions of a single real variable, including key features of their graphs such as axis intercepts, stationary points, points of inflection, domain, co-domain and range, asymptotic behaviour and symmetry.

Area of Study 2 - Algebra - In this area of study students cover the algebra of functions, including composition of functions, simple functional relations, inverse functions and the solution of equations. Students also cover recognition of equations and systems of equations that are solvable using inverse operations or factorisation, and the use of graphical and numerical approaches for problems involving equations where exact value solutions are not required.

Area of Study 3 - Calculus - In this area of study students cover graphical treatment of limits, continuity and differentiability, differentiation, anti-differentiation and integration of these functions.

Area of Study 4 - Probability and Statistics - In this area of study students cover discrete and continuous random variables, their representation using tables, probability functions, the calculation and interpretation of central measures and measures of spread; and statistical inference for sample proportions.

SPECIALIST MATHEMATICS UNITS 3 AND 4 are designed to be taken in conjunction with Mathematical Methods Units 3 and 4. The areas of study include rational and other quotient functions as well as other advanced mathematics topics such as complex numbers, vectors, differential equations, mechanics and statistical inference. Study of Specialist Mathematics Units 3 and 4 assumes concurrent study or previous completion of Mathematical Methods Units 3 and 4.

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

Area of Study 2 - Algebra - In this area of study students cover the expression of simple rational functions as a sum of partial fractions; the arithmetic and algebra of complex numbers, including polar form; points and curves in the complex plane.

Area of Study 3 - Calculus - In this area of study students cover advanced calculus techniques for analytic and numeric differentiation and integration of a range of functions. They include curve sketching, evaluation of arc length, area and volume, differential equations and kinematics.

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

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

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

Entry

Students undertaking Mathematical Methods Units 1 and 2 or Specialist Mathematics Units 1 and 2 are assumed to have a sound background in number, algebra, function, geometry, probability and statistics. Students must undertake Unit 3 prior to undertaking Unit 4. There are no restrictions on the number of units students may obtain credit towards satisfactory completion of the VCE.

Satisfactory Completion

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. Demonstration of achievement of outcomes and satisfactory completion of a unit are determined by evidence gained through the assessment of a range of learning activities and tasks. Procedures for the assessment of levels of achievement in Units 1 and 2 are a matter for school decision.

Further Mathematics - Units 3 and 4

- Unit 3 School-assessed Coursework: 20 per cent
- Unit 4 School-assessed Coursework: 14 per cent
- Units 3 and 4 Examination 1: 33 per cent
- Units 3 and 4 Examination 2: 33 per cent

Mathematical Methods & Specialist Mathematics - Units 3 and 4

- Unit 3 School-assessed Coursework: 17 per cent
- Unit 4 School-assessed Coursework: 17 per cent
- Units 3 and 4 Examination 1: 22 per cent
- Units 3 and 4 Examination 2: 44 per cent

MEDIA (Units 1 & 2 only)

Scope of study

The media is a diverse, dynamic and evolving collection of forms used to inform, communicate with and connect people. Media influence the way people spend their time, help shape the way they perceive themselves and others, and play a crucial role in the creation and exchange of personal, social, cultural, national and global identities. The media entertain, educate, inform and provide channels of communication. This takes place within the broader context of: industrial organisation; political and market structures; professional practices; creative processes; traditional, contemporary and emerging technologies; regulation; and the need to attract and maintain audiences.

The relationships between such frames of reference and audiences shape media products and the ways in which they are developed, constructed, distributed and consumed. Notions of audience underlie the creation, distribution, consumption and reception of media texts. Media texts are representations of social, personal and cultural reality, which have been constructed through a process of selection and omission, using media codes and conventions.

Codes and conventions may be common to all media products, or specific to individual media forms, texts, genres and styles. VCE Media examines media products as the expression of creative ideas, specific symbolic languages and discourses of society and culture that shape meaning and reflect the society in which they were created.

This study explores a variety of media forms, including audio, audiovisual media, print-based media, digital and interactive media technologies and convergent media processes. Students examine and analyse the relationships between audiences and the media; this analysis is undertaken through a theoretical and practical study that places the student in the role of a media creator.

Rationale

VCE Media provides students with the opportunity to analyse media products and concepts in an informed and critical way. Students consider media texts, technologies and processes from various perspectives, including an analysis of structure and features. They examine industry production and distribution context, audience reception and the media's contribution to and impact on society.

This aspect of the study is integrated with the individual and collaborative design and production of media representations and products. VCE Media supports students to develop and refine their analytical, critical, creative thinking and expression.

Students strengthen their communication skills and technical knowledge. This study is relevant for students who wish to pursue further formal study at tertiary level or in vocational education and training settings. The study provides knowledge and skills in creative thinking, planning, analysis, creative expression and communication valuable for participation in and contribution towards contemporary society.

Structure

The study is made up of four units.
Each unit contains three areas of study.
Unit 1: Representation and technologies of representation
Unit 2: Media production and the media industry
Each unit deals with specific content contained in areas of study and is designed to enable students to achieve a set of outcomes for that unit. Each outcome is described in terms of key knowledge and key skills.

Entry
There are no prerequisites for entry to Units 1, 2 and 3.

Unit 1: Representation and Technologies of Representation
In this unit students develop an understanding of the relationship between the media, technology and the representations present in media forms. They study the relationships between media technologies, audiences 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, the role audiences play in constructing meaning from media representations, and the creative and cultural impact of new media technologies.

Assessment:
Outcome 1
Will be a written task where students analyse two representations in different media forms.

Outcome 2
Requires students to make two or more productions in different media forms.

Outcome 3
Involves students investigating new media and its impact on society. Students will have a choice about the way they wish to present their ideas.

Unit 2: Media production and the Media Industry
In this unit students develop their understanding of the specialist production stages and roles within the collaborative organisation of media production. Students participate in specific stages of a media production, developing practical skills in their designated role.

Students also develop an understanding of media industry issues and developments relating to production stages and roles and the broader framework within which Australian media organisations operate.

Assessment:
Outcome 1
Requires students to form production companies to make a media production.

Outcome 2
Will be a written task that examines some of the issues in media production.

Outcome 3
Will involve students completing an investigation of a media organisation of their choice.

Assessment
Satisfactory Completion
The award of satisfactory completion for a unit is based on a decision that the student has demonstrated achievement of the set of outcomes specified for the unit. This decision will be based on the teacher's assessment of the student's performance on assessment tasks designated for the unit.

Levels of Achievement
Units 1 and 2
Procedures for the assessment of levels of achievement in Units 1 and 2 are a matter for school decision.

MUSIC PERFORMANCE

Rationale

Music is an integral part of all cultures and societies, both contemporary and historical. The study of music develops students' understanding of artistic processes and contributes to the development of the aesthetic, cognitive, psychomotor and affective domains.

VCE Music offers students opportunities to engage in the practice of performing, creating and studying music that is representative of diverse genres, styles and cultures. Students can specialise in one or more approaches to the study of music, depending on their VCE program overall and the post-VCE pathways they may be interested in following.

Students develop knowledge of stylistic, aesthetic and expressive qualities and characteristics of music and develop their ability to communicate their understanding through music making: performing, composing, arranging and/or improvising; and musicianship: aural perception, analysis and music language.

VCE Music offers students opportunities for personal development and to make an ongoing contribution to the culture of their community through participation in life-long music making.

Structure

Music Performance Units 1, 2, 3 and 4

Units 1–2: 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.

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.

Units 3–4: Music Performance – Group 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.

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.

Assessment
Satisfactory Completion
The award of satisfactory completion for a unit is based on a decision that the student has demonstrated achievement of the set of outcomes specified for the unit. This decision will be based on the teacher's assessment of the student's performance on assessment tasks designated for the unit.

Levels of Achievement
Units 1 and 2
Procedures for the assessment of levels of achievement in Units 1 and 2 are school assessed:
- Solo Performance 50%
- Aural Skills exam 25%
- Written Report 25%

Units 3 and 4
The Victorian Curriculum and Assessment Authority will supervise the assessment of all students undertaking Units 3 and 4. In the study of VCE Music Performance students' level of achievement will be determined by School-assessed Coursework, an end-of-year performance examination and an end-of-year aural and written examination.

Percentage contributions to the study score in VCE Music are as follows:

VCE Music Performance 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

PHYSICAL EDUCATION

Rationale
VCE Physical Education examines the biological, physiological, psychological, social and cultural influences on performance and participation in physical activity. It focuses on the interrelationship between motor learning and psychological, biomechanical, physiological and sociological factors that influence physical performances, and participation in physical activity. The study of physical activity and sedentary behaviour is significant for the understanding of health, wellbeing and performance of people.

The study enables the integration of theoretical knowledge with practical application through participation in physical activities. There are opportunities for students to apply theoretical concepts and reflect critically on factors that affect all levels of performance and participation.

This VCE study is suitable for students with a wide range of aspirations, including those who wish to pursue further formal study at tertiary level or in vocational education and training settings. The study prepares students for such fields as the health sciences, exercise science and education, as well as providing valuable knowledge and skills for participating in their own sporting and physical activity pursuits to develop as critical practitioners and lifelong learners.

Structure
The study is made up of four units:
Unit 1: Bodies in motion
Unit 2: Sports coaching and physically active lifestyles
Unit 3: Physical activity participation and physiological performance
Unit 4: Enhancing performance
Each unit contains between two and four areas of study.

Entry
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: Bodies in Motion
In this unit students explore how the body systems work together to produce movement and analyse this motion using biomechanical principles. Through practical activities students explore the relationships between the body systems and physical activity. They are introduced to the aerobic and anaerobic pathways utilised to provide the muscles with the energy required for movement and the basic characteristics of each pathway.

Students apply biomechanical principles to improve and refine movement. They use practical activities to demonstrate biomechanical principles and how the correct application of biomechanics can lead to improved performance in sport and physical activity.

In Area of Study 3, there are two detailed studies: Technological advancements from a biomechanical perspective and Injury prevention and rehabilitation, which will expand and build on the knowledge and skills introduced in Areas of Study 1 and 2. Students select one of these detailed studies to explore in greater depth.

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

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

In Area of Study 3, there are two detailed studies: Decision making in sport and Promoting active living, which will expand and build on the knowledge and skills introduced in Areas of Study 1 and 2. Students select one of these detailed studies to explore in greater depth.

Unit 3: Physical Activity Participation and Physiological Performance
This unit introduces students to an understanding of physical activity and sedentary behaviour from a participatory and physiological perspective. Students apply various methods to assess physical activity and sedentary levels, and analyse the data in relation to adherence to the National Physical Activity Guidelines. Students study and apply the social-ecological model to identify a range of Australian strategies that are effective in promoting participation in some form of regular activity.

Students investigate the contribution of energy systems to performance in physical activity. In particular, they investigate the characteristics of each system and the interplay of the systems during physical activity. Students explore the multi-factorial causes of fatigue and consider different strategies used to delay and manage fatigue and to promote recovery.

Unit 4: Enhancing Performance
Improvements in performance, in particular fitness, depend on the ability of the individual or coach to gain, apply and evaluate knowledge and understanding of training. Students undertake an activity analysis. Using the results of the analysis, they then investigate the required fitness components and participate in a training program designed to improve or maintain selected components.

Athletes and coaches aim to continually improve and use nutritional, physiological and psychological strategies to gain advantage over the competition. Students learn to critically evaluate different techniques and practices that can be used to enhance performance, and look at the rationale for the banning or inclusion of various practices from sporting competition.

Assessment
Satisfactory Completion
The award of satisfactory completion for a unit is based on a decision that the student has demonstrated achievement of the set of outcomes specified for the unit. This decision will be based on the teacher's assessment of the student's performance on assessment tasks designated for the unit.

Levels of Achievement
Units 1 and 2
Procedures for the assessment of levels of achievement in Units 1 and 2 are a matter for school decision.

Units 3 and 4
The Victorian Curriculum and Assessment Authority will supervise the assessment of all students undertaking Units 3 and 4. In the study of VCE Physical Education students' level of achievement will be determined by School-assessed Coursework and an end-of-year examination.

Percentage contributions to the study score in VCE Physical Education are as follows:
- Unit 3 School-assessed Coursework: 25 per cent
- Unit 4 School-assessed Coursework: 25 per cent
- End-of-year examination: 50 per cent.

PHYSICS

Scope of study
Physics seeks to understand and explain the physical world, both natural and constructed. It examines models and ideas used to make sense of the world and which are sometimes challenged as new knowledge develops.

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

An important feature of VCE Physics is the opportunity for students to undertake a range of inquiry tasks both collaboratively and independently. Inquiry methodologies can include laboratory experimentation, local and remote data logging, simulations, animations and literature reviews. Investigation in physics is diverse and may include: the design, building, testing and evaluation of a device; the investigation of the operation of a device; creating a solution to a scientific or technological problem; and the investigation of a physical phenomenon. Students pose questions, formulate hypotheses, collect and analyse data, evaluate methodologies and results, justify conclusions, make recommendations and communicate their findings.

As well as an increased understanding of scientific processes, students develop capacities that enable them to critically assess the strengths and limitations of science, respect evidence-based conclusions and gain an awareness of the ethical, social and political contexts of scientific endeavours.

Rationale
Physics is based on observations, experiments, measurements and mathematical analysis with the purpose of finding quantitative explanations for phenomena occurring from the subatomic scale through to the planets, solar systems and galaxies in the Universe. Whilst many scientific understandings in Physics have stood the test of time, many other areas continue to evolve. In undertaking this study, students develop their understanding of the role of careful and systematic experimentation, and modelling, in the development of theories and laws. They undertake practical activities and apply physics principles to explain and quantify both natural and constructed phenomena.

In VCE Physics students develop their inquiry, analytical and communication skills. They apply critical and creative thinking to analyse contemporary physics-related issues, and communicate their views from an informed position.

Structure
The study is made up of four units:
Unit 1: What ideas explain the physical world?
Unit 2: What do experiments reveal about the physical world?
Unit 3: How do fields explain motion and electricity?
Unit 4: How can two contradictory models explain both light and matter?
Each unit contains three areas of study.

Entry
There are no prerequisites for entry to 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. 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.

Unit 1: What Ideas Explain the Physical World?
In this unit students explore some of the fundamental ideas and models used by physicists in an attempt to understand and explain the world. They consider thermal concepts by investigating heat and assessing the impact of human use of energy on the environment.

Students evaluate common analogies used to explain electricity and investigate how electricity can be manipulated and utilised. They examine current scientifically accepted theories that explain how matter and energy have changed since the origins of the Universe.

Students undertake quantitative investigations involving at least one independent, continuous variable.

Unit 2: What Do Experiments Reveal About The Physical World?
This unit requires that students undertake a core study related to motion, one option from a choice of twelve options, and a student-designed investigation related to motion and/or one of the twelve options.

In this unit, students explore the power of experiments in developing models and theories. They make direct observations of physics phenomena and examine the ways in which phenomena that may not be directly observable can be explored including through indirect observations.

Students investigate the ways in which forces are involved both in moving objects and in keeping objects stationary.

They choose one of twelve options related to astrobiology, astrophysics, bioelectricity, biomechanics, electronics, flight, medical physics, nuclear energy, nuclear physics, optics, sound and sports science.

Students design and undertake investigations involving at least one independent, continuous variable. A student-designed practical investigation related to content drawn from Area of Study 1 and/or Area of Study 2 is undertaken in Area of Study 3.

Unit 3: How Do Fields Explain Motion And Electricity?
In this unit, students explore the importance of energy in explaining and describing the physical world. They examine the production of electricity and its delivery to homes. Students consider the field model as a construct that has enabled an understanding of why objects move when they are not apparently in contact with other objects.

They explore the interactions, effects and applications of gravitational, electric and magnetic fields including the design and operation of particle accelerators. Students use Newton's laws and Einstein's theories to investigate and describe motion.

Students design and undertake investigations involving at least two independent variables, with at least one of the independent variables being continuous. A student-designed practical investigation related to waves, fields or motion is undertaken either in Unit 3 or Unit 4, or across both Unit 3 and Unit 4. The findings of the investigation are presented in a scientific poster format.

Unit 4: How Can Two Contradictory Models Explain Both Light And Matter?
Light and matter – which initially seem to be quite different – have been observed as having similar properties. In this unit, students explore the use of wave and particle theories to model the properties of light and matter.

They examine how the concept of the wave is used to explain the nature of light and analyse its limitations in describing light behaviour. Students further investigate light by using a particle model to explain its behaviour. A wave model is also used to explain the behaviour of matter which enables students to consider the relationship between light and matter.

Students are challenged to think beyond the concepts experienced in everyday life to study the physical world from a new perspective.

Students design and undertake investigations involving at least two continuous independent variables. 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. The findings of the investigation are presented in a scientific poster format.

Assessment
Satisfactory completion
The award of satisfactory completion for a unit is based on a decision that the student has demonstrated achievement of the set of outcomes specified for the unit. This decision will be based on the teacher's assessment of the student's performance on assessment tasks designated for the unit.

Levels of achievement
Units 1 and 2
Procedures for the assessment of levels of achievement in Units 1 and 2 are a matter for school decision.

Units 3 and 4
The Victorian Curriculum and Assessment Authority will supervise the assessment of all students undertaking Units 3 and 4. In the study of VCE Physics the student's level of achievement will be determined by School-assessed Coursework as specified in the VCE Physics study design and external assessment.

Percentage contributions to the study score in VCE Physics are as follows:
- Unit 3 School-assessed Coursework: 21 per cent
- Unit 3 School-assessed Coursework: 19 per cent
- End-of-year examination: 60 per cent.

PRODUCT DESIGN AND TECHNOLOGY

Scope of Study

Product design is part of people's responses to changing needs to improve quality of life by designing and creating artefacts. Product design is enhanced through knowledge of social, technological, economic, historic, ethical, legal, environmental and cultural factors. These factors affect the aesthetics, form and function of products developed in the past and those yet to be developed. Central to VCE Product Design and Technology is the Product design process, which provides a structure for students to develop effective design practice. The design process involves identification of a real need that is then articulated in a design brief. The need is investigated and informed by research to aid the development of solutions that take the form of physical, three-dimensional functional products. Development of these solutions requires the application of technology and a variety of cognitive and physical skills, including creative design thinking, drawing and computer-aided design, testing processes and materials, planning, construction, fabrication and evaluation.

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.

The knowledge and use of resources is integral to product design. These resources include a range of materials, and the tools, equipment and machines needed to transform these materials in a safe manner into useful products. Increasingly, the importance of environmental sustainability is having an impact on product design and development. More sustainable approaches are therefore at the forefront throughout the product lifecycle.

Rationale

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. In recent history the use of resources to create an ever-increasing array of products has given designers an increased responsibility to think sustainably.

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.

VCE Product Design and Technology can provide a pathway to a range of related fields such as industrial, product, interior and exhibition design, engineering, and fashion, furniture, jewellery, textile and ceramic design at both professional and vocational levels. Moreover, 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 multi-disciplinary nature of modern workplaces.

Structure

The study is made up of four units:

Unit 1: Product re-design and sustainability

Unit 2: Collaborative design

Unit 3: Applying the product design process

Unit 4: Product development and evaluation

Each unit contains between two and four Areas of Study.

Entry
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. All VCE studies are benchmarked against comparable national and international curriculum.

Unit 1: Product Re-design and Sustainability
This unit focuses on the analysis, modification and improvement of a product design with consideration of the materials used and issues of sustainability. Finite resources and the proliferation of waste require sustainable product design thinking. Many products in use today have been redesigned to suit the changing needs and demands of users but with little consideration of their sustainability. Knowledge of material use and suitability for particular products is essential in product design.
Additionally, knowledge of the source, origin and processing of materials is central to sustainable practices. Students consider the use of materials from a sustainable viewpoint. Sustainable practices claimed to be used by designers are examined.
Area of Study 1 provides an introduction and structured approach towards the Product design process and Product design factors. Students learn about intellectual property (IP), its implications related to product design and the importance of acknowledging the IP rights of the original designer.
In Area of Study 2, students produce a re-designed product safely using tools, equipment, machines and materials, compare it with the original design and evaluate it against the needs and requirements outlined in their design brief. If appropriate, a prototype made of less expensive materials can be presented; however, the specific materials intended for the final product would need to be indicated. A prototype is expected to be of full scale and considered to be the final design of a product before production of multiples.

Unit 2: Collaborative Design
In this unit students work in teams to design and develop an item in a product range or contribute to the design, planning and production of a group product. They focus on factors including: human needs and wants; function, purpose and context for product design; aesthetics; materials and sustainability; and the impact of these factors on a design solution.
Teamwork encourages communication between students and mirrors professional design practice where designers often work within a multi-disciplinary team to develop solutions to design problems. Students also examine the use of ICT to facilitate teams that work collaboratively but are spread across the globe.
In this unit students are able to gain inspiration from an historical and/or a cultural design movement or style and its defining factors such as ideological or technological change, philosophy or aesthetics.
In Area of Study 1, students work both individually and as members of a small design team to address a problem, need or opportunity and consider the associated human-centred design factors. They design a product within a range, based on a theme, or a component of a group product. They research and refer to a chosen style or movement. In Area of Study 2 the product produced individually or collectively is evaluated.

Unit 3: Applying the Product Design Process
In this unit students are engaged in the design and development of a product that meets the needs and expectations of a client and/or an end-user, developed through a design process and influenced by a range of complex factors. These factors include the purpose, function and context of the product; human-centred design factors; innovation and creativity; visual, tactile and aesthetic factors; sustainability concerns; economic limitations; legal responsibilities; material characteristics and properties; and technology. Design and product development and manufacture occur in a range of settings. An industrial setting provides a marked contrast to that of a ‘one-off situation’ in a small ‘cottage’ industry or a school setting. Although a product design process may differ in complexity or order, it is central to all of these situations regardless of the scale or context. This unit examines different settings and takes students through the Product design process as they design for others.

In the initial stage of the Product design process, a design brief is prepared. It outlines the context or situation around the design problem and describes the needs and requirements in the form of constraints or considerations.
In Area of Study 1, students examine how a design brief is structured, how it addresses particular Product design factors and how evaluation criteria are developed from the constraints and considerations in the brief. They develop an understanding of techniques in using the design brief as a springboard to direct research and design activities.
In Area of Study 2, students examine how a range of factors, including new and emerging technologies, and international and Australian standards, influence the design and development of products within industrial manufacturing settings. They consider issues associated with obsolescence and sustainability models.
In Area of Study 3, students commence the application of the Product design process for a product design for a client and/or an end-user, including writing their own design brief which will be completed and evaluated in Unit 4.

Unit 4: Product development and evaluation
In this unit students learn that evaluations are made at various points of product design, development and production. In the role of designer, students judge the suitability and viability of design ideas and options referring to the design brief and evaluation criteria in collaboration with a client and/or an end-user. Comparisons between similar products help to judge the success of a product in relation to a range of Product design factors. The environmental, economic and social impact of products throughout their life cycle can be analysed and evaluated with reference to the Product design factors.
In Area of Study 1, students use comparative analysis and evaluation methods to make judgments about commercial product design and development.
In Area of Study 2, students continue to develop and safely manufacture the product designed in Unit 3, Outcome 3, using materials, tools, equipment and machines, and record and monitor the production processes and modifications to the production plan and product.
In Area of Study 3, students evaluate the effectiveness and efficiency of techniques they used and the quality of their product with reference to evaluation criteria and client and/or end-user feedback. Students make judgments about possible improvements. They produce an informative presentation to highlight the product's features to the client and/or an end-user and explain its care requirements.

Assessment
Satisfactory Completion
The award of satisfactory completion for a unit is based on a decision that the student has demonstrated achievement of the set of outcomes specified for the unit. This decision will be based on the teacher's assessment of the student's performance on assessment tasks designated for the unit.

Levels of Achievement
Units 1 and 2
Procedures for the assessment of levels of achievement in Units 1 and 2 are a matter for school decision.

Units 3 and 4
The Victorian Curriculum and Assessment Authority will supervise the assessment of all students undertaking Units 3 and 4. In the study of Product Design and Technology students' level of achievement will be determined by School-assessed Coursework, School-assessed Task and an End-of-year examination.

Percentage contributions to the study score in Product Design and Technology are as follows:
- School-assessed Coursework (Units 3 and 4) 20 percent
- School-assessed Task (Units 3 and 4) 50 percent
- End-of-year examination: 30 percent

PSYCHOLOGY

Scope of study
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 environment, individual differences and group dynamics, sensory perception and awareness, memory and learning, and mental health.

An important feature of VCE Psychology is the opportunity for students to undertake a range of inquiry tasks both collaboratively and independently. Inquiry methodologies can include laboratory experimentation, observational studies, self-reports, questionnaires, interviews, rating scales, simulations, animations, examination of case studies and literature reviews. Students pose questions, formulate research hypotheses, operationalise variables, collect and analyse data, evaluate methodologies and results, justify conclusions, make recommendations and communicate their findings.

As well as an increased understanding of scientific processes, students develop capacities that enable them to critically assess the strengths and limitations of science, respect evidence-based conclusions and gain an awareness of the ethical, social and political contexts of scientific endeavours.

Rationale
VCE Psychology provides students with a framework for exploring the complex interactions between biological, psychological and social factors that influence human thought, emotions and behaviour. In undertaking this study, students apply their learning to everyday situations including workplace and social relations. They gain insights into a range of psychological health issues in society.

Structure
The study is made up of four units:
Unit 1: How are behaviour and mental processes shaped?
Unit 2: How do external factors influence behaviour and mental processes?
Unit 3: How does experience affect behaviour and mental processes?
Unit 4: How is wellbeing developed and maintained?

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

Unit 1: How are Behaviour and Mental Processes Shaped?
In this unit students investigate the structure and functioning of the human brain and the role it plays in the overall functioning of the human nervous system. Students explore brain plasticity and the influence that brain damage may have on a person's psychological functioning.

They consider the complex nature of psychological development, including situations where psychological development may not occur as expected.

Unit 2: How Do External Factors Influence Behaviour and Metal Processes?
A person's thoughts, feelings and behaviours are influenced by a variety of biological, psychological and social factors. In this unit students investigate how perception of stimuli enables a person to interact with the world around them and how their perception of stimuli can be distorted.

They evaluate the role social cognition plays in a person's attitudes, perception of themselves and relationships with others. Students explore a variety of factors and contexts that can influence the behaviour of an individual and groups.

Unit 3: How Does Experience Affect Behaviour and Metal Processes?
The nervous system influences behaviour and the way people experience the world. In this unit students examine the functioning of the nervous system to explain how a person can interact with the world around them.

They explore how stress may affect a person's psychological functioning and consider the causes and management of stress. Students investigate how mechanisms of memory and learning lead to the acquisition of knowledge, the development of new capacities and changed behaviours.

They consider the limitations and fallibility of memory and how memory can be improved.

Unit 4: How Is Wellbeing Developed and Maintained?
Consciousness and mental health are two of many psychological constructs that can be explored by studying the relationship between the mind, brain and behaviour. In this unit, students examine the nature of consciousness and how changes in levels of consciousness can affect mental processes and behaviour.

They consider the role of sleep and the impact that sleep disturbances may have on a person's functioning. Students explore the concept of a mental health continuum and apply a biopsychosocial approach to analyse mental health and disorder.

They use specific phobia to illustrate how the development and management of a mental disorder can be considered as an interaction between biological, psychological and social factors.

Assessment
Satisfactory completion
The award of satisfactory completion for a unit is based on a decision that the student has demonstrated achievement of the set of outcomes specified for the unit. This decision will be based on the teacher's assessment of the student's performance on assessment tasks designated for the unit.

Levels of achievement
Units 1 and 2
Procedures for the assessment of levels of achievement in Units 1 and 2 are a matter for school decision.

Units 3 and 4
The Victorian Curriculum and Assessment Authority will supervise the assessment of all students undertaking Units 3 and 4. In the study of VCE Psychology the student's level of achievement will be determined by School-assessed Coursework as specified in the VCE Psychology study design and external assessment.

Percentage contributions to the study score in VCE Psychology are as follows:
- Unit 3 School-assessed Coursework: 16 per cent
- Unit 3 School-assessed Coursework: 24 per cent
- End-of-year examination: 60 per cent.

STUDIO ARTS

Rationale

The creative nature of visual art provides individuals with the opportunity for personal growth, the expression of ideas and a process for examining identity. The exhibition of visual art offers an insight into the diverse interpretations of life and its experience by artists. Engagement with visual art facilitates creative thinking and the development of new ideas, it also supports connection and exchange within communities and beyond.

VCE Studio Arts encourages and supports students to recognise their individual potential as art makers and presents a guided process to assist their understanding and development of artmaking. The study establishes effective art practices through the application of an individual design process to assist the student's production of a folio of artworks.

The theoretical component of this study is an important basis for studio practice as it offers students a model for inquiry that can support their artmaking practices. Students' research focuses on the visual analysis of artworks and investigates how artists have interpreted sources of inspiration and influences in their artmaking. Students examine how artists have used materials, techniques and processes to create aesthetic qualities. They study how artists have developed styles and explored their cultural identity in their artwork. Students use this knowledge to inform their own processes to support their artmaking.

The foundation for the individual design process is established in Units 1 and 2 where students develop an understanding of how to source artistic inspiration related to their individual interests. Through the study of artists from different cultures, students recognise the diversity of aesthetic qualities and examine a range of interpretations of ideas and themes. In practical application students identify elements of inspiration for the development of their own creative artworks and explore a wide variety of materials and techniques.

In Unit 3 the student uses an exploration proposal to define an area for the development of a visual design process that is based on their individual concepts and ideas. The exploration proposal underpins the student's working process and is used as a reference for the development and reflection of the design process. This enables the student to establish an understanding about how to generate a range of potential directions for the production of possible future artworks.

In Unit 4 students develop a creative folio of finished artworks based on selected potential directions. Students evaluate the use of materials, techniques and aesthetics in relation to the successful communication of their ideas in their finished artworks.

Structure

The study is made up of four units:

Unit 1: Artistic inspiration and techniques
Unit 2: Design exploration and concepts
Unit 3: Studio production and professional art practices
Unit 4: Studio production and art industry contexts

Each unit contains between two and four areas of study.

Entry

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: Artistic Inspiration and Techniques

This unit focuses on using sources of inspiration and individual ideas as the basis for developing artworks and exploring a wide range of materials and techniques as tools for communicating ideas, observations and experiences through artmaking.

Students also explore and research the ways in which artists from different times and cultures have interpreted and expressed ideas, sourced inspiration and used materials and techniques in the production of artworks.

Unit 2: Design Exploration and Concepts
This unit focuses on students establishing and using a design process to produce artworks. The design process includes the formulation and use of an individual approach to locating sources of inspiration, experimentation with materials and techniques, and the development of aesthetic qualities, directions and solutions prior to the production of artworks. Students also develop skills in the visual analysis of artworks. Artworks made by artists from different times and cultures are analysed to understand the artists' ideas and how they have created aesthetic qualities and identifiable styles.

Unit 3: Studio Production and Professional Art Practices
This unit focuses on the implementation of an individual design process leading to the production of a range of potential directions and solutions. Students develop and use an exploration proposal to define an area of creative exploration. They plan and apply a design process to explore and develop their individual ideas. Analysis of these explorations and the development of the potential directions is an intrinsic part of the design process to support the making of finished artworks in Unit 4. For this study, the exploration proposal supports the student to identify a direction for their design process. The design process is individually determined by the student. It records trialling, experimenting, analysing and evaluating the extent to which their art practices successfully communicate their aims and ideas. From this process students can develop directions for the development of finished artworks in Unit 4. The study of artists and their work practices and processes may provide inspiration for students' own approaches to artmaking. Students investigate and analyse the response of artists to a wide range of stimuli, and examine their use of materials and techniques. They explore professional art practices of artists in relation to particular artworks and art form/s and identify the development of styles in artworks. Throughout their study of art processes, students also consider the issues that may arise from the use of other artists' work in the making of new artworks. Students are expected to visit at least two different exhibition spaces in their current year of study.

Unit 4: Studio Production and Art Industry Contexts
This unit focuses on the production of a cohesive folio of finished artworks. To support the creation of the folio, students present visual and written documentation explaining how selected potential directions generated in Unit 3 were used to produce the cohesive folio of finished artworks. These artworks should reflect the skilful application of materials and techniques, and the resolution of ideas and aesthetic qualities. This unit also investigates aspects of artists' involvement in the art industry, focusing on a variety of exhibition spaces and the methods and considerations involved in the preparation, presentation and conservation of artworks. Students examine a range of environments for the presentation of artworks exhibited in contemporary settings. Students are expected to visit at least two different exhibition spaces in their current year of study.

Assessment
Satisfactory Completion
The award of satisfactory completion for a unit is based on a decision that the student has demonstrated achievement of the set of outcomes specified for the unit. This decision will be based on the teacher's assessment of the student's performance on assessment tasks designated for the unit.

Levels of Achievement
Units 1 and 2
Procedures for the assessment of levels of achievement in Units 1 and 2 are a matter for school decision.
Units 3 and 4
The Victorian Curriculum and Assessment Authority will supervise the assessment of all students undertaking Units 3 and 4. In the study of VCE Studio Arts students' level of achievement will be determined by School-assessed Tasks and an end-of-year examination.
Percentage contributions to the study score in VCE Studio Arts are as follows:
• Unit 3 School-assessed Task: 33 per cent
• Unit 4 School-assessed Task: 33 per cent
• End-of-year examination: 34 per cent.