VCE HANDBOOK 2016-17

A GUIDE FOR
YEAR 10
STUDENTS

IN VCE COURSE SELECTION
This Handbook is the first of two VCE at Mac.Rob booklets to be distributed to current Year 10 students and their parents. It contains information on the courses to be offered at this school and descriptions of each of the VCE studies.

A second booklet, the VCE Student Guide will be distributed to all Year 11 students at the start of 2016. The VCE Student Guide contains information useful to students once their VCE course has begun.

**Year 10 Co-ordinators**

Senior School:

Mr Chris Muir & Ms Julia Trenchard-Smith

**Year 11 Co-ordinators**

Mr Simon Maaser & Mr David Page

**Year 12 Co-ordinators**

Ms Anne Tinney & Ms Michelle Dean

**Careers Counsellor & VET/VCAL Co-ordinator**

Ms Irene Serpless & Ms Susy Puszka

**VCE/VASS Co-ordinator**

Ms Barbara Chandler (VCE administrative procedures, including external enrolments)

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**Important dates 2016-2017**

<table>
<thead>
<tr>
<th>Course Change Opportunity</th>
<th>Date</th>
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</thead>
<tbody>
<tr>
<td>1st</td>
<td>Friday 23 October, 2015</td>
</tr>
<tr>
<td>2nd</td>
<td>Tuesday 1 December, 2015</td>
</tr>
<tr>
<td>3rd</td>
<td>Day, Term 1, 2016</td>
</tr>
<tr>
<td>4th</td>
<td>June 2016, for Semester 2</td>
</tr>
</tbody>
</table>
Introduction

Welcome to the VCE! This Handbook is to help you understand the Victorian Certificate of Education as it is taught at Mac.Rob – that is, the course that you will follow in Years 11 and 12. It will also guide you in choosing a program that will prepare you for employment, or for further education and training at a university or TAFE.

The handbook is made up of two sections:

Section 1 The VCE Program at Mac.Rob
Section 2 Descriptions of VCE Studies currently offered at Mac.Rob

In addition to this Handbook, students will receive a folder containing other important information:

• Choice! VCE Studies and the ATAR in 2016
  This provides a snapshot of the tertiary education system for current Year 10 students, explains the terms you need to be familiar with and debunks some of the myths commonly associated with choosing studies by using real life examples.

• Where To Now? – a guide to the VCE, VCAL and Apprenticeships and Traineeships for 2016
  This guide is published by the VCAA.

• 2016 VET Handbook
  This handbook outlines the Vocational Education and Training options available to Mac.Rob students next year.

• Tertiary Entry 2018
  A commercially published version of the university and TAFE entrance requirements for 2018 - the year in which most students will begin tertiary study.
  This is prepared by VTAC, and is correctly known as VICTER 2018 and is available on the VTAC website www.vtac.edu.au.

Make sure you keep your folder – it will be important at the end of next year for selecting your Year 12 course.

Section 1 - The VCE Program At Mac.Rob

The VCE is mostly studied over two years.

However, at Mac.Rob Year 10 students may have studied one or more of the following: a community LOTE externally in Year 9 and/or Year 10, or one Year 10 VCE Elective unit, Music Performance (two units) or Mathematical Methods (two units) within the Accelerated Mathematics program, or a VET course at Units 1/2 level.

How do you submit your course, and when?

Students will submit their course selection for 2016 online, but will also submit a hardcopy selection form to the Senior School Office. The hardcopy course form asks you to provide extra information such as your ideas about possible careers beyond school. Closer to this time, we will provide a guide to entering your online selection.

What if you change your mind?

You can request limited changes for your Year 11 course at these times:

  1. Before the VCE Orientation Program
  2. At the end of the VCE Orientation Program
  3. Day 1 of Term 1, 2016
  4. In June 2016, for Semester 2

In each case, there will be limitations caused by timetable, staffing and availability of space in classes, so it is important that you consider your course very carefully as subject selections this year.

For Year 12, 2017: you may make major alterations to your plans – Year 12 course selection will be in August 2016.
Notes:
Promotion from Year 10 to Senior School

Decisions about a student's readiness to proceed to the VCE are based upon:

- the number of subjects satisfactorily completed in Year 10
- personal factors such as attitude to study, special strengths, regularity of attendance and personal difficulties which may have impacted on progress
- organisational skills: for example, the ability to complete set tasks and meet deadlines.

Usually, students must satisfactorily complete at least six Year 10 subjects (in which all subjects except Music Core count equally). 'Satisfactory completion' means at least an “E” grade in each of the Assessment Tasks for a VCE subject in Year 10, and at least L in each VELS task.

Where a student doesn’t have six such subjects, the Principal (in consultation with the student and her parents/guardians) will make a decision about promotion. The Directors of Senior and Middle Schools, the student’s Year 10 Co-ordinator, Careers Counsellor, Student Welfare Co-ordinator and class teachers may also take part in this process.

About the VCE

How is the VCE organised?

A VCE study is made up of units, each unit lasting one semester. Most studies offer four units, but you don’t have to take all four units.

There are two levels of units within the VCE:

- Units 1 and 2, which are usually taken in the first year of VCE. Most students take both units in a study, but it is possible in Year 11 (if the timetable allows) to take only one unit of a particular study. All units which are part of the Mac.Rob Year 10 course are either Units 1 or 2 level.
- Units 3 and 4, which are more advanced, are mostly taken in the final year of VCE. Units 3 and 4 must be studied as a sequence - that is, if you take Unit 3 of any study, you must take Unit 4 also.

Students at Mac.Rob will normally be expected to take 20 or 22 units in their Year 11 and 12 program at this campus. This is in addition to any units studied while in Year 10. This means:

- 12 units (normally, 6 subjects) at this campus while in Year 11, and
- either 8 or 10 units (either 4, or 5, subjects) at this campus while in Year 12

Special requirements for VCE at Mac.Rob

- studying either one, or two, Unit 3/4 studies while in Year 11 is allowed only if a student meets selection criteria. A student will not be allowed to take more than two Unit 3/4 studies in her total course (external studies are included in the ‘two’).
- students taking two Unit 3/4 studies in Year 11 are expected to choose only four Unit 3/4 studies in Year 12, unless there are exceptional circumstances.
- students taking either no Unit 3/4 studies in Year 11, OR one Unit 3/4 study are expected to choose a maximum of 5 Unit 3/4 studies in Year 12. A minimum Year 12 Mac.Rob course is 4 subjects. Students should not take 6 Unit 3/4 studies in Year12.
- Students are not permitted to repeat VCE subjects. If a subject was previously completed at a different school or education provider (such as the VSL or a Saturday LOTE school), then Mac.Rob considers this subject to have been completed and, as the ‘home school’, will not endorse the application for enrolment the following year.

What must you do to graduate with your VCE?

The Victorian Curriculum and Assessment Authority (VCAA) sets these requirements.

You must satisfactorily complete at least 16 units. Regardless of how many you do altogether, you must also satisfactorily complete:
• at least 3 units of the English Group
  o English Units 1 to 4
  o English as a Second Language Units 3 and 4
  o English Language Units 1 to 4
  o Literature Units 1 to 4
Of this minimum 3 units, at least one must be from Units 3 and 4.
(Please note: to obtain an ATAR, you must have a Unit 3/4 sequence from this group)
  o three sequences of Units 3 and 4 studies in addition to meeting the English requirement. These can be from VCE studies and/or VCE VET programs.

Studies and units
A full list of all VCE studies available in Victoria is found in the VCAA’s booklet Where to now? or on the VCAA’s website www.vcaa.vic.edu.au. A list of studies available at Mac.Rob is found on page 14 of this booklet.

What is VET?
VET stands for Vocational Education and Training.
In addition to the VCE studies listed on page 14, a range of vocational studies have also been offered within the school’s regional cluster and have proved to be very popular with Mac.Rob students. A number of Year 10 students are already enrolled in VET courses - these students may move on to Units 3 and 4 in 2016 if they wish. Students beginning a VET program in Year 11 must enroll in Units 1 and 2.
Your folder of VCE information contains a VET Handbook, with details of studies offered within our cluster of schools.
A VET subject counts as one of your school-based subjects, even though you may study it off-campus.

What is VCAL?
VCAL stands for Victorian Certificate of Applied Learning
VCAL is an alternative to the usual VCE if you are interested in a more employment-related course.
The key features of VCAL:
  o It involves applied learning – a hands-on approach
  o The exact balance between VCE Studies and VCAL studies will be negotiated on an individual basis
  o you can undertake a School-Based Apprenticeship or Traineeship – involving 15 hours of paid work per week - in fields such as these:
    Retail
    Hospitality
    Sports Administration
    (there are more!)
    Or
    undertake a VET study
your course involves fewer VCE studies BUT it is still possible to graduate with a conventional VCE Certificate and obtain an ATAR.

All questions about VET and VCAL studies should be addressed to Ms Trenchard-Smith who are is VET & VCAL Co-ordinator
What should you consider in choosing your 2016-17 course?

The range of studies listed on page 14 is very wide and we expect that there will be at least one class in each of these subjects in 2016-2017. However, if the number of students choosing a particular subject is too small, then some changes may be made to the list.

Mac.Rob, the VCAA and VTAC are unanimous in advising you to choose subjects that:

• you enjoy and interest you;
• you are good at;
• reflect what you are interested in studying at tertiary level, and will develop the skills that will help you in those studies;
• help provide you with more career options if you are undecided.

It is not advisable at this stage to say: “I know what subjects I’m doing next year”.

Instead, think of:

1. **A broad course.** The flexibility of the VCE encourages all students to take a variety of studies, while providing them with the ability to specialise in a particular area. You may decide to specialise in Music studies or Language studies or Science studies, but it is very important that you also be able to prepare for a wide variety of career options. *Don’t choose subjects that may limit or narrow your choices. For instance, planning on just one or two possible careers is not recommended.* Remember that most subjects develop skills rather than simply a body of knowledge. These skills help you to develop qualities which are important in higher level study - and for this reason, it’s important that you consider many subject options.

2. **Interest.** Choose studies that you will enjoy. Most students perform better in these subjects. Beware of choosing subjects because you have heard about the impact of scaling in calculating the ATAR, and NEVER choose subjects simply because they are ‘scaled up’, or because well-meaning people advise you to do so. VTAC’s *Choice!* makes it very clear that such a practice is unwise and may actually disadvantage you when you choose studies in which you are not strong.

3. **Be realistic!** If you find certain subjects difficult and have trouble grasping and understanding topics in Year 10, remember that the subject will become more complex at Units 1 and 2 level, and even more so at Units 3 and 4 level, not less so! Hard work alone cannot guarantee success in each area. You need to take your abilities into account. Semester 1 reports will have provided good information for you – read carefully.

4. **Research!** Find out about all the various studies - read all of the unit descriptions, and talk to teachers about them. Try also to talk to current VCE students. Make use of course counsellors, such as Year Level Co-ordinators, Ms Serpless, Ms Puszka & Ms Trenchard-Smith (Careers Counsellors and the VET/VCAL Co-ordinator) and Mr Sharp.

5. **Do you need 1/2 as background studies for Units 3/4?** It is possible to enter most VCE studies at Unit 3/4 level without having previously studied Units 1 or 2 – see page 12). Some subjects in our curriculum do not have a Unit 1/2 equivalent. In some cases, however, preparatory units are recommended if you are planning to take the Units 3 and 4 that follow. Also, in some, background definitely IS required (e.g. Maths, LOTE). Discuss this with the course counsellors if it affects your choice or if you are unsure.

6. **Consider your time management skills.** Think carefully before choosing more than two subjects in the Arts category within your course (e.g. Drama, Music Performance, Art/Studio Arts, Visual Communication and Design, Media) – these all have intense periods of work/preparation for assessment. You will be fine if you are well organised and can plan things ahead.

7. **This is your choice!** The choice of subjects you make may ultimately determine your career, and how you will spend a large proportion of your life. Make sure you are aiming for a future that will satisfy you, rather than friends or family, however well-meaning they may be.

8. **Tertiary Prerequisites.** Be aware of VCE prerequisites for tertiary courses, listed in Tertiary Entry 2018. These prerequisites will apply to tertiary and TAFE courses in 2018. Do not rely on other years’ prerequisites (e.g. for 2013, 2014 or 2015) – these are not ‘your year’! Also, be wary of advice about
prerequisites from past students or friends and relatives – things may have changed! Check your 2018
information carefully, and ask Ms Serpless or Ms Puszka if in doubt.

9. Thinking of studying in the USA? While the VCE is recognized as a secondary qualification for entry to
American colleges, you will need to make sure you study the following subjects:

- English
- Maths
- Natural / Physical Science (Biology, Chemistry, Physics)
- Social Sciences (History, Geography, Economics, Psychology)
- Foreign Language
- Non-doctrinal religion
- Philosophy

It is advised that candidates avoid too many specialized subjects such as Accounting, Business
Management, Legal Studies, Media, Visual Communication Design, Information Systems, PE etc.

Notes:
Should I include Unit 3/4 studies in my 2016 Year 11 course?

It has become very common for Year 11 students to consider including either one or two Unit 3/4 studies in their Year 11 course, along with four or five Unit 1/2 studies at school (as relevant).

Some important things to consider:

- Unit 3/4 studies significantly increase your workload, so you should think very carefully before including this level of study in your course.
- Remember also that only six Unit 3/4 studies can contribute to the student’s ATAR at the end of Year 12. So – there are few good reasons for doing more than 6 Unit 3/4 studies in your VCE.

Sometimes students and parents think it would be a good idea to do as many as possible in order to maximise the ATAR. Our experience at Mac.Rob is that there is no statistical benefit, and that by taking on a huge workload, some students actually disadvantage themselves.

What are the positives and negatives of taking a 3/4 study in Year 11?

- More challenging work - many students enjoy the extension of their skills
- practice in workload management and study skills
- It may reduce your Year 12 workload - a maximum of six Unit 3/4 studies contribute to your ATAR, and doing one (or perhaps two) in Year 11 enables you to study four in Year 12.

However.........

- the work is much harder than Year 10 and Year 11 work
- some students are not yet well equipped to manage study at this level
- some students concentrate too much on the Unit 3/4 study, and by neglecting their Unit 1/2 studies, do not prepare well enough for studies which follow on in Year 12. This is a serious problem for some students, and does disadvantage some.

Mac.Rob sets selection criteria in order to take a Unit 3/4 study in Year 11

These criteria are quite rigorous, and are designed to make sure students are equipped to meet the requirements of Year 12-level study.

Academic performance

Year 10 Semester reports contain a mix of VELS reports and VCE unit reports. The measures of performance used in these reports differ (VH to L in VELS reports; A+ to UG in VCE reports). The criteria for Unit 3/4 selection reflect these differences. They are designed to make sure that students are able to balance the challenges of Unit 3/4 with the importance of doing well in Unit 1/2 studies.

<table>
<thead>
<tr>
<th>For one Unit 3/4 study</th>
<th>Students must average between M and H for their combined VELS-assessed subjects and B for their combined VCE Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>For two Unit 3/4 studies</td>
<td>Students must average between H and VH for VELS-assessed subjects and B+ for their combined VCE units. Permission to study two 3/4’s is not a given. Usually, about 30% of students qualify.</td>
</tr>
</tbody>
</table>
These averages mean that we expect a Year 10 student to be working hard in all subjects – not just in a few that she expects to continue on with in VCE – but at the same time it is possible for a student to be stronger in some subjects than others.

A measure of academic performance will be based first of all on Semester 1 results (because they are the only indicators of performance available at the time of course selection). However, Semester 2 results will also be considered for all students whose work did not meet the criteria in Semester 1, whilst ensuring students who did meet the criteria continue to do so.

Mr Sharp will consult with Year 10 Year-Level Co-ordinators about student performance at the end of both semesters 1 and 2. Staff currently teaching Year 10 students will also provide advice to Mr Sharp on students’ course selections for VCE.

In addition to academic performance, other factors such as organisational skills, work habits, punctuality, attendance and involvement in the wider school community (such as extra-curricular activities) are taken into account when allowing students to enroll in Unit 3/4 subjects in Year 11. Student wellbeing is the school’s main priority; therefore if it is judged that enrolment in a Unit 3/4 subject may adversely impact a student, the school reserves the right to not allow entry to that subject.

Note that permission given in Semester 2 to access a Unit 3/4 subject in Semester 2 depends upon there being space available in that particular class at that time. Such space cannot be guaranteed, as classes are formulated on the basis of information available at the end of Term 3.

**Approach to work and study skills**

This is equally important.

A student should demonstrate very good study and time management skills across her whole course – not just in subjects she likes or is good at. Late or non-submission of work is a strong indicator of poor skills and habits. So once again, check the ‘messages’ in your Semester One reports.

**What should you do if you think, at this stage, that you don’t meet these criteria?**

if you wish to take a Unit 3/4 study, you may list the subject in your course selection

but...

if you do not meet the required standard of work in Semester 2, at that point you must select another Unit 1/2 subject. Please note that your choice late in the year may be quite limited, so it might be in your interests to select a Unit 1/2 subject rather than a Unit 3/4 subject, if you know that your work most likely not meet the criteria.

In some cases, decisions may be made during mid-later December. This is particularly so where a student is relying on Semester 2 reports to demonstrate improvement in her work. These are not available until the end of Term 4.

So... work hard to improve in Semester 2!

**Can I take a study at Units 3/4 level without having studied Units 1/2?**

You might consider this when selecting subjects for 2016, and again when selecting your course for Year 12.

In most studies, the answer is yes.

- The majority of VCE Unit 3/4 studies have no recommended preparation – so often you do not need to take a study at Unit 1/2 level first.
- However, in some studies, the VCAA recommends that you take certain units before Unit 3 and 4. These recommendations are listed below:

<table>
<thead>
<tr>
<th>Study</th>
<th>Recommended preparation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accounting 3/4</td>
<td>Accounting 2</td>
</tr>
<tr>
<td>Dance 3/4</td>
<td>Dance 1/2</td>
</tr>
</tbody>
</table>
Music Performance (Solo) 3/4  Music Performance 1/2
Biology 3/4  Biology 1
Chemistry 3/4  Chemistry 1/2
Physics 3/4  Physics 2

It’s also a requirement that in order to take Specialist Maths 3/4, you must have either already studied Maths Methods 3/4, or be taking it at the same time.

Please note that Mac.Rob does not allow students to take Specialist Maths while in Year 11.

However, despite the VCAA’s recommended preparation, you should remember that many students at Mac.Rob have taken Units 3 and 4 in most studies (including some which do have a recommended preparation) with no previous Unit 1 or 2 units in either Years 10 or 11.

These subjects include:

*Accounting, Biology, Drama, Economics, English, English Language, Environmental Science, Geography, Health and Human Development, Histories, Global Politics, Literature, Legal Studies, Media, Music Performance (Solo), Philosophy, Physical Education, Psychology, and Visual Communication Design.*

In some studies, it is important to have strong skills already established before you attempt a Unit 3/4 level. You should discuss this with teachers of those subjects.

**Will you be disadvantaged by not studying a VCE subject as an elective in Year 10?**

No. Students chose such subjects on the basis of interest only.

**Does taking a VCE elective in Year 10 provide an advantage in meeting the criteria for Unit 3/4 studies?**

No. Good performance across your whole course is the important thing.

**What if you have studied Mathematical Methods Units 1 & 2 in Year 10?**

(This study is offered to Year 10 students as part of the school’s Accelerated Mathematics program).

Two principles are relevant in considering Mathematical Methods Units 3 & 4 in Year 11, 2016:

- The criteria which apply to any student considering a Unit 3/4 study apply here also.
- Mac.Rob’s Maths Faculty will supplement this by giving Accelerated Maths students specific guidelines on the appropriateness of considering Maths Methods Units 3 and 4 in their Year 11 year.

You should refer also to the more detailed advice in the Mathematics Studies section of this handbook.

**Can I study external VCE units?**

Yes! Provided that the subject is NOT offered at Mac.Rob.

Please keep in mind that if a subject is offered at Mac.Rob, you are expected to take that subject here at school.

Students gain credit for any VCE studies that are satisfactorily completed at an approved VCE Provider. Many of our students have already undertaken the study of a VCE Language Other Than English (LOTE) at weekend schools, and many will continue with that study next year. A small number of students have taken other VCE Units that are not offered at this school (for example: Dance, Theatre Studies).

Students who choose to include their external study within their program must study at an approved VCE provider. Include the details of this subject during the Mac.Rob subject selection period online. You will also need to obtain a copy of the ‘Assessing School Enrolment Notification’ form (see right for an example) from your external study provider. This form must be brought to the VCE Co-ordinator at the start of the school year in order for enrolment to be confirmed.
These providers may be Victorian School of Languages (VSL) schools, independent LOTE schools or TAFE providers. If you think this may apply to you, please see the VCE Co-ordinator Ms Chandler, who co-ordinates external enrolments.

**Students will be required to attend MGHS in a full time capacity** (normally 6 studies - 12 units - in Year 11, and at least 4 studies - 8 units - in Year 12). For all students, an external study at evening or weekend school will be an addition to their full course here at MGHS.

VET studies may be studied at another campus, but as you are enrolled in these studies within the cluster of schools to which Mac.Rob belongs, these are considered to be internal studies.

**Plan your course for Year 12 carefully IF you are considering two Unit 3/4 studies in Year 11. You must take 4 subjects in Year 12, and we will expect all four to be at Mac.Rob.**

**Studies at university level while in Year 12**

These subjects are called University Extension or Enhancement subjects. They enable students to add a first year university subject to their normal VCE (Year 12 only) course, and are available to exceptional students on the Principal’s recommendation.

As of 2012, they have contributed to the ATAR as an increment – 10% of the average of the primary score subjects. This is very different to the system in place in previous years, so you should not be misled by advice from students who have taken a subject in the past.

You will be required to take four Unit 3/4 studies at Mac.Rob during Year 12, so a university study will be additional to that minimum course.

More information will be given to eligible students at the end of Year 11 (2016). At this stage you should not necessarily plan on taking a University study in 2017, even if you are very interested in the idea.

University studies are not available for students while in Year 11.

**Other sources of information on courses:**

The Careers Room in K2.01 is open each day, including lunchtime and recess. Drop in if you have any questions or would like to use the many resources available.

- You may also want to make an appointment to see Ms Serpless or Ms Puszka for an individual consultation during class time.
- The Careers Newsletter that you are emailed each week contains information on activities both at school, such as lunchtime guest speakers or careers related excursions, as well as outside school, such as university information sessions and open days.
- Ms Puszka is available to assist you in organizing a Work Experience placement during term holiday periods or in the designated week in December. Make sure you utilise this opportunity to investigate a career of your choosing.
- Use the online exploration section of your Morrisby Report to further investigate suggested and associated careers.
- Go to [http://www.macrobcareers.com](http://www.macrobcareers.com), a site which will provide you with many quick links to further information.

**Notes:**
<table>
<thead>
<tr>
<th>STUDY GROUP</th>
<th>STUDY</th>
<th>UNITS 1/2</th>
<th>UNITS 3/4</th>
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<tbody>
<tr>
<td><strong>ENGLISH</strong></td>
<td>English</td>
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<td>✓</td>
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<tr>
<td></td>
<td>English as an Additional Language</td>
<td>No VCAA units</td>
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<tr>
<td></td>
<td>English Language</td>
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<td>✓</td>
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<td></td>
<td>Literature</td>
<td>✓</td>
<td>✓</td>
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<tr>
<td><strong>HEALTH SCIENCE</strong></td>
<td>Health and Human Development</td>
<td>✓</td>
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<td>Physical Education</td>
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<td><strong>HUMANITIES &amp; ARTS</strong></td>
<td>Accounting</td>
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<td>Art</td>
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<td>Drama</td>
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<td>Economics</td>
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<td>Extended Investigation</td>
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<td>Geography</td>
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<td>Health and Human Development</td>
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<td>History: Revolutions</td>
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<td>History: People and Power Unit 1 &amp; 20th Century Unit 2</td>
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<td>No Unit 3/4 equivalent</td>
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<td>Global Politics</td>
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<td>LOTE: Indonesian (Sec. Lang)</td>
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<td>LOTE: Japanese (Sec. Lang.)</td>
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<td>Media</td>
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<td></td>
<td>Theatre Studies</td>
<td>✓</td>
<td>Not offered in 2016</td>
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<td>Visual Communication Design</td>
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<td><strong>SCIENCES</strong></td>
<td>Biology</td>
<td>✓</td>
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<td>Chemistry</td>
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<td></td>
<td>Environmental Science</td>
<td>Not offered in 2016</td>
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<td>Physics</td>
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<td>Psychology</td>
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<tr>
<td><strong>MATHS</strong></td>
<td>Mathematics: Further</td>
<td>1/2 GMF is best prep.</td>
<td>✓</td>
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<td>Mathematics: General (please check the Maths guidelines carefully; note two strands of this subject: GMS and GMF)</td>
<td>✓</td>
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<td></td>
<td>Mathematics: Methods</td>
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<td></td>
<td>Mathematics: Specialist</td>
<td>1/2 GMS is required</td>
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SECTION 2 - UNIT DESCRIPTIONS FOR VCE STUDIES

ACCOUNTING

Unit 1: Establishing and operating a service business
Areas of study:
1. Going into business.
   Describe the resources required and explain and discuss the knowledge and skills necessary to set up a small business.
2. Recording financial data and reporting accounting information.
   Identify and record the financial data and report and explain accounting information for a sole proprietor of a service business.

Unit 2: Accounting for a trading business
Areas of study:
1. Recording financial data and reporting accounting information
   Record financial data and report accounting information for a sole trader.
2. ICT in accounting.
   Record financial data and report accounting information using a commercial accounting software package for a single activity sole trader, and discuss the use of ICT in the accounting process.
   Select and use financial and non-financial information to evaluate the performance of a business and suggest strategies that may improve business performance.

Unit 3: Recording and reporting for a trading business (double entry)
Areas of study:
1. Recording of financial data.
   Record financial data using a double entry system for a single activity sole trader, and explain selected aspects of this accounting system.
2. Balance day adjustments and reporting and interpreting of accounting information.
   Record balance day adjustments and prepare and interpret accounting reports.

Unit 4: Control and analysis of business performance
Areas of study:
1. Extension of recording and reporting
   Record financial data using double entry accounting and report accounting information using an accrual based system for a single activity sole trader, and explain selected aspects of this accounting system.
2. Financial planning and decision making
   Prepare budgets and variance reports, evaluate the performance of a business using financial and non-financial information and suggest strategies to improve the profitability and liquidity of the business.

BIOLOGY

Biology is the study of life. It helps us to understand the world we live in, how our bodies work and how living things interact. From the study of the smallest molecules inside our cells, to the study of complex multicellular organisms in an ecosystem, the study of Biology helps us to understand the observable phenomenon of the world. Together with the other sciences, such as physics and chemistry, biology gives students an understanding of how new medicines are developed and new materials developed.

Throughout all four units of biology students are expected to develop key skills in scientific investigation by planning, carrying out, and reporting on practical investigations (students should be aware that this may include compulsory dissection work). They should also become adept at applying theory to new contexts and use these skills to analyse scientific information presented in the public domain. The study of biology prepares students for continuing studies in biosciences and medical sciences.

Unit 1: Unity and Diversity
In this unit students are introduced to some of the challenges to an organism in sustaining life. Students examine
the cell as the structural and functional unit of life, from the single celled to the multicellular organism, and the requirements for sustaining cellular processes in terms of inputs and outputs. They analyse types of adaptations that enhance the organism’s survival in a particular environment and consider the role homeostatic mechanisms play in maintaining the internal environment. Students investigate how a diverse group of organisms form a living interconnected community that is adapted to, and utilises, the abiotic resources of its habitat. The role of a keystone species in maintaining the structure of an ecosystem is explored. Students consider how the planet’s biodiversity is classified and the factors that affect the growth of a population.

Unit 2: Organisms and Their Environment
In this unit students focus on cell reproduction and the transmission of biological information from generation to generation. Students learn that all cells are derived from pre-existing cells through the cell cycle. They examine the process of DNA replication and compare cell division in both prokaryotic and eukaryotic organisms. Students explore the mechanisms of asexual and sexual reproductive strategies, and consider the advantages and disadvantages of these two types of reproduction. The role of stem cells in the differentiation, growth, repair and replacement of cells in humans is examined, and their potential use in medical therapies is considered.

Students use chromosome theory and terminology from classical genetics to explain the inheritance of characteristics, analyse patterns of inheritance, interpret pedigree charts and predict outcomes of genetic crosses. They explore the relationship between genes, the environment and the regulation of genes in giving rise to phenotypes. They consider the role of genetic knowledge in decision making about the inheritance of autosomal dominant, autosomal recessive and sex-linked genetic conditions. In this context the uses of genetic screening and its social and ethical issues are examined.

Unit 3: Signatures of Life
This unit focuses on the complex molecules that make up life, and how they interact to facilitate complex biochemical processes and responses in the whole organisms. This includes detailed study of the human immune system, how we recognise foreign cells in our system, and how we respond to the challenges our bodies face on a day-to-day basis. The application of this study of molecules to develop medicines targeted to interfere with a specific biochemical pathway gives students insight into the forefront of biomedical sciences.

Unit 4: Continuity and Change
Our genes make us who we are, controlling the formation of our bodies and our ability to respond to the natural world. In this unit students examine the molecule DNA in depth and how it is able to exert its effect upon every living thing. We also consider inheritance of characteristics and the importance of inheritance in relation to variation in the natural world, genetic disorders and evolution. By looking at the interaction of genetics and environment students consider the basis for change over time and the formation of new species. As our understanding of DNA develops so does our ability to manipulate it, student look at some of the practical implications of these technologies and the ethical issues it raises for our society.

CHEMISTRY
Chemistry is a key science in explaining the workings of our universe through an understanding of the properties and interaction of substances that make up matter. Most processes, from the formation of molecules in outer space to the complex biological interactions occurring in cells, can be described by chemical theories. Although there are no sharp boundaries between sciences such as chemistry, physics and biology, chemistry is used to explain natural phenomena at the molecular level, as well as create new materials such as medicines and polymers.

The four underpinning concepts of chemistry that ‘spiral’ through the entire Units 1-4 course, and which students will come back to repeatedly, are: Structure and bonding, Reactions, Energy and Skills that chemists use. In each Unit, students are also required to demonstrate skills at a progressively higher level as their complexity of knowledge increases.

It is hoped that all Chemistry students become more informed, responsible decision-making citizens, able to use chemical knowledge and scientific arguments in their everyday lives and to evaluate and debate important contemporary issues such as the future of our environment and its management.
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 of a range of materials from metals and salts to polymers and nanomaterials. Using their knowledge of elements and atomic structure students explore and explain the relationships between properties, structure and bonding forces within and between particles that vary in size from the visible, through nanoparticles, to molecules and atoms.

Students examine the modification of metals, assess the factors that affect the formation of ionic crystals and investigate a range of non-metallic substances from molecules to polymers and giant lattices and relate their structures to specific applications.

Students are introduced to quantitative concepts in chemistry including the mole concept. They apply their knowledge to determine the relative masses of elements and the composition of substances. Throughout the unit students use chemistry terminology including symbols, formulas, chemical nomenclature and equations to represent and explain observations and data from experiments, and to discuss chemical phenomena.

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 polar nature of a water molecule and the intermolecular forces between water molecules. They explore the relationship between these bonding forces and the physical and chemical properties of water. In this context students investigate solubility, concentration, pH and reactions in water including precipitation, acid-base and redox. Students are introduced to stoichiometry and to analytical techniques and instrumental procedures, and apply these to determine concentrations of different species in water samples, including chemical contaminants. They use chemistry terminology including symbols, units, formulas and equations to represent and explain observations and data from experiments, and to discuss chemical phenomena. Students explore the solvent properties of water in a variety of contexts and analyse selected issues associated with substances dissolved in water.

Unit 3: Chemical pathways

Students review and apply their understanding of stoichiometry to complete calculations related to volumetric and gravimetric practical activities. Instrumental analysis techniques of spectroscopy and chromatography are also studied as tools for investigating the identity of useful chemicals. By studying the structure and systematic naming of organic molecules, students design reaction pathways to prepare organic compounds from given starting materials. The role of organic chemicals in forensic analysis and in the development of medicines is also explored.

Unit 4: Chemistry at work

Students explore how factors affecting rate and equilibrium are applied to achieve optimum reaction conditions in the industrial production of chemicals as well as investigating the energy changes associated with thermochemical reactions. Energy resources are compared with respect to environmental sustainability. Students further extend their understanding of stoichiometry with the application of Faraday’s laws to electrolysis reactions.

**DRAMA & THEATRE STUDIES**

The Year 11 course will involve Unit 2 Drama and Unit 2 Theatre Studies. This will provide a wide-ranging theatrical and dramatic experience. The two contrasting, but complementary, subjects will allow students to have the experience of play-building (scripting) their own material, and also use pre-existing scripts from the 20th Century; each thread leads to a performance to an audience. Drama involves a combination of research for devising performance work, learning about different theoretical approaches to performance and individual and group performances. Theatre Studies concentrates on bringing a script to life on the stage and performing it to an audience. The approach to both Drama and Theatre Studies at VCE level is that in order to improve on performance ability, it is necessary to ground all performance in dramatic theory. Students will have the opportunity to explore the development of theatre across time and cultures, devising and performing their own scripts and those of published playwrights. Unit 3 and 4 Drama will also be offered in 2015.
Unit 2 Drama introduces students to Australian Theatre and Drama. Using a variety of sources as stimulus materials, the recurrent themes, motifs, issues and archetypal Australian characters present in our shared stories are examined and used to create a new piece of Australian Drama. Students analyse their own process and performance and also attend and analyse the performance of an Australian play by a professional company.

Unit 2 Theatre Studies examines the innovations made in theatre during the Modern Era. Three or more plays which use different theatrical styles and conventions are studied and brought to life on the stage, using the appropriate stagecraft elements (set, costume, lighting and multimedia, sound, prop, hair and make-up design). Students critically reflect on their own process and performance. They attend and analyse a professional performance of a play from the Modern Era.

Units 3 & 4 Drama focuses dually on performance making and performance analysis and evaluation. In terms of performance making, students will be required to devise, script, direct, and perform in dramatic presentations, both individually and in groups of varying sizes.

Unit 3 Drama focuses specifically on Ensemble Performance. It challenges students to work cohesively and effectively within group situations in order to produce a substantial original contemporary performance work based on a prescribed structure and using a variety of performance styles. Students then analyse their process and final performance. Students will also attend a professional performance and complete a written analysis.

Unit 4 Drama explores Solo Performance – the single student working concurrently as actor, researcher, director and writer. A short (two minute) solo task is followed by the preparation for the Solo Performance Examination task. This uses the prescribed structures published by the VCAA as the stimulus for a seven minute solo performance. Students will also be required to critically reflect upon their process and performance.

Drama and Theatre Studies provides the opportunity to explore theatre traditions across time and cultures, using these ideas to stimulate the performance making process. It is a remarkably vibrant course which encourages the development of confidence, critical thinking skills, aesthetic awareness, leadership skills and interpersonal skills.

Performance assessment involves the writing, directing and performing of an ensemble piece, and a performance exam for which you will devise and perform a solo piece. Written assessment includes personal analytical reflections on your performance work, an end of year written exam, and a review of a professional play in performance.

**ECONOMICS**

Unit 1: The focus of this Unit is the study of economic decision-making and economic issues of importance to the Australian economy in the 21st century.

Areas of Study:

1. **Introducing Economics**

   Students will develop understandings about the nature, operation and role of markets in Australia. We will use a case study approach to apply the theory to real-world situations. One or more of these could be selected for study:
   - Agricultural markets (e.g. wool, sugar, dairy)
   - Other commodity markets (e.g. coal, iron ore)
   - Community markets (e.g. the Queen Victoria Market)
   - The finance market
   - The foreign exchange market
   - Labour markets
   - The property/housing markets
   - Sport and leisure markets
   - The stock market

2. **Economic issues facing the Australian economy**

   All economies face issues of importance that impact on the well-being of people and on the stability of the economy. The issues studied will reflect the contemporary times we live in.

   Two or more of the following issues will be studied:
   - Creation and distribution of income and wealth
The economy, the environment and ecological sustainability
Population, employment and change
Growing the economy
Finance and investment

Unit 2  Australia and the Global Economy
The focus of this Unit is the study of Australia’s external relationships and economic issues of importance in the global economy in 21st century.

Areas of Study:
1. Australia’s external relationships
Students will examine a case study of a major trading partner. This could include a major trading partner economy in Asia (such as India), one which is developing such as Indonesia or PNG, or an economy which is in transition such as China.
2. Economic globalisation
This area will be studied through a case study of a multinational/transnational corporation and will focus on:
   • Structure and size of the organisation
   • Reasons for expansion across national borders
   • Strategies used to gain competitive advantages in the market
   • The role of the ICT
   • A critical analysis of the relationship between the organisation and the host economies

Assessment: A variety of tasks for each Unit which may include written analysis; a folio of applied exercises; a problem-solving task; a folio of print materials; an investigative report; a case study; a debate; an essay; an oral presentation; a webpage or wall poster; a simulation; tests.

Unit 3: Economic Activity and Objectives
This Unit focuses on economic activity in Australia and the factors that affect the achievement of the objectives of the Australian economy.

Areas of Study:
1. Economic Activity in Australia
2. Economic objectives and performance in Australia
The meaning and measurement of the economic objectives of the Australian government including: economic growth, price stability, full employment, equity in the distribution of income and wealth between individuals, external stability, efficiency in resource allocation.

Unit 4: Economic Management
This Unit focuses on management of the Australian economy, which concentrates on budgetary, monetary and microeconomic policy used by the Australian Government.

Areas of Study:
1. The nature, operation and evaluation of macroeconomic policies
Students will study:
   • Budgeting / fiscal policy
   • Monetary policy
   • The ways these policies affect economic problems
   • The effectiveness of these policies
   • The government’s policy mix in the use of these tools
2. The nature, operation and evaluation of microeconomic reform policies
This is a supply-side element and focuses on long-term efficiency and competitiveness. The following will be examined:
   • Rationale for microeconomic reform
   • Key policies
   • The ways these policies operate
   • The effectiveness of these policies
   • The role of these reforms in the policy mix


- Examination of conflicts between microeconomic reform and macroeconomic policies

Assessment: school assessed coursework includes research essay, problem-solving exercises, data investigation and analysis, examination.

**ENGLISH STUDIES:**

**ENGLISH**

All units of English have three areas in common:

- Reading and Responding
  In each of the Units 1 - 4, students will study a set text, with at least one each year being either a novel or form of prose. Students will discuss the characters, themes and ideas of each text; analyse how authors present certain views; examine how authors use structures, features and conventions to convey meaning; present their own responses to the texts both orally and in writing.

- Creating and Presenting
  In each of the Units 1 - 4, students will read or view a set text, using the ideas presented by these texts and other support material as catalysts for various types of writing. They will examine the structures, features and conventions of a range of texts created for different purposes; discuss how form, context, audience and purpose affect style and language; learn the metalanguage necessary to discuss structures, features and forms of their own writing; present their own writing in various forms based on the ideas presented by the texts.

- Using Language to Persuade
  In Units 1 - 4, students will examine various forms of persuasive texts in order to critically analyse the language used in the presentation of a point of view and to construct their own persuasive texts. They will learn to recognise and discuss the features of effective persuasive text; use appropriate metalanguage to identify and discuss persuasive techniques of both visual and print material; plan and construct a coherent and reasoned point of view both orally and in writing.

**Unit 1**

The focus of this Unit is on the reading of a range of texts, particularly narrative and persuasive texts, in order to comprehend, appreciate and analyse the ways in which texts are constructed and interpreted. Students will develop competence and confidence in creating written, oral and multimodal texts. The term ‘set text’ refers to texts chosen by the school for the achievement of Outcomes 1 and 2.

Students must demonstrate the following Outcomes:

- Be able to identify and discuss key aspects of a set text, and to construct a response in oral or written form.
- Be able to create and present texts taking account of audience, purpose and context.
- Be able to identify and discuss, either in writing and/or orally, how language can be used to persuade readers and/or viewers.

**Unit 2**

The focus of this Unit is on reading and responding to an expanded range of text types and genres in order to analyse ways in which they are constructed and interpreted, and on the development of competence and confidence in creating written, oral or multimodal texts. The term ‘set text’ refers to texts chosen by the school for the achievement of Outcomes 1 and 2.

Students must demonstrate the following Outcomes:

1. Be able to discuss and analyse how texts convey ways of thinking about the characters, ideas and themes, and construct a response in oral or written form.
2. Be able to create and present texts taking account of audience, purpose and context.
3. Be able to identify and analyse how language is used in a persuasive text and to present a reasoned point of view in an oral or a written form.

**Unit 3**
The focus of this Unit is on reading and responding both orally and in writing to a range of texts. Students analyse how the authors of texts create meaning and the different ways in which texts can be interpreted. They develop competence in creating written texts by exploring ideas suggested by their reading within the chosen Context, and the ability to explain choices they have made as authors. A list of prescribed Contexts will be published annually in the VCAA Bulletin. Students analyse how language and visuals attempt to persuade readers and/or viewers.

Students must demonstrate the following Outcomes:

1. Be able to analyse, either orally or in writing, how a selected text constructs meaning, conveys ideas and values, and is open to a range of interpretations.
2. Be able to draw on ideas and/or arguments suggested by a chosen Context to create written texts for a specified audience and purpose; and to discuss and analyse in writing their decisions about form, purpose, language, audience and context.
3. Be able to analyse the use of language in texts that present a point of view on an issue currently debated in the Australian media, and to construct, orally or in writing, a sustained and reasoned point of view on the selected issue.

Unit 4
The focus of this Unit is on reading and responding in writing to a range of texts in order to analyse their construction and provide an interpretation. Students create written texts suggested by their reading within the chosen Context and explain creative choices they have made as authors in relation to form, purpose, language, audience and context.

Students must demonstrate the following Outcomes:

1. Be able to develop and justify a detailed interpretation of a selected text.
2. Be able to draw on ideas and/or arguments suggested by a chosen Context to create written texts for a specified audience and purpose; and to discuss and analyse in writing their decisions about form, purpose, language, audience and context.

The exam in November requires students to write on one text (Reading & Responding), one text (Creating & Presenting) and to analyse written and visual language (Using Language to Persuade).

ENGLISH/EAL (English as an Additional Language)
This subject is available only at Units 3/4 level at Mac.Rob. Students must meet VCAA criteria which relate to years of education in English and years of residence in an English-speaking country.

English as an Additional Language follows the course outlined for English. The difference is that in Unit 3, Area of Study, Using language to Persuade, English as an additional language students are required to present a sustained and reasoned point of view on a selected issue in a written or oral form only. Whether it is written or oral is determined each year by the teachers of year 12 English/English as an additional language. Language analysis whilst not assessed in Unit 3 is assessed in the exam in Unit 4. Unit 4 has the same requirements as Unit 4 English. The assessment criteria for English as an additional language for all the SACs take into account the fact that students are studying English as a second language and are accordingly modified. Additional time is given for the conduct of each of the SACs. The exam in November requires students to write on one text (Reading & Responding), one text (Creating & Presenting) and to a note-form summary and analyse written and visual material (Using Language to Persuade).

ENGLISH LANGUAGE
This relatively new and exciting VCE study covers a broad spectrum of study areas and is a mix of linguistics, sociology, psychology and history, to name but a few! This English study is unlike any other in that it aims to have relevance to students’ daily lives by looking at the way we use English Language in our interactions with others to achieve particular effects. It examines the nature of language in different social contexts and teaches students to be more competent writers and speakers.

Units 1 & 2
Among the means of communication used by people, language occupies a unique and central place. Language serves many purposes: to inform others, to make inquiries, to carry out transactions, to establish and maintain
relationships, to express and affirm individual and group identity, to preserve knowledge and traditions, and to express pleasure.

This study aims to combine learning about the nature of language in human thought and communication with learning how to use English more effectively and creatively. It is informed by the discipline of linguistics and integrates a systematic exploration of the nature of English with development of skills in description and analysis of a diverse range of English texts, including spoken and written varieties.

**Unit 1: Language and communication**
The focus of this Unit is language and its use in communication. Students explore the different functions of language in written and spoken communication, including conversations, advertising, graffiti, and various other text types. Students investigate children’s ability to learn language and the stages of acquisition across a range of subsystems. The following areas are studied:

1. The nature and functions of language
2. Language acquisition

**Unit 2: Language Change**
The focus of this Unit is how English has changed over the centuries, and the current role of English in global society. As English has spread across the world, various different English varieties have emerged, such as African-American Vernacular English, Singaporean English, and Jamaican English. At the same time, students consider the cultural impact of the spread of English on minority languages, including Aboriginal languages that are now threatened. The following areas are studied:

- English across time
- English in contact

**Units 3 & 4**

**Unit 3: Language Variation and Social Purpose**
Unit 3 looks at English is the Australian social setting along the continuum of informal and formal language registers. Students look at the stylistic features of different formalities and how this is reflected through the synthesis of language. This Unit focuses on how language uses written and spoken modes to communicate information, ideas, attitudes, prejudices and ideological stances. Students examine how texts are influenced by situational and cultural contexts and how language can indicate relationships, power structures and purpose. The following areas are studied:

- Informal language
- Formal language

**Unit 4: Language Variation and Identity**
Unit 4 focuses on the role that language plays in establishing and challenging different identities. A variety of texts are analysed to see how different identities are constructed through language. Students explore how our sense of who we are is constantly evolving and responding to the situations in which we find ourselves and is determined not only by how we see ourselves, but by how others see us. Students will also undertake to strengthen their understanding of the International Phonetic Alphabet and how to represent a range of Australian accents. The following areas are studied:

- Language variation in Australian society
- Individual and group identities

**ENVIRONMENTAL SCIENCE**

VCE Environmental Science is an interdisciplinary subject that applies scientific methodology to the study of environmental issues. This Unit 3/4 subject crosses the boundaries of the more traditional subjects including biology, chemistry, physics, mathematics, and the social sciences. The investigation of environmental issues from a variety of perspectives allows students to develop a broad understanding of the complexities of these issues and the exploration of appropriate management options.

The subject suits students who have an interest in current issues and enjoy applying scientific method to the investigation of environmental topics. Important skills required by students undertaking the subject include critical and analytical thinking; the application of simple statistical calculations to analyse data; synthesis of information
from a variety of sources; and an ability to evaluate the costs and benefits of various management strategies. Learning tasks include: problem solving, decision-making, data analysis, factual recall, individual research, fieldwork and group work.

Students will require a scientific calculator for use during classes in addition to the mid-year and end-of-year examinations.

**Unit 3:**  
**Area of Study 1:**  
Explores the concept of energy and the consequences of its use by society; the principles of energy; different energy resources used by humans; the causes and impacts of the enhanced greenhouse effect; and the management strategies developed to address environmental issues arising from energy use.

**Area of Study 2:**  
Explores the concept of biodiversity, its role in sustaining species and the ecological services, biological resources and social benefits they provide for humans. Investigates processes that threaten biodiversity, and the scientific principles applied in managing biodiversity; examines a selected endangered species and strategies implemented to secure its conservation.

**Unit 4:**  
**Area of Study 1:**  
Explores the relationship between pollution and the health of humans and the environment; the characteristics of selected pollutants; the evaluation of management options for reducing the risk of a pollutant affecting the health of the environment and humans.

**Area of Study 2:**  
Explores the application of principles of ecologically sustainable development and methods used in environmental management; an in-depth study of a selected environmental science project.

Students can complete Unit 3 and 4 Environmental Science without completing Unit 1 and 2 (and we do not offer Unit 1 and 2 at Mac.Rob).

**EXTENDED INVESTIGATION**

The Extended Investigation enables students to develop, refine and extend knowledge and skills in independent research and carry out an investigation that focuses on a rigorous research question. Students conduct a review of relevant literature and develop research project management knowledge and skills and ways of effectively presenting and communicating research findings.

Students are introduced to a broad range of research methods and explore their comparative suitability for the investigation of particular questions. Through this study, students develop their capacity to explore, justify and defend their research findings to a general audience in both oral and written forms.

The skills that students develop in this study are transferable to any higher education course or vocational education and training program.

**Unit 3:**  
**Area of study 1 - Designing a research question**  
Students devise a research question that requires a detailed inquiry and that is of significance. They set the parameters for their research and examine a range of research methods.

**Area of study 2 - Planning and commencing the investigation**  
In this area of study students learn about the practical components of planning and undertaking research, methods of research and their application, establishing timelines and milestones and the general principles of research project management.
Area of study 3 - Critical thinking
This area of study provides students with the opportunity to apply critical thinking skills to their research.

Unit 4:
Area of study 1 - Presenting the final research report
In this area of study students complete their Extended Investigation and write the final report (4000 words) that provides their response to the research question.

Area of study 2 - Defending research findings
In this area of study students shape their research and findings into presentation format. They present their investigation to a non-specialist panel and respond to questions and challenges (15-20 minutes).

FOOD TECHNOLOGY
This subject 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. Through this study students develop knowledge of the physical, chemical, sensory and functional properties of food and are able to apply this knowledge when using food in a practical situation. Students consider the importance of environmental issues and sustainability practices in food production, as well as the important role of technology in food product development and the way food is produced, processed, packaged and marketed. Students use the design process, critical thinking and problem-solving skills to develop food products that suit specific situations or that meets the needs of individual consumers and their lifestyles.

Unit 1 : Food Safety and Properties of Food
Explores how food is classified, the physical and chemical properties of food and the way these properties influence food preparation, presentation and storage. This knowledge is applied to use tools and equipment to safely and hygienically produce quality outcomes in food production. Ethical considerations in food selection such as fair trade and intensive farming practices are also considered.

Unit 2 : Planning and Preparation of Food
Investigating the most appropriate tools and equipment to produce optimum results, including the latest developments in food technology. The design process is used to respond to challenges of preparing food safely and hygienically for a variety of contexts and consumers, taking into account nutritional considerations social and cultural influences and resource availability.

Unit 3 : Food Preparation, Processing and Food Controls
Food preparation and processing techniques for key foods are investigated including primary and secondary food processing, components of key foods and cooking techniques. Food manufacturing systems are compared and their suitability to different products is justified. The roles and responsibilities of and the authorities that govern food laws and standards to maintain food safety in Australia including the production and labelling of manufactured products. Students apply a range of cooking, food preparation, processing and preservation techniques of key foods, while following food safety and hygiene requirements. Production plans are developed.

Unit 4: Food product development and emerging trends
Implementation of a design brief and evaluating the outcome of the product against the brief. This will cover food preparation, properties of food, safety and hygiene requirements. Product development will be examined with process development and marketing being analysed. Environmental issues in the food industry, plant breeding and genetic modification are also covered. An analysis of the driving forces related to food product development, new and emerging food products and the development and marketing of foods.


GEOGRAPHY
Geography is a structured way of exploring, analysing and understanding the world. Geographers are interested in key questions concerning places and geographic phenomena: What is it? Where is it? What are the effects of it being there? How is it changing over time, and how could, or should, it change in the future? How are places and phenomena connected and how do they differ? Students explore these phenomena through fieldwork and a wide
range of secondary sources. This allows students to appreciate the complexity of the interconnections between environments, economies and cultures. Adopting a spatial perspective to phenomena regarding the physical world and the people who inhabit it is a unique aspect of Geography.

The subject suits students who have an interest in topical issues, people and places, and the diversity of cultures and environments on Earth. Important skills required by students undertaking the subject include the ability to interpret and present information in a variety of formats; analyse and describe data to identify trends and spatial patterns; discuss the factors which contribute to the development of phenomena; identify impacts and extrapolate and predict future outcomes; and evaluate how people respond to phenomena. The learning tasks students are required to complete include short and extended written responses and the presentation of data in a variety of formats.

Please note, students can undertake Unit 1 and 2 independently of each other, and students can study Units 3 and 4 without having completed Unit 1 and/or Unit 2.

Unit 1: Hazards and disasters
Students examine hazard events, including their causes and impacts, human responses to these events, and the interconnections between human activities and natural phenomena. Hazards include a wide range of situations including those within local areas, such as fast moving traffic or the likelihood of coastal erosion, to regional and global hazards such as drought and infectious disease. Students investigate how people have responded to specific types of hazards, including attempts to reduce vulnerability to, and the impact of, hazard events.

Unit 2: Tourism
Over one billion tourists a year cross international boundaries with greater numbers involved as domestic tourists within their own countries. In this unit students investigate the characteristics of tourism, with particular emphasis on where it has developed, its various forms, how it has changed and continues to change and its impacts on people, places and environments. They select contrasting examples of tourism from within Australia and elsewhere in the world to support their investigations.

Unit 3: Changing the land
People have changed the land to produce a diversity of different land uses across the landscape. In Area of Study 1 students look at one local example of where there has been such change, and through fieldwork investigate why it has changed, and how these changes have impacted on the environment as well as the social conditions and economic activity.

The world supports a diversity of natural land cover due to differences in the biophysical environment, such as climate and topography, as well as the influence of human activities. Land cover includes biomes such as forest, tundra and deserts. In Area of Study 2, students investigate changes to land cover through deforestation, desertification and glacier and ice melt over geological time scales, as well as in recent decades. Students investigate the causes and impacts of these changes on a global scale, in addition to local and national examples, and how they have been managed.

Unit 4: Human population – trends and issues
Students explore various aspects of the world’s population and their pattern of change over time and space, and how these changes are being managed in different parts of the world. They learn about various aspects of population dynamics, including birth rates, infant mortality and life expectancy, and how these aspects transition as countries develop economically. They investigate the major causes of changes in population dynamics since the Industrial Revolution and more recently, and the role of population movement in the changing pattern of population distribution. They examine some of the challenges resulting from major trends in the demographic profile of different places, contrasting places experiencing rapid population growth with those experiencing a decline in birthrates leading to an ageing population.

GLOBAL POLITICS

Global Politics is the study of the political, social, cultural and economic forces that shape interactions between state and non-state actors in the twenty-first century. It examines the interconnectedness of twenty-first century global citizens and the impact of globalisation on culture, language, human rights and the environment. It examines the nature and effectiveness of key global actors in the twenty-first century and global challenges, including human rights, people movements, development issues and weapons proliferation. It explores the nature
of global crises such as environmental degradation, war and terrorism, and the effectiveness of responses and proposed solutions by key global actors.

Unit 1: The National Citizen
In this unit students are introduced to the study of politics as the exercise of power by individuals, groups and nation-states. Students consider key concepts related to power and influence, types of power, political ideology and values, political involvement and active citizenship. The nature of and philosophical ideas behind democracy are studied, as well as the operation and nature of contemporary Australian representative democracy. Students examine the reasons why people seek political power, the characteristics of successful political activists and leaders, and the political ideas that motivate them. The ways in which political power is exercised and how that power is challenged and resisted by others is explored. Students also examine the role and influence of social and political movements as methods of organising political ideas and action.

AREA OF STUDY 1
Power, politics and democracy
What is politics? In what ways do individuals and groups gain and exercise political power? What are the most significant features of the way politics is practised in Australia? What opportunities exist for younger Australians to participate in the Australian political system?

AREA OF STUDY 2
Exercising and challenging power
Why do individuals get involved in politics? Do political leaders have similar characteristics and share similar aims? What are the major political ideologies? What are the ideas and aims of the most significant political movements in Australia?

Unit 2: The Global Citizen
This unit focuses on the contemporary international community. Students examine their place within this community through considering the debate over the existence of the ‘global citizen’. In Area of Study 1 they explore the myriad ways their lives have been affected by the increased interconnectedness – the global threads – of the world through the process of globalisation. In Area of Study 2, students consider the extent to which the notion of an international community exists, and investigate its ability to manage areas of global cooperation and respond to issues of global conflict and instability.

This unit is concerned with contemporary issues and events. While these may have antecedents in issues and events before the twenty-first century that students need to understand to contextualise contemporary global situations, focus needs to be on the twenty-first century when choosing particular examples and case studies.

AREA OF STUDY 1
Global threads
How do citizens in the twenty-first century interact? How have our lives been affected by globalisation? Do citizens have global responsibilities? Does the global citizen really exist?

In this area of study students consider how citizens in the twenty-first century interact and connect with the world. Almost every facet of human life in the western world has been transformed by recent and rapid technological changes. As a result, increased global interconnectedness has transformed lives and created global threads, and in so doing, raised the debate over whether or not citizens’ responsibilities exist beyond national borders.

Global cooperation and conflict
What do we understand by the term ‘international community’? How does this community work in the twenty-first century and what are its responsibilities? How effective is the international community in managing cooperation, conflict and instability? What challenges do key global actors such as the United Nations and NGOs, face in resolving issues such as war, conflict, environmental challenges and people movement?

Unit 3
Area of Study 1 – Global Actors
This area of study is designed to provide the foundations for examining the global political arena and the key actors within global politics, for example, states, intergovernmental organisations such as the United Nations, and non-governmental organisations such as Greenpeace. Students must investigate the following for each of the global actors: their aims and objectives, the role they perform, from where their power stems and the extent of
their influence. This culminates in an examination of the extent to which each global actor is able to achieve its aims.

**Area of Study 2 – Power in the Asia-Pacific**

This area of study focuses on the use of power by one Asia-Pacific state, China, within the region. Students investigate the use of power and foreign policy instruments, and evaluate the effectiveness of these in achieving the state’s national interest.

Students are expected to know that a type of power can take many different forms; for example, military power can be exercised through the firing of missiles, increasing one’s military budget or the strategic placement of armaments. Students investigate the advantages and disadvantages of different forms of power and foreign policy instruments when comparing and contrasting the effectiveness of these different types of power and foreign policy instruments in achieving a state’s national interest.

**Unit 4**

**Area of Study 1 – Ethical Issues and Debates**

This area of study focuses on the analysis of a range of perspectives and the evaluation of the effectiveness of states, the United Nations and NGOs. Emphasis should be placed on the ability of institutions of global governance, for example, the United Nations or the International Criminal Court, to uphold international laws and indict actors who flout them.

The following are examples of the ethical issues that can be examined:

- Human rights: the rights of women in fundamentalist Islamic states, the rights of the child in developing states, the use of torture in combating terrorism, the ‘Responsibility to Protect’ in Libya and Darfur.
- Development focusing on poverty and inequality: fair trade, trade liberalisation, micro-finance schemes, development aid, debt relief.
- Arms control and disarmament: New Strategic Arms Reduction Treaty, Iran’s nuclear weapons program, ongoing work and progress of the Mine Ban Treaty, work of the UN Office for Disarmament Affairs.

**Area of Study 2 – Crises and Responses**

In this area of study students investigate the nature of our crisis-prone world. They focus on the identification of characteristics and evaluation of responses to two global crises. The two global crisis that we focus on will be based on student interest. Below are some examples of global crisis that may be examined:
Unit 2: Individual human development and health issues

Prenatal health and individual development
In this area of study students develop understanding of the health and individual human development of Australia’s unborn children. Students study the physical changes that occur from conception to birth. Students investigate how determinants, including physical environment, biological, behavioural and social, influence prenatal health and individual human development.

Child health and individual development
The focus of this area of study is the development of students’ understanding of the health and individual human development of Australia’s children. Students study the period from birth to approximately twelve years. They explore the physical, social, emotional and intellectual changes that occur from birth to late childhood. Students investigate how determinants, including physical environment, biological, behavioural and social, influence child health and development.

Unit 3: Australia’s health
Australians generally enjoy good health and are among the healthiest people in the world when compared to other developed countries. 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 biological, behavioural and social determinants of health.

Funding for the Australian health system involves a combination of both government and non-government 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 refers to meeting the needs of the present without compromising the ability of future generations to meet their own needs’ (United Nations, 1992).

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 combating 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 co-ordinating 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.
HISTORY STUDIES:

HISTORY

Unit 1 & 2 only

Unit 1: People and Power
Challenge and change are fundamental processes in human history. Discontent and desire to change grow until an established idea or society is challenged by one person or by a group of formally organised people. A struggle ensues resulting in ‘old’ and ‘new’ battles for supremacy. Eventually a new balance emerges, but to what extent is there continuity and change between the ‘old’ and the ‘new’?

People and power considers these struggles for change in the light of the struggle for power in China, starting with Western Imperialism in China, moving through to the victory of the Chinese Communist Party in the Chinese civil war in 1949:

1. Power and authority
This part of the study will examine the traditional structures of power in pre-revolutionary China. The focus will be on China’s last monarch, the Qing Dynasty, how they exercised power over China and how they dealt with the challenge of Western Imperialism.

2. Dissenting groups and challenges
The groups that emerged to challenge China’s traditional order, with a particular focus on Mao Zedong and the Chinese Communist Party.

3. Change
This area of study focuses on the extent to which the Chinese Communist Party was successful in its effort to change China for the better. The focus of this area of study will be on the rule of Mao and the Chinese Communist Party from 1949-1976

Unit 2: Twentieth Century History (since 1945)
This Unit examines important world developments following World War Two. It provides the opportunity to study major themes and principal events of post war history with attention to domestic and international developments.

It considers the Cold War as it unfolded in Eastern Europe, Korea, Cuba and Vietnam during the period of the Vietnam War. An examination will be undertaken of social movements in the latter half of the Twentieth Century such as the civil rights movement, the hippy movement and other liberation movements around the world, which resulted in the spread of decolonisation. Areas of Study cover:

1. Ideas and Political Power
2. Movements of the People
3. Issues for the Millennium

HISTORY: REVOLUTIONS

Units 3 & 4 only
Revolutions are the dramatic means by which societies can break with their past; they occur in societies which are no longer functioning and where there is support for social and political transformation. By their very nature, revolutions involve destruction and rebuilding, depression and liberation, turmoil, bloodshed and hope for a better future. They may also lead to civil war, terror, repression and may produce colourful and dynamic leaders.

Revolutions 3 & 4 examines two revolutions which had a far-reaching influence on subsequent world history. At Mac.Rob we focus on:

- The French Revolution of 1789
- The Russian Revolution of 1917
For each revolution, Areas of Study cover:

- Revolutionary ideas, leaders, movements and events
- Creating a new society

**IT APPLICATIONS**

**Unit 1: IT in action**

This unit focuses on how individuals and organisations use, and can be affected by, information and communications technology (ICT) in their daily lives. In Areas of Study 1 and 3, students acquire and apply a range of knowledge and skills to manipulate different data types such as numeric, text, sound and images (still and moving) to create solutions that can be used to persuade, educate, inform and entertain. In Area of Study 3, students also explore how their lives are affected by ICT, and consider strategies for managing how ICT is applied. In Area of Study 2, students examine how networked information systems allow data to be exchanged locally and within a global environment, and explore how mobile devices, such as phones, are used within these networks.

**Unit 2: IT pathways**

This unit focuses on how individuals and organisations use ICT to meet a range of purposes. Students apply a range of knowledge and skills to create solutions, including those that have been produced using a programming or scripting language, to meet users’ needs. In this unit, students apply all stages of the problem-solving methodology when creating solutions.

**Unit 3: IT applications**

The focus of Unit 3 is the World Wide Web and how it supports the information needs of individuals, communities and organisations. In Area of Study 1, students investigate the design and technical underpinnings of different types of websites that support the varying needs of online communities. Students use web authoring software to create prototype websites for particular online Communities, taking into account both technical and non-technical constraints.

**Unit 4: IT applications**

In this unit students focus on how ICT is used by organisations to solve ongoing information problems and on the strategies used to protect the integrity and security of data and information. In Area of Study 1 either a relational database management system (RDBMS) or spreadsheet software is selected and used to create solutions to information problems. In addition, students use web authoring or multimedia authoring software to produce onscreen user documentation. When creating solutions to ongoing information problems, students apply all stages of the problem-solving methodology.

**INFORMATION TECHNOLOGY**

VCE Information Technology focuses on the processing of data and the management of information and information systems. The rapid pace of development in information and communications technology (ICT) is having a major influence on many aspects of society. Not only does ICT provide the capacity to change how tasks and activities are undertaken, but it also creates new opportunities in work, education, entertainment and society.

While it is important that students extend their use of ICT as a learning and personal tool, the study of VCE Information Technology encompasses information systems and how people interact with information technology to create structured information and to connect with others to exchange information. It encompasses the theoretical foundations of computation and techniques for writing programs and developing solutions. It also focuses on how the needs of individuals, organisations, communities and society are met through the combination of ICT and meaningful information.

VCE Information Technology equips students with appropriate knowledge and skills to use ICT responsibly and to make informed personal and workplace choices about developments in this exciting field. Students are encouraged to orient themselves towards the future, with an awareness of the technical and societal implications of ICT.
VCE Information Technology provides pathways to further studies in IT and to careers in ICT-based areas. It also prepares students for programs that require an IT-related subject or for a range of careers that require efficient and effective use of ICT.

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In Area of Study 1 students analyse data from large repositories and manipulate selected data to create visualisations. In Area of Study 2 students develop skills in using programming or scripting language software and they investigate careers that involve the use of these skills. Working in teams is an important and effective strategy for solving problems, and this strategy is applied in Area of Study 3 when students solve problems for clients in the community.

Languages Other Than English (LOTE):

FRENCH, GERMAN, INDONESIAN, JAPANESE

Units 1 to 4 will be offered in each of these Languages Other Than English. Normally students will have completed the relevant LOTE study at Middle School level before undertaking VCE LOTE study.

The VCE LOTE courses are designed to enable the students to develop and expand the receptive, productive and interactive use of the language.

New language structures will be introduced in the context of topics or themes which enable the student to develop and practice all aspects of language ability. A large variety of texts will be presented and discussed, and students are expected to produce various pieces of written work in the language, using different text types and kinds of writing.

Students are encouraged to use the language in conversations and discussions, presentations of topics, situational role-plays, and oral performances.

The Assessment Tasks in Units 1 - 4 are based on the development of the principles of language learning, namely the development of listening, speaking, reading and writing competence.

Units 1 - 4 encourage a stronger focus on the cultural aspects and background studies. Unit 3 & 4 students have access to a native speaker conversation assistant.

The study of most Languages other than English in the VCE attracts a bonus of 5 points to Study Scores (at the level of the ATAR scaled mean).
LEGAL STUDIES

Unit 1: Criminal Law in Action
This unit allows students to explore aspects of criminal law and the criminal trial through the use of case studies and mock court activities. Current government policy and legal reform in areas such as sentencing are debated. Students are introduced to the skill of mooting.

Unit 2: Issues in Civil Law
This unit covers legal ‘wrongs’ such as defamation. The trial procedures are explored and the system evaluated to understand difficulties faced by people trying to resolve their disputes. This unit tackles a range of legal issues and has an area of study focusing upon the question of rights.

Unit 3: Law Making
This unit explores the effectiveness of the Parliamentary system and the role that individuals and groups can play in bringing about legal change. A comparative study is made of the way Human Rights are protected in countries with and without a Constitution. The role played by the courts, especially the High Court, in law making is studied.

Unit 4: Resolution and Justice
This unit explores the effectiveness of methods of dispute resolution within the Australian legal system. Reforming the legal system to improve its operation is a major focus.

LITERATURE

Unit 1
This unit focuses on the ways literary texts represent human experience and the reading practices students develop to deepen their understanding of a text. Students respond to a range of texts personally, critically and creatively. This variety of approaches to reading invites questions about the ideas and concerns of the text. While the emphasis is on students’ close engagement with language to explore texts, students also inform their understanding with knowledge of the conventions associated with different forms of text, for example poetry, prose, drama and/or non-print texts.

There are three Areas of Study:
1. Readers and their responses
2. Ideas and concerns in texts
3. Interpreting non-print texts

Outcomes:
- Students should be able to discuss how personal responses to literature are developed and justify their own responses to one or more texts.
- Students should be able to analyse and respond both critically and creatively to the ways in which one or more texts reflect or comment on the interests and ideas of individuals and particular groups in society.
- Students should be able to analyse the construction of a film, television, multimedia, or radio text and comment on the ways it represents an interpretation of ideas and experiences.

Unit 2
The focus of this unit is on students’ critical and creative responses to texts. Students deepen their understanding of their responses to aspects of texts such as the style of narrative, the characters, the language and structure of the text. Students extend their exploration of the ideas and concerns of the text. They understand the ways their own culture and the cultures represented in the text can influence their interpretations and shape different meanings. Students make comparisons between texts and identify some of the relationships that exist through features such as the language, characterisation and ideas.

There are two areas of study
1. The text, the reader and their contexts
2. Comparing texts
Outcomes

- On completion of this unit the student should be able to analyse and respond both critically and creatively to the ways a text from a past era reflects or comments on the ideas and concerns of individuals and groups at that time.
- On completion of this unit the student should be able to produce a comparative piece of interpretative writing with a particular focus; for example, ideas and concerns, form of the text, author, time in history, social or cultural context.

Unit 3

Focuses on the ways writers construct their work and how meaning is created for and by the reader. Students consider how the form of text (such as poetry, prose, drama, non-print or combinations of these) affects meaning and generates different expectations in readers, the ways texts represent views and values and comment on human experience, and the social, historical and cultural contexts of literary works.

There are three Areas of study:

1. Adaptations and Transformations
2. Views, values and contexts
3. Considering alternative viewpoints

Outcomes: Students should be able to:

- Analyse how meaning changes when the form of a text changes
- Analyse, interpret and evaluate the views and values of a text in terms of the ideas, social conventions and beliefs that the text appears to endorse, challenge or leave unquestioned
- Evaluate views of a text and make comparisons with their own interpretation

Unit 4

This Unit focuses on students’ creative and critical responses to texts. Students consider the context of their responses to texts as well as the concerns, the style of the language and the point of view in their re-created work. In their responses, students develop an interpretation of the text and learn to synthesise the insights gained by their engagement with various aspects of a text into a cogent, substantiated response.

Outcomes:

Students should be able to:

- Respond imaginatively to a text, and comment on the connections between the text and the response.
- Analyse critically features of a text, relating them to an interpretation of the text as a whole.

MATHEMATICS

The VCE Study Design for Mathematics has significant changes beginning in 2016 and subjects offered at Units 1 and 2 reflect this change in curriculum.

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. 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’. These two units incorporate topics that provide preparation for various combinations of studies at Units 3 and 4, especially Further Mathematics, and cover assumed knowledge and skills for those units.

Mathematical Methods Units 1 and 2 are completely prescribed and provide an introductory study of simple elementary functions of a single real variable, algebra, calculus, probability and statistics and their applications in a variety of practical and theoretical contexts. The focus of Unit 1 is the study of simple algebraic functions, and the areas of study are ‘Functions and graphs’, ‘Algebra’, ‘Calculus’ and ‘Probability and statistics’. In Unit 2, students
focus on the study of simple transcendental functions and the calculus of simple algebraic functions. The areas of study are ‘Functions and graphs’, ‘Algebra’, ‘Calculus’, and ‘Probability and statistics’.

_These two units are designed as preparation for Mathematical Methods Units 3 and 4 and cover assumed knowledge and skills for those units. (This study is equivalent to that taken by Year 10 accelerated Mathematics students in 2015)_

**Specialist Mathematics Units 1 and 2** comprise a combination of prescribed and selected non-calculus based topics and provide courses of study for students interested in advanced study of mathematics, with a focus on mathematical structure and reasoning. This study has a focus on interest in the discipline of mathematics in its own right and investigation of a broad range of applications, as well as development of a sound background for further studies in mathematics and mathematics related fields.

The areas of study for Units 1 and 2 of Specialist Mathematics are ‘Algebra and structure’, ‘Arithmetic and number’, ‘Discrete mathematics’, ‘Geometry, measurement and trigonometry’, ‘Graphs of linear and non-linear relations’ and ‘Statistics’.

These two units incorporate topics that, _in conjunction with Mathematical Methods Units 1 and 2_, provide preparation for Specialist Mathematics Units 3 and 4 and cover assumed knowledge and skills for those units.

**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 across a range of application contexts. They provide general preparation for employment or further study, in particular where data analysis, recursion and number patterns are important. Further Mathematics consists of two areas of study, a compulsory Core area of study to be completed in Unit 3 and an Applications area of study to be completed in Unit 4. The Core comprises ‘Data analysis’ and ‘Recursion and financial modelling’. The Applications comprises two modules from a selection of four possible modules: ‘Matrices’, ‘Networks and decision mathematics’, ‘Geometry and measurement’ and ‘Graphs and relations’.

_Assumed knowledge and skills for the Core are contained in the General Mathematics Units 1 and 2 topics and for each module there are related topics in General Mathematics Units 1 and 2. Students who have done only Mathematical Methods Units 1 and 2 will also have had access to assumed knowledge and skills to undertake Further Mathematics but may also need to undertake some supplementary study._

Further Mathematics:
- may be taken alone or with Mathematical Methods Units 3/4
- may be used for employment and general tertiary purposes - you should check VICTER 2016 Year 11 preparation for this subject.
- The Mathematics Faculty suggests that **General Mathematics Units 1 and 2** offers the best preparation.

**Mathematical Methods Units 3 and 4** are completely prescribed and extend the introductory study of simple elementary functions of a single real variable, to include combinations of these functions, algebra, calculus, probability and statistics, and their applications in a variety of practical and theoretical contexts. Units 3 and 4 consist of the areas of study ‘Functions and graphs’, ‘Calculus’, ‘Algebra’ and ‘Probability and statistics’, which must be covered in progression from Unit 3 to Unit 4, with an appropriate selection of content for each of Unit 3 and Unit 4. Assumed knowledge and skills for Mathematical Methods Units 3 and 4 are contained in Mathematical Methods Units 1 and 2.

These two units also provide background for further study in, for example, science, humanities, economics and medicine.

Mathematical Methods;
- may be taken alone or with either Specialist Mathematics 3/4 or Further Mathematics
- this subject is a prerequisite for many tertiary courses including Science, Business and Health Sciences.
- Year 11 Preparation: Mathematical Methods 1/2 must be taken (NB students in the Year 10 Accelerated Mathematics program have already done this).
Specialist Mathematics Units 3 and 4 are designed to be taken in conjunction with Mathematical Methods Units 3 and 4, or following previous completion of Mathematical Methods Units 3 and 4. The areas of study extend content from Mathematical Methods Units 3 and 4 to include rational and other quotient functions as well as other advanced mathematics topics such as 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.

Specialist Mathematics Units 3 and 4 also assumes familiarity with the key knowledge and skills from Mathematical Methods Units 1 and 2 and the key knowledge and skills from Specialist Mathematics Units 1 and 2.

Specialist Mathematics;
- must be taken in conjunction with Mathematical Methods 3/4 (unless a student has previously completed Mathematical Methods 3/4).
- a pre-requisite alongside Mathematical Methods 3/4 for a small number of tertiary courses (e.g. some Engineering courses)
  - Yr 11 Preparation: MGHS students wishing to take Specialist Mathematics Units 3/4 should study both Specialist Mathematics Units 1 and 2 and Mathematical Methods 1/2
- Please note that Specialist Mathematics 3/4 is not available to Year 11 students, unless the most exceptional circumstances exist.

Some important guidelines in choosing Mathematics units:
- Students should select Mathematics subjects on the basis of interest, ability and tertiary course pre-requisites.
- Students who have had difficulty with Year 10 Mathematics will most likely find 1/2 Mathematics Methods even more difficult. Unless Methods is needed to satisfy tertiary pre-requisites, such students may find it more appropriate to take 1/2 General Further, or discontinue their study of Mathematics.
- Year 10 Accelerated Mathematics students will receive advice from the Mathematics Faculty regarding the wisdom of choosing of 3/4 Mathematics Methods in 2015.
- This school does not encourage students taking both Specialist Mathematics and Further Mathematics within their VCE course. In preparing for tertiary courses and careers, it is much better to take a wider variety of subjects.

Summary of Combinations of Mathematics units

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<thead>
<tr>
<th>Units 1 and 2</th>
<th>Units 3 and 4</th>
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<tbody>
<tr>
<td>General Mathematics</td>
<td>Further Mathematics</td>
</tr>
<tr>
<td>Mathematical Methods</td>
<td>Mathematical Methods or Further Mathematics</td>
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<tr>
<td>General Mathematics and Mathematical Methods</td>
<td>Mathematical Methods and/or Further Mathematics</td>
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<td>Mathematical Methods*</td>
<td>Mathematical Methods and Specialist Mathematics</td>
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<td>Mathematical Methods and General Mathematics</td>
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<td>Mathematical Methods and Specialist Mathematics</td>
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<tr>
<td>General Mathematics or Specialist Mathematics and Mathematical Methods</td>
<td>Further Mathematics, Mathematical Methods and Specialist Mathematics</td>
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* For this combination of units, students will need to undertake some supplementary study with respect to assumed knowledge and skills for Specialist Mathematics Units 3 and 4.
MEDIA

VCE Media is a subject that enables students to explore how meaning is produced by the media, and how production and story elements in media texts work together to engage audiences. There is a focus on the way in which specific media texts embody and reflect the social values specific to contemporary society as well as an exploration of the way in which the values of the past influenced the construction of representations in texts from the other historical periods. Students also look at the implications of technology on the construction and consumption of media products.

In addition, there is a practical element to this subject, in which students take on the roles and responsibilities of media personnel and plan, design and produce their own media products such as a short film, a magazine or a multimedia production. Students use various technical equipment and software programs to make this product.

Unit 1: Representation and technologies of representation
This unit encourages students to develop an understanding of the relationship between the media, technology and the representations present in media different forms. The unit also involves the study of the implications of media technology for the individual and society. Students develop practical and analytical skills through their study and creation of representations.

Unit 2: Media production and the media industry
This unit enables students to develop their understanding of the specialist production stages and roles within the collaborative creation of a media product. Students also develop an understanding of the current industry issues and developments in relation to the production stages and roles and the broader framework within which Australian media organisations operate.

Unit 3: Narrative and media production design
This unit examines various production and story elements, with a focus on the significance of narrative organisation in fictional media texts. The practical element of this unit consists of short exercises using technical equipment and the completion of a design plan for the media product— the script and story board for a short film or the design, layout and content of a magazine or photographs.

Unit 4: Media: Process, influence and society’s values
In this Unit, students will develop practical skills through their production and realisation of a media design plan developed in Unit 3. There is also a theoretical part to this unit in which students analyse the relationship between media texts, social values and discourses in the media. The final part of the unit involves an exploration of the relationship between media audiences, the media and regulation.

Students taking this subject should be aware of the commitment it entails, which includes production sessions outside of normal school hours, as most filming/photographic shoots are likely to be undertaken outside of school.

It is also useful if students enter this Unit have an idea of the product they wish to make, plus a knowledge of how to use the equipment (e.g. Digital camera, colour printer) and computer programs (e.g. Premiere, Photoshop, Flash, InDesign)

MUSIC INVESTIGATION UNITS 3 & 4

These units build on knowledge developed in Music Performance Units 1-4.

In this subject, students select a performance work from either the relevant instrument Prescribed list of solo works, or the Prescribed list of group works, both published annually by the VCAA. Students use this work as a starting point to design their own specific focus area of music: Investigation, Composition/Arrangement/Improvisation and Performance.

Focus Area examples: Virtuosity in improvised guitar solos 1965- to present day, performing Baroque music on the modern flute, influence of baroque music on 20th Century Composition etc.
Unit 3:
In this unit students select a Focus Area to work on based on a work from the prescribed lists. Students select, rehearse and perform works that relate to the Focus Area and compile a folio of compositions/arrangements/improvisations that draws on the musical characteristics of their Focus Area. They develop knowledge of performance practices used by relevant leading musicians and develop skills in aural awareness, theory and analysis. They listen critically to recordings of performances and examine musical scores and use musical terminology to discuss characteristics of works.

School Assessed Coursework unit 3 (contributes 25 percent to the final assessment)
Investigation: Demonstrate understanding of performance practices, context/s and influences on music works. 20%

Performance: Present a performance of music works that communicates understanding of the Focus Area 5%

Unit 4:
In this unit students continue exploring the Focus Area they commenced in Unit 3. Students prepare program notes for their end of year recital, prepare, rehearse and perform works that relate to the Focus Area and create a composition/arrangement/improvisation to perform that draws on the musical characteristics of their Focus Area. They apply advanced performance conventions and instrumental techniques and continue to develop skills in aural awareness, theory and analysis.

School Assessed Coursework unit 4 (contributes 25 percent to the final assessment)
Composition/Improvise/Arrange: Present a composition, improvisation or arrangement of a music work based on Focus Area and report on how the work is representative of their Focus Area 20%

Performance: Demonstrate artistic intent and understanding of the Focus Area in a cohesive and engaging performance of music works 5%

End of year Performance Examination (contributes 50 per cent to the final assessment).
An external exam, a maximum of 25 mins solo performance or 25-40 minutes group performance, held in October/November.
Students will present a live performance of at least 4 contrasting works relating to the Focus Area. At least 1 work must come from the Prescribed List of Works (Solo or Group) published by the VCAA. Students will complete a Focus Statement outlining the chosen Focus Area and how each work relates to this.

MUSIC PERFORMANCE
Music Performance can include both solo and group performance but in units 3 & 4 students are to select either solo or group performance as their focus.

- Music Performance Units 1 & 2
- Music Performance Units 3 & 4

Music Performance is designed to enable students to perform a program of selected works in both solo and group contexts, develop technical skills on their main instrument, skills in aural perception, music theory and analysis, and learn to compose and improvise music using music they learn and analyse. Students will complete parts of this course in their instrumental or vocal music lessons as well as in scheduled music performance classes.

MUSIC PERFORMANCE Units 1 & 2
Unit 1
This Unit focuses on developing skills in performance in solo and group contexts, developing technique on their main instrument, and developing skills in aural comprehension, musicianship and analysis.

Assessment:
• Performance of a prepared program of 3 contrasting works (at least 1 solo and 1 group) Technical assessment on main instrument including (as appropriate) scales, exercises and sight reading or improvisation
• Written report on how the technical work and exercises contribute to the development of the student’s own solo or group performance
• Written, aural and practical tests (aural skills, theoretical skills and rhythm/pitch skills)

Unit 2
This Unit focuses on further developing skills in performance in solo and group contexts, developing technique on their main instrument, and developing skills in aural comprehension, musicianship and analysis. Students also develop a composition folio of original works and arrangements.

Assessment:
• Performance of a prepared program of 3 contrasting works (at least 1 solo and 1 group)
• Technical assessment on main instrument including (as appropriate) scales, exercises and sight reading or improvisation
• Written report on how the technical work and exercises contribute to the development of the student’s own solo or group performance
• Written, aural and practical tests (aural skills, theoretical skills and rhythm/pitch skills)
• Composition folio with accompanying documentation explaining music language used

MUSIC PERFORMANCE UNITS 3 & 4

Unit 3:
This Unit focuses on the preparation and presentation of solo and group works. Students develop instrumental/vocal techniques to develop their interpretation of works in a range of styles. If choosing to focus on solo performance they work with their instrumental teacher to select and prepare a program of solo works. The works selected for study must be selected from the Prescribed List of Notated Solo Works 2012 or the Prescribed List of Group Works 2012 (as appropriate to student focus area) published on the VCAA website. Aural comprehension and musicianship skills are developed and aural analysis of the expressive characteristics of an Australian work created after 1910 is undertaken.

Classes will cover the following components of the course:
1. Performance: performance conventions, strategies for rehearsal and practise, expressive elements, stylistic characteristics, roles of instruments in ensembles, approaches to interpretation by performers.
2. Performance technique: strategies to develop effective practice routines, instrumental techniques, rehearsal techniques and strategies, physical and psychological wellbeing for performers, technical considerations to sound production and reinforcement appropriate to styles.
3. Musicianship: singing, notating, naming and identifying: scales, intervals, chords, melody, rhythm, chord progressions and expressive elements of music

School Assessed Coursework unit 3 (contributes 20 percent to the final assessment)
• Performance of a study or a work with a technical focus; demonstration of prepared technical work and exercises (5 - 10 mins); performance of unprepared material (sight reading - 1 - 2 mins) and report on how the technical work supports the student’s development as an instrumentalist or vocalist and their preparation of their performance works. 10%
• Test on musicianship and aural skills. 10%

Unit 4:
This Unit focuses on the preparation and presentation of solo and group works. Students develop instrumental/ vocal techniques to develop their interpretation of works in a range of styles. With their instrumental teacher, students will select and prepare a program of solo works. The works selected for study must be selected from the Prescribed List of Notated Solo Works 2012 or the Prescribed List of Group Works 2012 (as appropriate to student focus area) published on the VCAA website. Aural comprehension and musicianship skills are developed and aural analysis of the expressive characteristics of an Australian work created after 1910 is undertaken.
Classes will cover the following components of the course:

1. Performance: performance conventions, strategies for rehearsal and practise, expressive elements, stylistic characteristics, roles of instruments in ensembles, approaches to interpretation by performers.
2. Performance technique: strategies to develop effective practice routines, instrumental techniques, rehearsal techniques and strategies, physical and psychological wellbeing for performers, technical considerations to sound production and reinforcement appropriate to styles.

School Assessed Coursework unit 4 (contributes 10 percent to the final assessment)

- Performance of a study or a work with a technical focus; demonstration of prepared technical work and exercises (5 - 10 mins); performance of unprepared material (sight reading - 1 - 2 mins) and report on how the technical work supports the student’s development as an instrumentalist or vocalist and their preparation of their performance works. 10%

End of year Performance Examination (contributes 50 per cent to the final assessment).

An external exam, a maximum of 25 mins solo performance or 25-45 minutes group performance, held in October/November.

Students will present a program of solo or group works from the Prescribed List of Group works/ Notated Solo Works. For solo performance other than piano and guitar the use of a professional accompanist is recommended.

End of year Aural and Written Examination (1½ hrs, November), contributes 20 per cent to the final assessment.

The examination will cover units 3 and 4 Outcome 3 including aural and musicianship skills and aural analysis of Australian works post 1910.

PHILOSOPHY

Philosophy is concerned with issues that go to our most fundamental beliefs about ourselves, the world and our place in it. It deals with big and important questions in a way that is rigorous and disciplined. The course is designed to provide intellectual challenge for students and to develop their thinking/reasoning skills and their ability to communicate complex ideas.

Philosophy introduces the types of argument and analysis used by philosophers in response to fundamental questions that have intrigued humans for thousands of years. Students develop knowledge of key philosophical ideas and engage in philosophical debate about contemporary issues and contemporary life.

Unit 1: Existence, knowledge and reasoning:
This Unit focuses on metaphysics, epistemology, and logic and reasoning. There are three Areas of Study and three Outcomes.

Area of Study 1 - Metaphysics students study at least two topics from a given list of five topics, one of which must be –
Topic 1: Mind and body, or
Topic 2: Self and identity

Area of Study 2 - Epistemology students study at least two topics from a list of five, one of which must be
Topic 1 - Knowledge and justification

Area of Study 3 - Introduction to logic and reasoning
A range of key terms associated with philosophical reasoning are outlined in the key knowledge. The key skills emphasise analysis of argument and the use of appropriate terminology when undertaking analysis and evaluation.

Unit 2: Ethics and philosophical investigation:
Unit 2 consists of a study of ethics and one other specialist topic.
Area of Study 1 - Ethics Meta-ethics, normative ethics and applied ethics are the topics given for study and students are introduced to all three.

Area of Study 2 - Other great questions in philosophy In this area of study students investigate one of four specialist topics: either Aesthetics, Philosophy of religion, Political philosophy or other traditions of thought.

Area of Study 3 - Techniques of reasoning

The study of logic and reasoning has been expanded in Unit 2 to include a range of more sophisticated key terms and patterns of good and bad reasoning. The key skills include the ability to recognise and describe errors of reasoning.

Assessment for both Units 1 and 2 comprises:

- A philosophical essay
- A philosophical dialogue
- Philosophical reflections as part of an ongoing journal
- Short answer responses and discussion activities undertaken in class

Unit 3: The good life:
The Unit has three areas of study and three outcomes.

Area of Study 1 - Critical analysis of philosophical views on the good life.

This Area of Study focuses on the analysis and evaluation of the set texts. The historical and philosophical context of the set texts is a component of the key knowledge for Outcome 1.

Area of Study 2 - Critical comparison of philosophical views on the good life

Students undertake a critical comparison of the similarities and differences between the arguments and viewpoints related to the good life in the set texts.

Area of Study 3 - Analysis and critical comparison of philosophical and other ways of thinking about the good life

The focus of this Area of Study is critical analysis and evaluation of viewpoints and arguments on the good life occurring in sources beyond the set texts. It includes using the set texts, outside sources, personal experience and contemporary debates to develop critical reflections on the good life. It also requires students to use the set texts to inform responses to debates on the good life occurring in sources beyond the set texts.

Unit 4: Mind, science and knowledge:

There are two Areas of Study and two Outcomes for the Unit.

Area of Study 1 - The nature of mind and body

The key knowledge and skills explicitly include criticism, historical and contemporary contexts, critical comparison of set texts and analysis and evaluation in the context of contemporary debates.

Area of Study 2 - Knowledge, belief and science

The key knowledge and skills explicitly include criticism, relevant historical and contemporary contexts, a study of inductive and deductive reasoning and analysis and evaluation of arguments concerning the nature of knowledge in the context of contemporary debate.

PHYSICAL 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.
Area of study 1

Body systems and human movement
In this area of study students examine the systems of the human body and how they translate into movement. Through practical activities they explore the major components of the musculoskeletal, cardiovascular and respiratory systems and their contributions and interactions during physical activity.

Area of Study 2

Biomechanical movement principles
In this area of study students examine biomechanical principles underpinning physical activity and sport. Through their involvement in practical activities, students investigate and analyse movements in a variety of activities to develop an understanding of how the correct application of biomechanical principles leads to improved performance.

Area of Study 3

Two detailed studies are available in Unit 1. One detailed study is to be selected from:
- Technological advancements from a biomechanical perspective
- Injury prevention and rehabilitation.

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.

Area of Study 1.

Effective coaching practices
In this area of study students focus on the roles and responsibilities of a coach as well as looking at coaching pathways and accreditation. The effectiveness of a coach may be determined by their style, skills and behaviours. A coach must have an understanding of skill learning practices and interpersonal skills if they are to develop and enhance the performance of athletes.

Area of Study 2.

Physically active lifestyles
This area of study focuses on the range of physical activity options in the community. Health benefits of participation in regular physical activity and health consequences of physical inactivity and sedentary behaviour are explored at individual and population levels. Students explore the dimensions of the National Physical Activity Guidelines and investigate the current status of physical activity and sedentary behaviour from an Australian perspective.

Area of Study 3

Two detailed studies are available in Unit 2. One detailed study is to be selected from:
- Decision making in sport
- Promoting active living.

Unit 3: Physiological and participatory perspectives of physical activity.
This unit introduces students to an understanding of physical activity from a physiological perspective. The contribution of energy systems to performance in physical activity is explored, as well as the physiological effects of muscular fatigue and recovery. Students also examine the health benefits to be gained from participation in
regular physical activity. They study and apply various models to identify strategies that will be effective in promoting participation in physical activity.

**Area of Study 1: Monitoring and promotion of physical activity.**
Students use subjective and objective methods to monitor their own and population groups’ activity levels. They investigate physical activity promotion and evaluate strategies that promote adherence to the National Physical Activity Guidelines.

**Area of Study 2: Physiological requirements of physical activity.**
Students examine the way in which energy for activity is created through oxygen and food supplies. They also consider the physiological effects of muscular fatigue and recovery times.

Assessment: There are four written assessment tasks for Unit 3, one of which is based on a practical laboratory activity.

**Unit 4: Enhancing physical performance.**
This unit focuses on improvements in performance based on assessment of the specific energy and fitness needs of a particular sport or activity. Students consider the manner in which fitness can be improved by the application of training principles and methods, and participation in activity data collection, fitness testing and training. Students also identify dietary strategies that combine with appropriate recovery and risk management systems to enhance performance and recovery.

**Area of study 1: Planning, implementing and evaluating a training program**
This area of study focuses on the components of fitness and assessment of fitness from a physiological perspective. Students consider the manner in which fitness can be improved by the application of appropriate training principles and methods. Students conduct an activity analysis of an elite athlete to determine the fitness requirements of a selected sport. They participate in fitness testing and an individual training program and evaluate this from a theoretical perspective.

**Area of Study 2: Strategies for enhancing sports performance.**
Students examine a range of factors, both physical and psychological, and strategies that influence performance and limit performance in physical activities. Strategies such as appropriate training implementation, recovery regimes, dietary procedures and risk management are examined. While the focus of performance enhancing practices is on legal strategies, students consider the ethical considerations of both legal and illegal practices.

Assessment: There are four written assessment tasks for Unit 4, two of which are based on the students’ practical involvement in activity data collection, fitness testing and training.

**PHYSICS**

Physics is a human endeavour in which observations and ideas about the physical world are organised and explained. Students learn about the use of conceptual models to describe and explain observed physical phenomena. These models are developed within the contexts that are familiar to students and relevant to their experiences.

**Unit 1**
Ideas in physics are dynamic. As physicists explore concepts, theories evolve. Often this requires the detection, description and explanation of things that cannot be seen. In this unit students explore how physics explains phenomena, at various scales, which are not always visible to the unaided human eye. They examine some of the fundamental ideas and models used by physicists in an attempt to understand and explain the world. Students consider thermal concepts by investigating heat, probe common analogies used to explain electricity and consider the origins and formation of matter.

Students use thermodynamic principles to explain phenomena related to changes in thermal energy. They apply thermal laws when investigating energy transfers within and between systems, and assess the impact of human use of energy on the environment. Students examine the motion of electrons and explain how it can be manipulated and utilised. They explore current scientifically accepted theories that explain how matter and energy have changed since the origins of the Universe.
Unit 2
In this unit students explore the power of experiments in developing models and theories. They investigate a variety of phenomena by making their own observations and generating questions, which in turn lead to experiments. Students make direct observations of physics phenomena and examine the ways in which phenomena that may not be directly observable can be explored through indirect observations. In the core component of this unit students investigate the ways in which forces are involved both in moving objects and in keeping objects stationary. Students choose one of twelve options related to astrobiology, astrophysics, bioelectricity, biomechanics, electronics, flight, medical physics, nuclear energy, nuclear physics, optics, sound and sports science. The option enables students to pursue an area of interest by investigating a selected question.

Units 3 & 4
Unit 3
1. Motion in one and two dimensions – the Newtonian model will be used in the contexts of transport and safety on Earth, and motion in space. The students will use this model in one and two dimensions to describe and explain transport motion and related aspects of safety, and motion in space.
2. Electronics and photonics – devices and systems in domestic and industrial contexts will be examined so that students can compare and explain the operation of these devices and analyse their use in domestic and industrial systems.

Unit 4:
1. Interactions of light and matter – evidence about the interactions of light and matter in the contexts of models and explanations will be used. The students will then use wave and photon models to explain interactions of light and matter and the quantised energy levels of atoms.
2. Electric power – evidence and models of electrical, magnetic and electromagnetic effects will be used in order to apply and explain in the contexts of electric motors, alternators and transformers, and electric power transmission and distribution.
3. Detailed study - One detailed study is to be chosen from six detailed studies in either Unit 3 or Unit 4. The detailed study is to be selected from:
   - Einstein’s special relativity
   - Materials and their use in structures
   - Further electronics
   - Synchrotron and its applications
   - Photonics
   - Sound

PSYCHOLOGY
Psychology is the scientific study of mental processes and behaviour in humans. It is designed to enable students to develop an understanding of biological, behavioural, cognitive and socio-cultural approaches that psychologists use. It also enables students to develop skills in research methods and to gain an appreciation of ethical considerations.

Unit 1
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. Students examine the contribution that classical and contemporary studies have made to an understanding of the human brain and its functions, and to the development of different psychological models and theories used to predict and explain the development of thoughts, feelings and behaviours.

Unit 2:
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. They examine the contribution that classical and contemporary research has made to the understanding of human perception and why individuals and groups behave in specific ways.

Units 3 and 4
The Course includes two semesters. The focus for each semester is listed below. Throughout all areas of study students will develop the skills of research investigation. This will involve learning about different methods and aspects of research and undertaking psychological experiments in class to discover how we carry out experiments in psychology. The ethical aspects of research are also studied.

Unit 3:
• The role of the brain and biology in Psychology – the human nervous system, including the structure of the brain and how different areas of the brain are responsible for different behaviours. The study includes brain research methods and investigation of brain injury and its consequences.
• States of Consciousness – what happens to us when we are awake and asleep; dreams, nightmares and sleep problems.
• Memory – What is memory? Are there different types of memory? The course investigates how memories are processed, stored and retrieved as well as the theories of how and why we forget.

Unit 4:
• Learning – We investigate the different types of learning (classical conditioning and Pavlov’s dogs; operant conditioning and Skinner’s rats and pigeons; observational learning and Bandura’s Bobo doll experiments).
• Mental Health and Mental Illness – students will investigate the meaning of mental health and the systems of classification of mental conditions and disorders. There will be specific study of mental illnesses concerned with stress, anxiety, phobias, depression, addiction and schizophrenia.

VISUAL ARTS: ART, STUDIO ARTS & VISUAL COMMUNICATION DESIGN

ART
VCE Art is designed to encourage artistic development through personal and independent exploration. It encourages students to explore ideas and to demonstrate effective working methods and a range of technical skills through a process of investigation and experimentation. Students may work in one or more of a range of studio forms – including drawing, photography, painting, printmaking, computer arts, sculpture/installation, textiles and fashion/garment construction, mixed media and others as so desired by the student.

The study also aims to equip students with the ability to respond to art in an informed and articulate manner by applying the Analytical Frameworks – Formal, Personal, Cultural and Contemporary Frameworks as set out in the Art Study Design.

With the acquisition of technical and analytical skills, personal involvement and critical study, students should build an ability to interpret art and to discuss and debate the ideas and issues which it raises.

Unit 1
Area of Study 1: Art and Meaning
Area of Study 2: Artmaking and Personal Meaning

Unit 2
Area of Study 1: Art and Culture
Area of study 2: Artmaking and Cultural Expression

Unit 3
Area of Study 1: Interpreting Art
Area of Study 2: Investigation and Interpretation through Artmaking
Unit 4
Area of Study 1: Discussing and Debating Art
Area of Study 2: Realisation and Resolution

In each of these units, students prepare a visual diary of developmental work, folio of final artwork(s) and an essay or report. Units 3 and 4 also include a written end of year examination. Further detail of each of the tasks in the units is available from the Art Department.

STUDIO ARTS

VCE Studio Arts allows students to specialize in a particular form of studio production (such as photography, and establishes a framework for the establishment of effective art practices through an understanding and application of the design process. Students generate, explore and communicate ideas through specific studio forms and develop and use specialized skills in a range of media and techniques. The theoretical component of the study informs students’ practice through an investigation of how selected studio forms have developed an examination of artists’ working methods and a study of professional practices and art industry issues.

Unit 1: Artistic Inspiration and Techniques
- Area of Study 1: Developing Art Ideas
- Area of Study 2: Materials and Techniques
- Area of Study 3: Interpretation of Art Ideas and Use of Materials and Techniques

Unit 2: Design Exploration and Concepts
- Area of Study 1: Design Exploration
- Area of Study 2: Ideas and Styles in Artworks

Unit 3: Studio Production and Professional Art Practices
- Area of Study 1: Exploration Proposal
- Area of Study 2: Design Process
- Area of Study 3: Professional Art Practices and Styles

Unit 4: Studio Production and Art Industry Contexts
- Area of Study 1: Folio of Artworks
- Area of Study 2: Focus, Reflection and Evaluation
- Area of Study 3: Art Industry Contexts

In Units 1 and 2, students prepare folios and written presentations. In Unit 3, students prepare a work brief, a developmental folio and a written report; In Unit 4, a folio of finished art works and a written report form the unit’s assessment. Units 3 and 4 also have an end of year examination requiring written responses.

Please Note: This course is designed specifically for students who have advanced skills in their chosen medium and who wish to apply for practical arts courses.

VISUAL COMMUNICATION DESIGN

The study of Visual Communication Design can provide pathways to training and tertiary study in design and design-related studies, including graphic design, industrial and architectural design and communication design.

Students employ a design process to generate and develop visual communications. The design process provides a structure to organise design thinking and is shaped by considerations of aesthetics and functionality, as well as social, environmental and economic factors.

Students have the opportunity to investigate the work and practices of Australian and international designers from a variety of social, cultural, historical and contemporary contexts.

The Visual Communication Design study examines the way visual language can be used to convey ideas, information and messages in the fields of communication, environmental and industrial design. Designers create and communicate through visual means to shape the everyday quality of life for individuals, communities and
societies. Visual communication design relies on drawing as the primary component of visual language to support the conception and visualisation of ideas. Consequently, the study emphasises the importance of developing a variety of drawing skills to visualise thinking.

Unit 1: Introduction to visual communication design
In this unit students are introduced to three stages of the design process, researching designers, generating ideas and applying design knowledge and drawing skills to develop concepts.

Unit 2: Applications of visual communication design
This unit focuses on the application of visual communication design knowledge, design thinking skills and drawing methods to create visual communications to meet specific purposes in designated design fields.

Unit 3: Design thinking and practice
In this unit students gain an understanding of the process designers employ to structure their thinking and communicate ideas with clients, target audiences, other designers and specialists.

Students use their research and analysis of visual communication designers to support the development of their own work. They establish a brief and apply design thinking skills through the design process.

Design from a variety of historical and contemporary design fields is considered by students to provide directions, themes or starting points for investigation and inspiration for their own work.

Unit 4: Design development and presentation
The focus of this unit is the development of design concepts and two final presentations of visual communications to meet the requirements of the brief. This involves applying the design process twice to meet each of the stated needs.