

Senior School Handbook 2023

OUR VISION

The Lowanna College community is committed to high expectations and believes students will achieve excellence in their endeavours.



Guide to Senior School

Welcome to Senior School

During the senior years of education, our sense of self grows rapidly, and we become acutely aware of all the varied opportunities that study and life offer. As you approach your final years at Lowanna College, do so with the confidence that your teachers understand the particular nature of the senior years of schooling and strive to ensure that these transitional years to adulthood are rich and fulfilling.

The final years of secondary school present some wonderful opportunities to explore subjects and pathways that students find particularly engaging. No other student will necessarily choose the same combination of subjects as you.

Our pursuit is your pursuit – we hope that you will achieve all you are capable of achieving and do so within an environment that is nurturing and supportive. We recognise you as the individuals you are and the adults you are becoming. Both academically and as individuals, we look forward to supporting and guiding you through these years and ultimately leading you to the next phase in your life.

The College, along with your parents or guardians and wider community, will direct its efforts to ensure that these will be years you will remember with great pride and personal satisfaction. The coming years, with their challenges and possibilities, present an

opportunity for all young adults to thrive and we encourage you to embrace them with enthusiasm and hope.

The Senior School of the College offers:

- ▶ A commitment to excellence—both academic and practical
- ▶ A caring environment concerned with the welfare of all students
- ▶ Experienced and committed staff
- ▶ A commitment to providing equal opportunity to all students
- ▶ State of the art facilities
- ▶ Close links with Federation Training, Community College Gippsland (CCG) and other Registered Training Organisations (RTOs), especially in the delivery of VET courses.
- ▶ A work placement program for VCE-VM
- ▶ Career Action Plans
- ▶ Counselling in relation to tertiary study requirements and opportunities to visit Universities and TAFE Colleges
- ▶ Opportunities to engage with the Headstart program

This booklet is designed to provide you with information so you will be able to develop a program which best suits your needs and aspirations.

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The Senior School Team

The current Senior Coordination team is made up of five members. The team is responsible for the development of student programs, monitoring student progress, student welfare and links to the VCAA, VQA and other providers and industry. All members of the team are available to assist and should you need any information or advice, please ask.



Fiona Milkins
Assistant Principal
Senior Outcomes



Nicole Taylor
Senior School Leader



Julie Jeffrey
Administration Assistant



Sarah Giessler
Coordinator



Norman Trewin
Coordinator



Grace Wilson
Student Advocate

Planning & Selecting your Course

The information in this handbook is designed to help Year 10 and Year 11 students and their parents make appropriate and informed choices about VCE units and program selection for 2023. Selecting preferences for Year 11 or 12 is an exciting time. With the range of choices available, the possible career options and personal interests can also make it feel a little daunting.

Students select a program over two or three years that satisfies the requirements of the Victorian Curriculum Assessment Authority (VCAA). There is provision for students to take longer to complete their studies and to change direction during that time. Students need to be aware of choosing a meaningful course of study, which will provide pathways into further study and employment.

When selecting subjects, students should carefully check pre-selection requirements for any courses or career paths they may be considering. All students should check the current VTAC Guide and the publications on university and TAFE entrance requirements before making final selections. The following questions should also help guide subject choices:

- Am I interested in this study?
- Is it a study containing the right level of difficulty for me?
- Do my teachers and parents think it is a wise choice?

The good news is that by making a choice now, you are not bound to it for life. So relax and think about what you like, are good at and what field of study or work you are interested in pursuing. Keep in mind there are no tricks to getting a good ATAR. The ATAR represents your overall performance across all studies, not individual subjects. To get a good ATAR, you should therefore pick subjects that interest you and in which you can perform well.

Subjects will only run if there is sufficient demand from students. The feasibility of a class running is dependent on many variable constraints: the timetable, the minimum class size and the physical and human resources available at the College. Many of these issues cannot be dealt with until late in the year when results are known and the program for the rest of the College is determined. We will always endeavour to satisfy the choices and requirements of as many students as possible. Unfortunately, there can be situations where students may not receive their first choice of subject.

Take time to select your subjects as you enter Year 11, as this will form the basis for your studies for the next 2 years. Think about your areas of passion. Success is about reaching your goal and not giving in. Whatever your dream is, it requires hard work and dedication to make it happen. In most cases you will need to plan and, most importantly, have a number of options just in case. While there are no guarantees, there are some things you can do to make sure you get the most out of your program:

- use your teachers and school as a resource
- ask questions, seek and apply feedback
- be consistent, planned and purposeful in your study and homework

We have trained course counsellors who meet with Year 10 students and their families to ensure each student is well informed when making subject choices. Our advice is for students to select subjects they have a passion for and also any subjects that are prerequisites for particular career pathways they are interested in pursuing in the future. If choices are made with these criteria in mind then students are more likely to discover career pathways that are very rewarding.

We pride ourselves on supporting students in achieving excellent learning outcomes. We are committed to ensuring every student is supported in their final years of schooling to help them pursue their future pathway.

Where to get information

Where to get information

CAREERS ADVICE:

Available from the Lowanna College Careers Resource Centre (Room A10)
Telephone: 5127 9225

‘WHERE TO NOW’ BOOKLET:

Hard copy provided to all Year 10 students.
Also available to everyone as a digital download:
<https://www.vcaa.vic.edu.au/Documents/wtn/2023WhereToNow.pdf>

LOWANNA COLLEGE WEB SITE:

www.lowanna.vic.edu.au
Various information sources including the Senior School Handbook

VTAC GUIDE:

Tertiary and TAFE course listings for Victoria
www.vtac.edu.au - go to course link

ENTER INTO TERTIARY COURSES:

VTAC Publication — See the careers team (calculating your ATAR and subject scaling) about this publication.

VCAA WEB SITE:

www.vcaa.vic.edu.au, Ph 03 9651 4357

JOB GUIDE:

Available from Lowanna College Careers Resource Centre



Planning & Selecting your Course

Subject Selection

The subject selection process at Lowanna College supports students and their parents and guardians to make informed choices in selecting subjects. This process is testament to our commitment to work in collaboration with parents, guardians and students.

Checklist

- Here are some important questions to consider when selecting preferences for subjects:
 - What are you good at and what do you like to do?
 - Are you clear about the things that interest you both at school and outside school?
 - Do you know the areas of your studies where you perform well and achieve good results?
 - Do you understand the role of the VCAA and VTAC and how they affect you?
 - Are you clear about what the ATAR is and how it is used for tertiary entry?
 - Are you aware of the various options available for senior student programs, including VCE, VET and VCE-VM?
 - Do you know where you can access

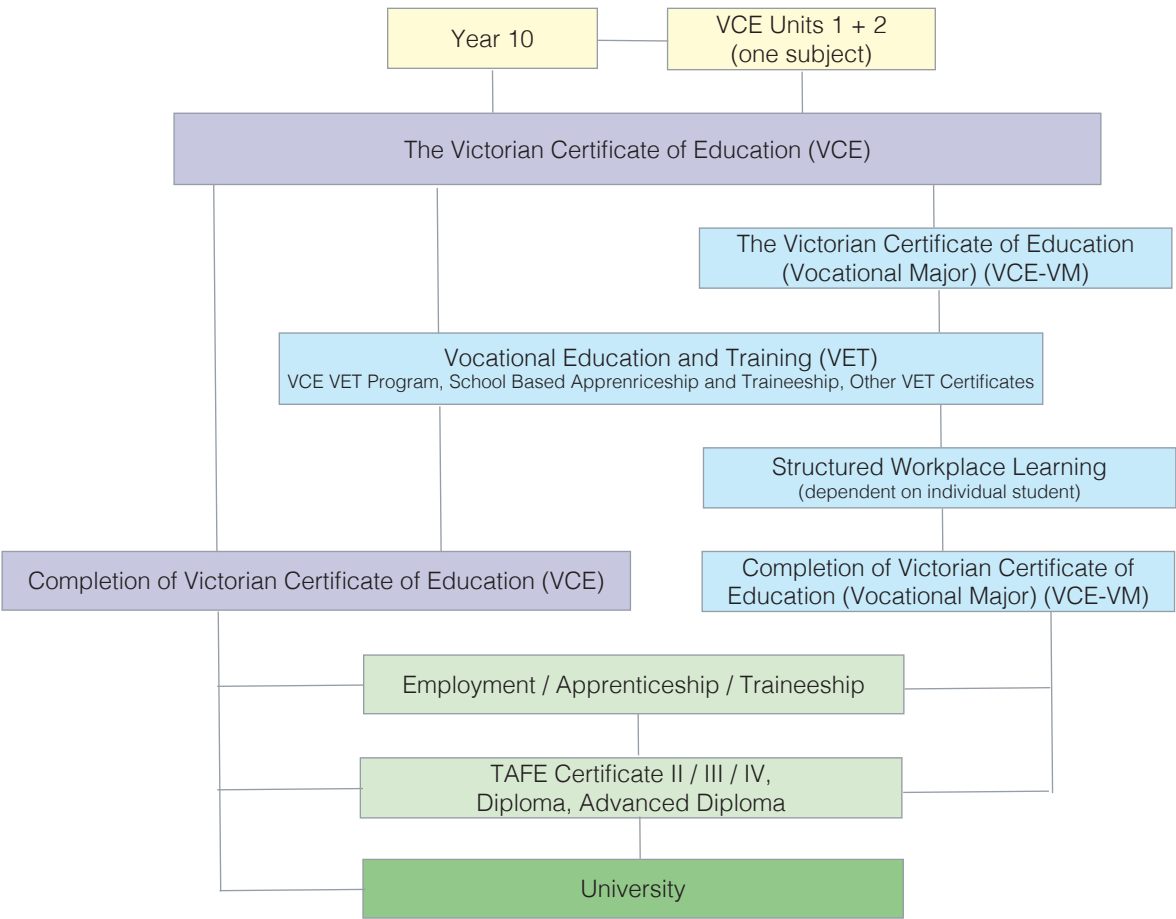
- specialist advice about a study program should you need to?
- What outside-of-school commitments (sporting, musical, academic) do you have that you need to consider when making your selection?
 - Compile a list of the areas that you are interested in pursuing in your senior study program. Include in this list the jobs or careers that interest you, subjects that you are good at, and areas that are of interest to you. Your 'Morrisby Report' will help with this.
 - Investigate The Good Careers Guide online to examine jobs that interest you and possible career paths that appeal to you. Make a list of these careers and the skills they require, including any special requirements that relate to training or education.
 - Read the section of this handbook that contains details of the subjects offered by the College and also VET and VCE-VM offerings. Read the *Where to Now?* booklet to clarify the different pathways that are possible.
 - Use Course Search – accessible through the VTAC website (www.vtac.edu.au) – to check the course requirements for courses that you are interested in taking post school. In particular, note down any restrictions on subjects you need to take, levels of

- performance required, or any special entrance requirements such as interviews or the preparation of folios, etc.
- Discuss your proposed pathway with your parents and teachers. Make sure that you are clear that this is the pathway you wish to pursue, and are fully informed about what you need to do to be successful in pursuing this option.
 - Complete the subject preferences form and submit it on time.

Students will undertake Head Start, during which time they will commence work for their subjects in the following academic year.

Please note: any requests for subject changes must be made by the end of the first week of classes in 2023. These requests must be made to the Senior School Leader. Please also note that subject changes may be limited due to timely enrolments and timetable constraints.

Lowanna College Student Pathways



Managing Your Study Time

There are only so many hours in a day, a week, and a term. You cannot change the number of hours, but you can decide how to best use them. To be successful in school, you must carefully manage your study time.

Here is a strategy for doing this.

- ▶ At the beginning of a term, prepare a Term Calendar. Update it as the term goes on.
- ▶ Record your school assignments with their due dates and your scheduled tests.
- ▶ Record your planned school activities.
- ▶ Record your known out-of-school activities.
- ▶ Each Sunday before a school week, prepare a Weekly Schedule. Update it as the week goes on.
- ▶ Enter things to be done for the coming week from your Term Calendar.
- ▶ Review your class notes from the previous week to see if you need to add any school activities.
- ▶ Add any out-of-school activities in which you will be involved during the week.
- ▶ Be sure to include times for completing assignments, working on projects, and studying for tests. These times may be during the school day, right after school, evenings, and weekends.

Each evening before a **school day**, prepare a **Daily Organiser** for the next day. Place a ✓ next to each thing to do as you accomplish it.

- ▶ Enter the things to do for the coming day from your Weekly Schedule.
- ▶ Enter the things that still need to be accomplished from your Daily Organizer from the previous day.
- ▶ Review your class notes for the day just completed to see if you need to add any school activities.
- ▶ Add any out-of-school activities in which you will be involved the next day.

Your Weekly Schedule should have more detail than your Term Calendar. Your Daily Organiser should have more detail than your Weekly Schedule. Using a Term Calendar, a Weekly Schedule, and a Daily Organiser will help you make the best use of your time.

For further study tips visit:
www.how-to-study.com

SAMPLE EXAM STUDY TIMETABLE

Remember to include details from your personal schedule (classes, meal breaks, leisure time, sporting commitments, part time work, etc.) first, and then build your study timetable around this.

Time	Mon	Tue	Wed	Thu	Fri	Sat	Sun
9-10am							
10-11am							
11- 12pm							
12- 1pm							
1-2pm							
2-3pm							
3-4pm							
4-5pm							
5-6pm							
6-7pm							
7-8pm							
8-9pm							
9-10pm							

Your success as a Senior School student will be related to many factors:

- ▶ Managing your time effectively to provide for study and for personal interests.
- ▶ Setting attainable work and study goals.
- ▶ Readiness to discuss work-related problems with your teachers.
- ▶ Promptly seeking the assistance of your Coordinator when difficulties arise. The VCE and VCE-VM have procedures to assist students encountering physical, medical, psychological and domestic traumas. Special provision can include time extensions to complete work and in some cases, complete alternate tasks.

A VCE student who is prepared to work consistently at school and at home will succeed. Students will receive advice and assistance in time management and study techniques throughout the year. Coordinators are always available to assist students who experience study or time management problems.

By being a well-organised student, you will be able to pursue personal interests and at the same time be a successful student.

All students will have discussions about their pathways and access to advice.

All VCE units have a number of learning outcomes, all of which must be demonstrated to succeed. The experience of students shows that sensible goals must be set to meet deadlines. Students must expect to work consistently at school and at home to meet all learning outcomes. Home study must be planned and organised.

As a general rule, students in the senior school are recommended to commit to the following guidelines on homework:

- two and a half to three hours per night for Unit 1 & 2 subjects,
- three to four hours per night for Unit 3 & 4 subjects

Ideally, students will spend no more than 10 hours per week in employment in order to allow them to maintain balance in their lives.

Additional Programs

Head Start

What is Head Start?

Head Start is an Apprenticeship and Traineeship pathway for school students allowing them to combine their traditional school education with paid, on-the-job training. This allows students to develop skills employers need in growing industries.

Head Start students leave secondary school with their VCE or VCE-VM and an Apprenticeship or Traineeship.

The Benefits of Head Start?

Head Start students are supported to grow into skilled Apprentices and Trainees who have the literacy and numeracy skills and on the job experience that employers seek.

Employers and students are supported by Head Start Coordinators over the whole apprenticeship

or traineeship.

Employers are committed to providing genuine, long-term employment opportunities to young people who want to complete both their apprenticeship/traineeship and their VCE/VCE-VM.

Students receive professional career planning advice from their school career practitioner, get the opportunity to discuss it with family and weigh up if it is the right career pathway for them, before signing up to a Head Start apprenticeship or traineeship.

A Head Start student receives;

- ▶ More time on the job in areas of industry demand.
- ▶ Employer support for students to complete their VCE or VCE-VM, as well as their apprenticeship or traineeship.
- ▶ Payment of a fair training wage.
- ▶ Quality training through Victorian TAFE or Skills First Registered Training Organisations.

- ▶ Strong support for the life of their apprenticeship or traineeship.

Further Information?

For further information, call Jessica Croft, Head Start Co-Ordinator, Inner Gippsland on

0498 448 412 or email

jessica.croft@education.vic.gov.au



Advance to University (ATU)

In partnership with Federation University, high-performing students may study first-year university units as part of their VCE program.

How it works

- Choose from a range of paired university units, including business, health, education, maths, physiology, biology and information technology.
- Your final score in your Advance studies (two units) may result in an additional ATAR increment.
- There is no Higher Education Contribution Scheme (HECS) debt incurred for any of the university units you study. You may need to factor in costs for textbooks and other learning resources depending on the units chosen.

- Successful completion provides entry to Federation University and credit for both subjects in your first year of study. Entry to some courses may also be subject to additional requirements (e.g. ATAR, VCE pre-requisites).
- Each unit is delivered via flexible online learning, alongside an on-campus orientation session and a number of on-campus enriched learning experiences each semester.
- Students attend an academic preparation program in February, before commencing university studies in March.

What would make you a good candidate?

- Aspiration to enter tertiary education
- Time management
- Great communication
- Problem solving
- Independent learning skills
- Planning and organisation skills

Further Information?

For additional details including necessary VCE pre-requisites/co-requisites visit:

www.federation.edu.au/advance-to-university



Federation University

Sports Academy

Students can apply to participate in the Sports Academy as an extracurricular program. This is a specialist program and incurs additional fees.

The program aims to:

- Provide diverse sporting and career pathways for students involved in the SEP to meet their needs and develop their potential.
- Students who want to optimise their education with a balance of sport and academics.
- To develop strong partnerships in peak sporting organisations and related sports industries.
- To promote a “culture of excellence” with focus on academic, personal and sporting development

Some of the topics covered include:

Individual/team skill coaching, fitness testing, skill and game analysis, game strategies, individual skill practice and development, strength and conditioning, coaching and umpiring (rotating every year), rehabilitation & sports injuries, nutrition for sport performance and recovery, fitness training methods. Due to the complexity of the timetable and selection process, interested students/families are encouraged to seek further information from their mini school.

Year 11-12

Students who are successful in gaining entry to the program will receive:

- individualized strength and conditioning training programs. These will take place both at school and at Voyage Gym (membership included in program fee)
- before school skills training session
- weekly skills session
- excursions
- guest speaker sessions
- nutritional consults.

Sports Academy students will have daily check ins with key staff during home group time. Students in the program must maintain a suitable academic standard to remain in the program.

Sample study program for:

Physical Education - Recreation

A traditional course. Each tertiary institution has their own criteria, make sure you seek advice from your careers teacher.

Subject	Units			
	1	2	3	4
English	×	×	×	×
Biology	×	×	×	×
Physical Education	×	×	×	×
Outdoor Education	×	×	×	×
Health	×	×	×	×
Additional Unit	×	×		

Recommended additional units:

Design & Technology, Science, Maths, Accounting, History, Economics, Legal Studies, Computing, Informatics, Business Management, Industry & Enterprise.

TAFE

Certificate/Diploma courses in:

Fitness Instruction, Travel Operations, Beauty Therapy, Tourism

UNIVERSITY

Associate Diplomas/Bachelor Degrees in:

Recreational Leadership, Human Movement, Applied Science, PE, Outdoor Education, Parks & Recreation, Tourism, Education

Possible employment outcomes after TAFE/

University:

Teaching, Recreation, Sports Administration, Parks & Wildlife, Youth Work, Ambulance Service, Sports Psychology, Journalism.



Victorian Certificate of Education (VCE)

The VCE is governed by the Victorian Curriculum and Assessment Authority (VCAA) which is responsible for the curriculum, assessment and reporting of both the Victorian Certificate of Education (VCE) and the Victorian Certificate of Education Vocational Major (VCE-VM).

For further information, refer to the VCAA website: www.vcaa.vic.edu.au

Curriculum

VCE studies are made up of semester length units, representing approximately 100 hours of work of which 50 to 60 hours are class time. Each study (subject) offers a sequence of four units, which are generally delivered as one unit in each of four semesters over two years.

Students at Lowanna College usually study twelve Units 1 & 2 in Year 11 and ten Units 3 & 4 in Year 12. Over the two VCE years, students will aim to complete a total of 22 units from a range of studies.

Units 3 & 4 must be studied as a sequence and have external assessments and exams, while Units 1 & 2 are assessed within the college. All studies are designed in such a way that some Units 3 & 4 sequences can theoretically commence without prerequisites. However, a sound study background in a particular area will assist with VCE units.

Staff will offer advice to students/parents/carers at the end of Year 11 about subject choices for Units 3 & 4, based on their Units 1 & 2 results and prerequisites for some subjects.

To be awarded the VCE Certificate:

The minimum requirement for a student's program for the award of the VCE is satisfactory completion of 16 units which include:

- Three units from the English group (see below) which must include a Unit 3 & 4 sequence.
- Three sequences of Units 3 & 4 studies other than English, which can include VCE VET Unit 3 & 4 sequences
- There are different requirements for the Vocational Major stream (see p. 11).

English requirements

- A minimum of four units of English may be selected from English Units 1 – 4 or Literature Units 1 – 4.
- An English sequence will count as a sequence other than English when (a) it is additional to a student satisfying three units from the English group, or (b) the student has satisfied more than one sequence from the English group.
- Students choosing Literature are strongly recommended to complete English as well.

Unit Outcomes

Each VCE unit includes a set of two to four outcomes. These outcomes must be achieved for satisfactory completion of the unit.

Achievement of the outcomes is based on the teacher's assessment of the student's performance on assessment tasks, class work, homework and other activities designated for the unit.

Satisfactory completion of units is determined by the school, in accordance with the Victorian Curriculum and Assessment Authority requirements. Students will receive information regarding assessment and other activities at the beginning of the unit.

Assessment of VCE Units 3&4

All studies have both school assessment and examination(s). There are three assessments reported as grades (A+ to E satisfactory; UG unsatisfactory) for each study.

► School Assessed Coursework (SACs)

School assessed coursework is made up of a number of assessment tasks that are specified in the study design. These assessment tasks are used to assess the unit learning outcomes.

- Assessment tasks are part of the regular teaching and learning program.
- Tasks must be completed mainly in class time.
- Tasks are to be completed in a limited time frame.

► School Assessed Tasks (SATs)

A small number of studies have school assessed tasks (SATs). In 2023, Product Design and Technology, Food Technology, Creative Art Practice and Systems Engineering have SATs.

► Determining and reporting grades

Students' scores will be determined from the rankings given by their teacher on a set of assessment and performance criteria specified by the VCAA.

To ensure that schools' assessments are comparable throughout the state; schools' scores for school assessed tasks and coursework in Units 3 & 4 are moderated using the General Achievement Test (GAT), and if necessary the assessments will be reviewed by VCAA. Students and their parents/carers should be aware that if a student fails to meet the outcome for a task on the first attempt, the student will be allowed to sit for a re-sit task within the following two weeks after school. Students can only sit one re-sit per unit (subject) except in cases of special consideration as approved by the Senior School Leader. If the task is one which is graded, the original grade cannot be altered; only the N (Not Satisfactory) can be changed to an S (Satisfactory) for the unit if the student achieves the stated outcomes on the second attempt.

► Examinations – Units 3 & 4

In 2023 all externally assessed written examinations will be conducted in late October/ November.

Performance/oral examinations are held in October. Grades for all examinations are determined by VCAA. Final results for Units 1- 4 are issued in December. Please note that in 2023 students studying the Vocational Major at the Units 3 & 4 level will complete the GAT but will not complete external examinations.

► Study Scores

In order to qualify for a Study Score, a student must have satisfactorily completed Units 3 & 4 in that study.

Students' overall achievements for each study will be calculated by VCAA and reported as a Study Score (Relative Position) on a scale of 0 to 50. The Study Scores are used to determine the ATAR (Australian Tertiary Achievement Ranking) for the student (if the student has satisfactorily completed their VCE and has applied for a tertiary course through VTAC).

Vocational Education and Training (VET)

VET programs are fully integrated into the VCE. This means that they are independent studies at Units 1, 2, 3 and 4 levels and also form a compulsory part of the Vocational Major pathway. Students are able to include a VET Unit 3 & 4 sequence as one or more of the three studies other than English needed to gain their VCE.

Full VCE study scores are available for VCE VET Units 3 & 4. Some VCE VET results contribute directly to the calculation of the ATAR. Other VET courses may contribute as an increment (5th or 6th subject).

Scored VCE VET studies have two Graded Assessments for each Unit 3 & 4 sequence.

Tertiary Entrance

The tertiary entrance requirements change annually and students/parents/carers need to check that details are appropriate to the year they will seek entry to tertiary courses. Year 10 students should check the Prerequisites for 2025 Tertiary Entrance Requirements published in the daily papers in July/August 2022 or make an appointment with a member of the College Careers team.

The Australian Tertiary Admission Rank (ATAR)

The ATAR is calculated by adding together the student's study score in English study plus the three next best study scores (the 'primary four') and then adding 10% of the score obtained for a maximum of two other studies in Units 3 & 4. Completion of a higher education study (e.g. Advance to University) can count as an increment only.

Victorian Certificate of Education (VCE)

NOTE: Victorian Tertiary Admissions Centre (VTAC) advises that for the calculation of a student's Australian Tertiary Admission Rank (ATAR), satisfactory completion of both Units 3 & 4 of an English sequence is also required. Students who do a first year university study at Year 12 will have demonstrated their ability to cope with university standard work, and this may influence selection officers when they are considering a student's application to do a tertiary course. If passed, such studies gain credit towards a degree upon entry to university.

VCE Requirements

► Promotion

In most instances, entry into Year 12 depends upon satisfactory completion (S) of a minimum of ten units. Continuation in a subject requires assessment grades which indicate competence in that subject. This is generally indicated by a 'C' grade or better. Results achieved under examination conditions are particularly important. Promotion is considered in consultation with parents/carers.

In addition, parents/carers have the opportunity to attend formal interviews at Parent/Student/Teacher Conferences. Parents/carers may request an interview with the Senior School Leader or a Coordinator at any time if they have concerns about their child's progress. Attending parent teacher conferences and ensuring feedback in semester reports are discussed at home will support progress.

► Attendance

At Lowanna College all students in Years 11 and 12 are required to attend college for a minimum of 90% of scheduled classes to complete the year or the semester unit satisfactorily.

Absences covered by medical certificates or appropriate professional evidence are not normally included in the 90%. Lateness to class will be treated as an absence on a pro-rata basis. If students are ill and have missed the date for completion of coursework, a valid medical certificate must be provided immediately on return to school before the student will be allowed to undertake coursework which has been missed. The college cannot accept medical certificates where a doctor is unable to confirm that a student was ill on a particular day.

Assessment in the VCE is continuous and is based on completion of set tasks throughout the unit. Students need to attend regularly and may have their enrolment reviewed if attendance is poor. Where a student has completed work but there has been a substantive breach of attendance rules, the college can withdraw the VCAA enrolment for the students in that subject.

► Homework

It is an expectation of the College that in addition to scheduled class time, students spend at least 2.5 to 3 hours per week of self-directed learning for each VCE unit. This expectation extends to school term breaks.

School Assessed Coursework (SACs) and School Assessed Tasks (SATs)

There are a number of requirements associated with the completion of assessment work and tasks at the college. These are provided to students in the VCE Handbook and set out in college requirements around attendance at assessment activities, illness and absence from a SAC, procedures for a re-sit if a task has not been completed or has not been satisfactorily completed. The college bases the handbook on the advice and requirements from VCAA (Administrative Handbook). There are different assessment arrangements in place for the Vocational Major as assessment is ongoing and integrated into classroom activities. Students in the Vocational Major work towards a Satisfactory result for each outcome in the subject.

General Achievement Test (GAT)

All students undertaking a Unit 3 & 4 study, regardless of their year level, are required to sit for the General Achievement Test (GAT) which is set by the VCAA. The score achieved by the students on their GAT is compared to the scores they achieve for their coursework. It may also be used in the statistical moderation process and for the calculation of a Derived Examination Score (DES) if required in an examination.

It is in the students' best interests to do as well as they possibly can on the GAT.

Special Provision- Examinations and School Assessment

Arrangements are made to allow students who are experiencing significant hardship the maximum opportunity to demonstrate both what they know and what they can do. Parents/carers who believe their child is eligible for special provision should discuss this with the Senior School Leader to see if arrangements can be put in place.

NOTE: Special provision will not be given to a student who has been absent from school or study for prolonged periods. Where prolonged absence has occurred, it may be necessary to repeat the unit.

Authentication of Student Work

Students must submit for assessment only work that is their own. All assistance received by the students in producing the work must be acknowledged and made obvious to the reader. Students are responsible for ensuring the teacher has no difficulty in authenticating their work.

VCAA states that:

1. Students must ensure that all unacknowledged work submitted for coursework is genuinely their own
2. Students must acknowledge all resources used, including:
 - (a) Text and source material
 - (b) The name(s) and status of any person(s) who provided assistance and the type of assistance provided.
3. A student must not receive undue assistance from any other person in the preparation and submission of work.
4. Students must not submit the same piece of work for assessment more than once.
5. Students who knowingly assist other students in a Breach of Rules may be penalised.
6. Students must sign the Declaration of Authenticity at the time of submitting the completed task. This declaration states that all unacknowledged work is the student's own. Students must also sign a general declaration that they will observe the rules and instructions for the VCE and accept disciplinary provisions.

If a suspected breach of the rules about authentication occurs, the parents and student concerned will be notified in writing and invited to appear before a panel convened by the college. Parents/carers cannot advocate on behalf of students. The panel will make a determination based on the information and evidence presented. Consequences for a breach may include a reprimand, resubmission of work, refusal to accept all or part of the work – it may result in a N if the infringement is deemed serious or if very little or none of the work can be authenticated.

Appeals

Students have a right of appeal to the VCAA against the decision of the principal if a penalty has been imposed because of a breach of the VCAA rules set out above.

There is no appeal to the VCAA in the case of a school refusing to accept the late submission of work.



Vocational Education and Training (VET)

VET at Lowanna

Students are able to choose a VCE VET program as part of their VCE, which means that they will be undertaking training in a specific vocational area (e.g. hospitality, animal studies, information technology or Allied Health).

VET is intended to broaden the range of study options available to students in VCE. It is about training for the workplace and is industry-based.

These courses are incorporated into the VCE and are endorsed by the Victorian Curriculum and Assessment Authority. Over a two-year period (Years 11 and 12) a student will be able to complete their VCE and one of the certificate courses simultaneously. VET studies also form an integral part of the VCE-VM program.

VCE VET programs will give you credit at Units 1–4. A number of the programs also have a study score available and these and most others contribute to the ATAR (Australian Tertiary Admissions Rank). A program booklet for each of the VCE VET programs is available on the VCAA website at www.vcaa.vic.edu.au.

All students who select the VCE-VM program are required to undertake a VET study.

It is most important that students interested in these courses seek advice and details from the Careers team.

It is important to note the following in relation to VET courses offered by Lowanna College as part of VCE Studies:

- Enrolment in VET programs may result in additional costs for materials at TAFE Institutions.
- Students are responsible for their own transport to and from TAFE/provider institutions.
- As the courses are offered in collaboration with other government, Catholic and private schools, students will often be involved in mixed classes.
- These classes are usually timetabled on a Wednesday and students will be required to stay up to date with work missed in usual scheduled classes.

How to apply

There is an increasing demand for VET places, and students interested in a VET course must list the VET course on their subject application form and attend a compulsory induction day in November. It is not automatic entry.

School Based Apprenticeships & Traineeships (SBAT)

These are described in the “Where to Now” booklet. The College recommends this type of training as an alternative for students who are considering VET courses. Several key points should be noted:

- For a student to be signed up for a SBAT, an employer must be found who is prepared to take on the student, not just for part-time work, but also for on-the-job training.
- A SBAT requires that a number of VCE or VCE-VM studies be undertaken and a course be undertaken with an RTO. The course would probably be over two years and would probably involve 1 or 2 days with the employer, and 3 or 4 days at school or similar arrangements.



Courses

Some courses may include:

- ▷ Certificate III in Allied Health Assistance
- ▷ Certificate III in Childhood Education and Care
- ▷ Certificate II in Building and Construction Pre-Apprenticeship (Carpentry)
- ▷ Certificate II in Building and Construction Pre-Apprenticeship (Bricklaying)
- ▷ Certificate II in Building and Construction Pre-Apprenticeship (Painting and Decorating)
- ▷ Certificate II in Plumbing
- ▷ Certificate II in Civil Construction
- ▷ Certificate II in Electrotechnology (Career Start)
- ▷ Certificate II in Integrated Technologies (3D Printing and Robotics)
- ▷ Certificate II in Engineering Fabrication and Fitting
- ▷ Certificate II in Automotive Vocational Preparation
- ▷ Certificate II in Hospitality
- ▷ Certificate II in Kitchen Operations
- ▷ Hair and Beauty Skills Set
- ▷ Certificate III in Business
- ▷ Certificate III in Screen and Media
- ▷ Certificate III in Visual Arts
- ▷ Certificate II in Animal Care
- ▷ Certificate II in Agriculture
- ▷ Certificate II in Conservation and Ecosystem Management
- ▷ Certificate II in Horticulture

What is the VCE – Vocational Major (VCE-VM)?

The VCE Vocational Major (VM) is a new vocational and applied learning program that sits within the VCE. It comprises of four subjects that have been added to the VCE subjects offered. The new Vocational Major has an 'Applied Learning Approach' which involves students engaging in relevant and authentic learning experiences.

The Vocational Major is the replacement for the Intermediate and Senior VCAL and is a two-year program at Years 11 and 12. In 2023 the college will offer Year 11 Vocational Major and this will extend to Year 12 in 2024. Only students who enrol in the full program can chose this pathway.

The Vocational Major will prepare students for a transition into apprenticeships, traineeships, further education and training. There can be university access through alternative entry programs, and it also provides direct access into the workforce.

There are no external examinations for the VCE VM studies and therefore students completing a Unit 3 & 4 subject will not receive a Study Score (as they do in VCE) and are not eligible for an ATAR.

How is the VCE-VM structured?

The VCE VM has specific subjects designed to prepare students for a vocational pathway. Students study four specific subjects: VM Numeracy, VM Literacy, VM Personal Development Skills, VM Work Related Skills and a VET Certificate. Students at the college will also complete two structured work placements: one in each semester.

Each subject has four units (students complete two units each year) and each unit has a set of outcomes which are assessed through a range of learning activities and tasks. Students have the opportunity to apply their knowledge and skills in practical setting and also undertake community-based activities and projects that involve them working in a team.

What do students have to do to complete their VCE-VM?

Students must satisfactorily complete at least 16 units over the two years of the VM Certificate including:

- 3 VCE VM Literacy or VCE English units (including a Unit 3-4 sequence)
- 3 other Unit 3-4 sequences (from the list below)
- 2 VCE VM Numeracy or VCE Maths units
- 2 VCE VM Work Related Skills (WRS) units
- 2 VCE VM Personal Development Skills (PDS)
- 2 VET credits at Certificate II or above

Students will also undertake structured workplace learning (SWL).

Satisfactory completion of a VCE or VM unit

The decision to award a Satisfactory or Not Satisfactory is determined at the school level of each unit. The decision is based on the work submitted and completed by the student and must follow VCAA, and school rules and procedures as outlined in the previous pages.

In each of the Certificate Levels students are required to undertake education and training options in the 6 following Strands:

1. English

▲ VCE-VM Literacy

VCE Vocational Major Literacy focuses on the development of the knowledge and skills required to be literate in Australia today. Literacy empowers students to read, write, speak and listen in different contexts. Literacy enables students to understand the different ways in which knowledge and opinion are represented and developed in texts drawn from daily life. By engaging with a wide range of text types and content drawn from a range of local and global cultures, forms and genres, students learn how information can be shown through print, visual, oral, digital and multimodal representations.

2. Maths

▲ VCE-VM Numeracy

Numeracy develops mathematical knowledge, skills and practical applications in relation to the home, work and community. Students will use a range of mathematical skills including: designing, measuring, constructing, using graphical information, money, time and travel.

3. VET Credits

- ▲ VET Certificate Course — students can undertake any one of the alternatives offered.

Students undertaking the VCE-VM must complete a minimum of 180 hours in an accredited VET course to meet the minimum requirements.

For a list of VET courses available please refer to the VET in Schools information provided to you.

5. Personal Development Skills (PDS)

The purpose of the Personal Development Skills (PDS) is to develop knowledge, skills and attributes that lead towards:

- ▷ the development of self
- ▷ social responsibility
- ▷ building community
- ▷ civic and civil responsibility
- ▷ improved self-confidence and self esteem
- ▷ valuing civic participation in a democratic society.

The PDS units have been developed to recognise learning that is not recognised within other qualifications, but is valued within the community.

The units enable students to develop personal development skills through participation in collaboratively developed curriculum. The programs have a consistent purpose within the PDS strand and enable the achievement of the PDS learning outcomes.

Assessment is written, oral and in participatory form.

Activities in this strand are flexible and can be negotiated depending on needs/interests.

6. Work Related Skills (WRS)

Compulsory work placement.

Work placement is compulsory when completing any VCE-VM level. Students who are on work placement must have completed and returned the signed arrangement forms to the work placement officer before work placement can commence, this is a legal requirement.

Work placements are arranged by the student however support can be given by careers staff.

Work placements are usually aligned to the students VETDSS course but other placements may be acceptable. The placement must be a minimum of 100 hours per semester.

Throughout the year opportunities arise that can be used to fulfil the minimum hours required for work placement. VCE-VM students should become familiar with these programs and maintain regular contact with the careers staff. Activities may include:

- ▷ VEET Program sponsored by SP AUSNET P/L
- ▷ Horticulture Taster Program
- ▷ Nurse for a Day Program
- ▷ Agriculture Taster Program
- ▷ Navy Program at HMAS Cerberus
- ▷ GippsWeb for Business- for students interested in Computers
- ▷ Copy Cap Program- for students interested in work as a Carer
- ▷ Civil Construction Taster
- ▷ Grocon site visit
- ▷ White Card Course
- ▷ First Aid Course
- ▷ RSA Course

Homework

It is an expectation of the College and the Victorian Curriculum and Assessment Authority that each VCE-VM unit is 100 nominal hours in length. The nominal hours include both scheduled and unscheduled time and may vary when considering the specific needs of each student. VCE-VM students are expected to complete homework and study as required, including for the VET subject.

■ Art Creative Practice

Year 11

Unit 1

This unit focuses on experiential learning in Making and Responding to explore ideas using the Creative Practice. As the artist and audience, students consider their connection to artworks, and how their communication of ideas and presentation of artworks challenge, shape and influence viewer or audience perspectives.

They focus on the making of art and examine how artists communicate ideas and meaning in artworks. They examine artists in different societies, cultures and historical periods and develop their own interpretations and viewpoints about the meanings and messages of artworks. They explore how artists create new ways of thinking and representation, while developing their own art practice.

Unit 2

This unit focuses on inquiry learning to investigate the artistic and collaborative practices of artists. They use the Cultural Lens, and the other Interpretive Lenses as appropriate, to examine artworks from different periods of time and cultures, and to explore the different ways that artists interpret and communicate social and personal ideas in artworks.

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

Year 12

Unit 3

This unit focuses on the inquiry and project-based learning as starting points to develop a Body of Work. They explore ideas and experiment with materials, techniques and processes using the Creative Practice. The research of historical and contemporary artists is integral to students' use of the Creative Practice and informs the basis of their investigation. Students also investigate the issues that may arise from the artworks they view and discuss, or those evolving from the practice of the artist. Unit 3 commences with students researching the practice of a selected artist as the starting point to develop a finished artwork. The finished artwork will contribute to the Body of Work developed over Units 3 and 4.

Unit 4

This unit focuses on allowing students to continue building upon the ideas begun in Unit 3 and present a critique of their use of the Creative Practice. They reflect on the feedback from their critique to further refine and resolve a Body of Work that demonstrates their use of the Creative Practice and the realisation of their personal ideas. The students present their Body of Work to an audience accompanied by documentation of their use of the Creative Practice.

The students' use of the Creative Practice involves both Making and Responding and is underpinned by the Interpretive Lenses. Students use the Interpretive Lenses to analyse and interpret the meanings and messages of artworks created by the artists they study and to investigate the practices used to create them.

■ Visual Communication & Design

Year 11

Unit 1

This unit focuses on using visual language to communicate messages, ideas and concepts. This involves acquiring and applying design thinking skills as well as drawing skills to make messages, ideas and concepts visible and tangible. Students practice their ability to draw what they observe and they use visualization drawing methods to explore their own ideas and concepts. Students develop an understanding of the importance of presentation drawings to clearly communicate their final visual communications.

Through experimentation and exploration of the relationship between design elements and design principles, students develop an understanding of how design elements and principles affect the visual message and the way information and ideas are read and perceived. Students review the contextual background of visual communication through an investigation of design styles. This research introduces students to the broader context of the place and purpose of design.

Unit 2

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.

Students use presentation drawing methods that incorporate the use of technical drawing conventions to communicate information and ideas associated with the environmental or industrial fields of design. They investigate how typography and imagery are used in visual communication design. They apply design thinking skills when exploring ways in which images and type can be manipulated to communicate ideas and concepts in different ways in the communication design field. In response to a brief, students engage in the stages of research, generation of ideas and development of concepts to create visual communications.



Year 12

Unit 3

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. They investigate and experiment with the use of manual and digital methods, media and materials to make informed decisions when selecting suitable approaches for the development of their own design ideas and concepts.

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 and identify and describe a client, two distinctly different needs of that client, and the purpose, target audience, context and constraints relevant to each need.

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. The brief and investigation work underpin the developmental and refinement work undertaken in Unit 4.

Unit 4

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. Having completed their brief and generated ideas in Unit 3, students continue the design process by developing and refining concepts for each need stated in the brief. They utilise a range of digital and manual two- and three-dimensional methods, media and materials. They investigate how the application of design elements and design principles creates different communication messages with their target audience.

Students refine and present two visual communications within the parameters of the brief. They reflect on the design process and the design decisions they took in the realisation of their ideas. They evaluate their visual communications and devise a pitch to communicate their design thinking and decision making to the client.



Sample study program for:

Performing Arts - Media

A traditional course. Each tertiary institution has their own criteria, make sure you seek advice from your careers teacher.

Subject	Units			
	1	2	3	4
English	×	×	×	×
Drama	×	×	×	×
Music	×	×	×	×
Media	×	×	×	×
Additional Unit	×	×	×	×
Additional Unit	×	×		

Recommended additional units:

Design & Technology, Maths, Physical Education, Industry & Enterprise, Psychology, Studio Art, Computing, Informatics, English Literature, Music, Visual Communication.

TAFE

Certificate/Diploma courses in:

Social & Community Studies, Arts, Childcare, Media, Public Relations.

UNIVERSITY

Associate Diplomas/Bachelor Degrees in:

Arts/Cinema Studies, Arts/Media, Performing Arts, Drama, Social Sciences, Humanities, Welfare, Early Childhood Development, Education, VCA & NIDA

Possible employment outcomes after TAFE/University:

Human Resource Management, Teaching, Service Industries, Acting, Welfare, Childcare, Film & Television, Production, Journalism.

Music Performance

Students may enrol in all units or select specific combinations of units that cater for their interests and intended pathways.

Each unit contains between two and four Areas of Study.

Year 11

Unit 1

This unit focuses on building performance and musicianship skills. Student's present performances of selected group and solo music works using one or more instruments. They study the work of other performers and explore strategies to optimise their own approach to performance.

Unit 2

In this unit students build their performance and musicianship skills. They present performances of selected group and solo music works using one or more instruments. Students study the work of other performers through listening and analysis and use specific strategies to optimise their own approach to performance. Students also devise an original composition or improvisation.



Year 12

Music Performance

Unit 3

This unit prepares students to present convincing performances of group and solo works. Students continue to study ways in which Australian performers interpret works that have been created since 1910 by Australian composers/songwriters.

Unit 4

In this unit students refine their ability to present convincing performances of group and solo works. Students continue to study ways in which Australian performers interpret works that have been created since 1910 by Australian composers/songwriters.

Music Investigation

Unit 3

In this unit students select a work from a prescribed list as the basis for an investigation of a Focus Area.

Unit 4

In this unit students continue the exploration within the Focus Area they began in Unit 3. In Unit 4 the investigation involves the preparation of program notes to accompany their end-of-year performance program.



This course is offered to students under the auspices of the College of Sound and Music Production

Students and parents are welcome to contact the RTO 'COSAMP' with the RTO code #41549 for confirmation of this program by phone or email.

Phone: (03) 9592 4801

email: enquiries@cosamp.com.au

website: cosamp.com.au

The Certificate III in Music and Certificate III in Technical Production provides a broad education in music, integrating theoretical, historical, performance studies and music technology while enabling students to master the skills needed for a wide array of professions. It is intended to appeal to those aspiring to deepen their existing knowledge of music and those who may be seeking to gain accredited recognition in order to apply for further study.

The Music Industry requires creative and dynamic multi-taskers. The career options include: Artist/Event Management; Record Production; Audio Engineering; Song Writing; Arts Administration; Music Marketing & Distribution; Festival Direction; Music Publishing. Most significantly the course prepares students to function in the increasingly DIY Industry environment.

These certificates include scored assessments, which contribute to your overall VCE studies.

These courses are delivered over a two-year period held on Wednesdays during the school term.

Certificate III in Music Industry (CUA30915) Music Performance Sound Production

The Certificate III in Music – for VCE will be of particular interest to those aspiring to a high level of proficiency in Music with a focus on performance.

There are no formal education pre-requisites for entry into this course; however applicants must have some proficiency in instrumental music performance or singing and be receiving instrumental music or singing instruction on a regular basis. Candidates will be required to be familiar with conventions of music theory to approximately Grade 3 AMEB (Australian Music Examinations Board) or equivalent.

Content:

Year 1 & 2 Music Performance

BSBWHS201	Contribute to health and safety of self and others
CUACMP301	Implement copyright arrangements
CUAIND303	Work effectively in the music industry
CUAMLT302	Apply knowledge of style and genre to music industry practice
CUAMCP301	Compose simple songs or musical pieces
CUAMPF203	Develop ensemble skills for playing or singing music
CUAMPF301	Develop technical skills in performance
CUAMPF302	Prepare for performances
CUAMPF305	Develop improvisation skills
CUAMPF402	Develop and maintain stagecraft skills
CUAMPF404	Perform music as part of a group
CUAMPF406	Perform music as a soloist

Certificate III in Technical Production (CUS30209)

The Certificate III in Technical Production – for VCE will be of particular interest to those aspiring to a high level of proficiency in Music with a focus on production, recording and the implementation of sound and lighting technology.

There are no formal education pre-requisites for entry into this course. A basic understanding of the conventions of music notation and language would be an advantage.

Content:

Year 1 & 2 Sound Production

BSBWHS201	Contribute to health and safety of self and others
CUACMP301	Implement copyright arrangements
CUAIND303	Work effectively in the music industry
CUAMLT302	Apply knowledge of style and genre to music industry practice
CUASOU202	Perform basic sound editing
CUAMPF303	Repair and maintain audio equipment
CUASOU306	Operate sound reinforcement systems
CUASOU307	Record and mix a basic music demo
CUASOU308	Install and disassemble audio equipment
CUASOU311	Mix music in a studio environment
CUASOU402	Manage audio input services

Outdoor & Environmental Studies

Year 11

Unit 1: Exploring Outdoor Experiences

Unit costs approximately: \$350

This unit examines some of the ways in which humans understand and relate to nature through experiences of outdoor environments. The focus is on individuals and their personal responses to and experiences of natural environments. Through outdoor experiences, students develop practical skills and knowledge to help them live sustainably in outdoor environments.

Practical programs may include surfing, bush walking and high ropes courses.

Unit 2: Discovering Outdoor Environments

Unit costs approximately: \$350

This unit focuses on the characteristics of outdoor environments and different ways of understanding them, as well as the human impacts on outdoor environments. Students develop a clear understanding of the impact of technologies and changing human lifestyles on outdoor environments. Students develop the practical skills required to minimise human impact on outdoor environments.

Practical programs may include snow activities and exploration.

Year 12

Unit 3: Relationships with Outdoor Environments

Unit costs approximately: \$350

The focus of this unit is the ecological, historical and social contexts of relationships between humans and outdoor environments in Australia. Students consider a number of factors that influence contemporary relationships with outdoor environments. Students are involved in a number of experiences in outdoor environments, including areas where there is evidence of human interaction.

Practical programs may include bushwalking & exploration.

Unit 4: Sustainable Outdoor Environments

Unit costs approximately: \$350

In this unit students explore the sustainable use and management of outdoor environments. Students examine the importance of developing a balance between human needs and the conservation of outdoor environments and consider the skills needed to be environmentally responsible citizens. Students investigate current agreements and environmental legislation, as well as management strategies and policies

for achieving and maintaining healthy and sustainable environments in contemporary Australian Society.

Practical programs may include snow or water based activities.

Please note:

There are additional costs associated with Outdoor and Environmental Studies to cover specialist equipment hire, instructors and excursions. The cost of food for excursions is often not included.

Students must attend ALL practical activities.

Physical Education

Year 11

Unit 1: The Human Body in Motion

Students explore how the musculoskeletal and cardiorespiratory systems work together to produce movement. Through practical activities students explore the relationships between the body systems and physical activity. Students investigate the role and function of the main structures in each system and how they respond to physical activity. They explore how the capacity and functions of each system influences participation in physical activity. Students are introduced to how energy systems contribute to performance in physical activity. They investigate the characteristics of each system and the interplay of the systems during physical activity.

Unit 2: Physical Activity, Sport & Society

Students develop their understanding of an array of biomechanical principles. These include Newton's 3 laws of motion and other key principles in relation to sporting performance. Students then explore how technological developments in sport have improved performance. Students also research the biomechanical and technological impacts on sub populations and junior sport. Within the second area of focus, students are introduced to types of physical activity and the role physical activity plays in their own and others health and wellbeing. Through a series of practical activities, students experience and explore different types of physical activity and they gain an appreciation of the level of physical activities required for health benefits. Students investigate how participation in physical activity varies across the lifespan. They explore a range of factors that influence participation in regular physical activity. Students investigate the consequences of physical inactivity and sedentary behaviour.

Year 12

Unit 3: Physical Activity Participation and Physiological Performance

Students gain an understanding of physical activity and sedentary behaviour from a participatory and physiological perspective. Students apply various methods to assess physical activity and sedentary levels, and analyse the data in relation to adherence to the National Physical Activity Guidelines. Students study and apply the social-ecological model to identify a range of Australian strategies that are effective in promoting participation in physical activity.

Students investigate the contribution of energy systems to performance in physical activity. They investigate the characteristics of each system and the interplay of the systems during physical activity. Students explore the causes of fatigue and consider different strategies used to delay and manage fatigue and to promote recovery.

Unit 4: Enhancing Performance

Students undertake an activity analysis and use the results of the analysis to determine the required fitness components for the activity. Students then participate in a training program designed to improve or maintain selected fitness components.

Students evaluate different techniques and practices that can be used to enhance performance, and look at the rationale for the banning or inclusion of various practices from sporting competition.

VET VCE Sport and Recreation Certificate 3

Lowanna offers a 2 year VCE scored Sport and Recreation Certificate. This is delivered on site as part of the normal school timetable (not off site on Wednesdays like other VET courses). This course would be of particular interest to anyone who enjoys sport and fitness activities or is thinking about pursuing a career in the sport and recreation industry.

Units studied:

BSBWHS303	Participate in WHS hazard identification, risk assessment and risk control
BSBWOR301	Organise personal work priorities and development
HLTAID003	Provide first aid
HLTWHS001	Participate in workplace health and safety
ICTWEB201	Use social media tools for collaboration and engagement

SISXCAI003	Conduct non-instructional sport, fitness or recreation sessions
SISXCAI004	Plan and conduct programs
SISXCCS001	Provide quality service
General Electives:	
HLTAID006	Provide advanced first aid
SISXCAI006	Facilitate groups
SISXFAC002	Maintain sport, fitness and recreation facilities
SISXFAC003	Implement facility maintenance programs
SISXIND006	Conduct sport, fitness or recreation events
SISXRES002	Educate user groups

Description

This qualification reflects the multi-skilled role of individuals in operational and customer support positions in the sport or community recreation industry. These individuals are competent in a range of activities and functions requiring autonomous work within a defined range of situations and environments.

They work in locations such as fitness centres, sporting grounds or complexes, leisure and aquatic centres and community recreation centres.

Possible career paths include Recreation Officer, Activity Operation Officer, Sport and Recreation Attendant, Community Activities Officer, Leisure Services Officer.

Health & Human Development

Year 11

Unit 1: Unit one focuses on the health and wellbeing of youth, how health is defined and measured and the factors that influence youth health and wellbeing including age, culture, religion, gender and socioeconomic status. They look at health status data and consider reasons for variations and inequalities in the health status of youth.

Students explore food and nutrition as foundations for good health and wellbeing. They investigate the roles and sources of major nutrients, the consequences of dietary imbalance and the use of food selection models and other tools to promote healthy eating. The social, cultural and political factors that influence the food practices and food choices made by youth are explored.

Unit 2: This area of study examines the developmental transitions from youth to adulthood. Students investigate factors that contribute to development, health and wellbeing during the prenatal, infancy and early childhood stages of the lifespan. Students investigate the health system in Australia, equity of access to health services and the rights and responsibilities of individuals receiving care. Students research the range of health services in their communities and suggest how to improve health and wellbeing in Australia. They explore a range of issues associated with the use of new and

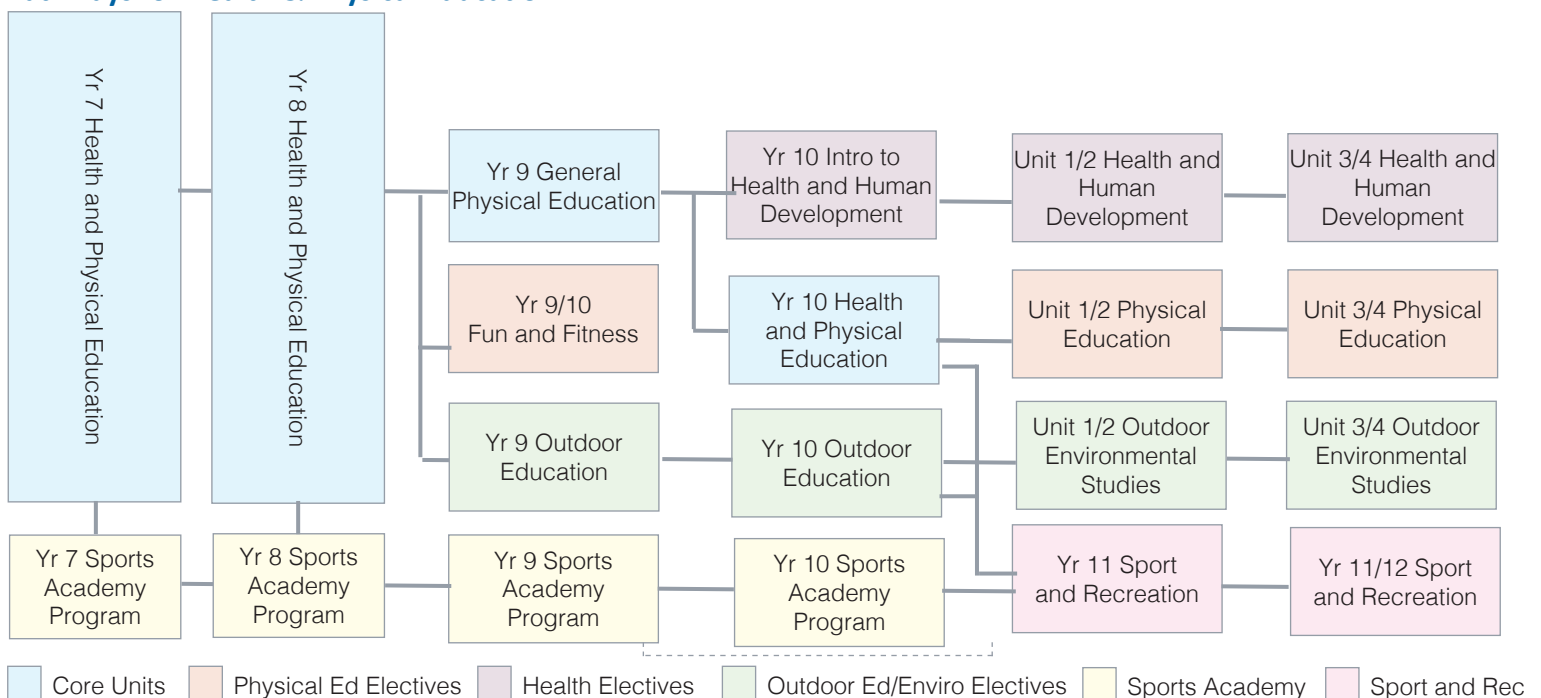
emerging health procedures and technologies such as reproductive technologies, artificial intelligence, robotics, nanotechnology, three-dimensional printing of body parts and use of stem cells.

Year 12

Unit 3: Students begin to explore health and wellbeing as a global concept. They look at the conditions required for health improvement and use this knowledge as background to their analysis and evaluation of variations in the health status of Australians. The focus then moves to health promotion and improvements in population health over time. Students look at various health approaches and the models of health. They research how health of Australians can be improved by evaluating successful programs.

Unit 4: Students use data to investigate health status and burden of disease in different countries, exploring factors that contribute to health inequalities including the physical, social and economic conditions in which people live. They consider the health implications of increased globalisation and worldwide trends relating to climate change, digital technologies, world trade and the mass movement of people. Students focus on the work of the United Nations sustainable development goals (SDG's) and the World Health Organisation (WHO). The role of non-government organisations and Australia's overseas aid program are also investigated. Students evaluate the effectiveness of health initiatives and programs in a global context.

Pathways for Health & Physical Education



Career Pathways:

VCE-VM: Sports Coach, Sports Instructor, Retail Sales, Community Coach, Community Recreation

VET: Sports Admin, Development Officer, Events Coordinator, Camp Instructor, Fitness/Personal Trainer

VCE/Tertiary: Sports Admin, Teaching/Coaching, Physiotherapy, Occupational Therapist, Exercise Physiologist, Scientist

VCE English Options

Year 11

English Units 1 & 2

Students study and are assessed on several outcomes: Reading and Exploring Texts, Crafting Texts, Exploring Argument.

Literature Units 1 & 2

Students develop their reading practices, explore literary movements and genres, study texts in their context and Aboriginal texts and voices.

Year 12

English Units 3 & 4

Students further develop their skills and are assessed on several outcomes: Reading and Responding, Creating Texts, Analysing Argument.

Literature Units 3 & 4

Students study adaptations and transformations, and further develop their skills of close analysis and creative and analytical response by developing their own interpretations of text.

Students must complete one of the following:

1. English Units 1 & 2
2. Literature Units 1 & 2

Students who select English or Literature may study these individually or together.

To meet their English requirement for VCE students must select either:

1. English Units 3 & 4
2. Literature Units 3 & 4

Students may wish to choose both English and Literature. Those who did well in Year 11 English are recommended to do Literature and English to make the most of their ability in this area.

English

Year 11

Unit 1

In this unit, students read and explore features of texts. Students craft their own text designed for a specific context, audience and purpose.

Unit 2

In this unit, students explore and analyse how the features of texts construct meaning. They explore and analyse persuasive texts and construct a point of view text for oral presentation.

Year 12

Unit 3

In this unit, students explore and analyse features of texts. Students create their own texts designed for a specific context, audience and purpose.

Unit 4

In this unit, students analyse ideas, concerns and values presented in a text. They create an oral presentation intended to position audiences about an issue currently debated in the media.



Literature

Year 11

Literature is recommended for students who are competent readers and who wish to extend their writing skills.

Unit 1

In this unit, students respond to a range of texts through close analysis. They explore conventions common to a selected movement or genre.

Unit 2

In this unit, students explore and reflect on the voices, perspectives and knowledge in the texts of Aboriginals and Torres Strait Islander authors and creators. They analyse and respond to the representation of a specific time period and/or culture explored in a text and reflect or comment on the ideas and concerns of individuals and groups in that context.

Assessment will include School Assessed Coursework (SAC) and a mid-year and end-of-year examination.

Year 12

Literature is recommended for students who are competent readers and who wish to extend their writing skills. Whilst there is no formal prerequisite, it is strongly suggested that students complete Unit 1 and 2 Literature to benefit the most from this study.

Unit 3

In this unit, students closely analyse a text and then discuss the extent to which meaning changes when that text is adapted to a different form. They develop interpretations of a text informed by the ideas, views and values of the text and supplementary readings.

Unit 4

In this unit, students respond creatively to a text and comment critically on both the original text and their creative response. They analyse literary forms, features and language to present a view of a text.

School Assessment is worth 50% of their final Study Score, with the other 50% being derived from their end-of-year examination.



Calculators

All mathematical subjects require the TI-nspire CX CAS Calculator (approx. \$200).

General Mathematics

Year 11

Units 1 & 2

General Mathematics provides for different combinations of student interests and preparation for study of VCE Mathematics at the Unit 3 and 4 level. 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 nonlinear relations and Statistics.

General Mathematics can be taken by itself or in combination with Mathematical Methods.

General Mathematics

Year 12

Units 3 & 4

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 to be completed in their entirety, 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: computation and practical arithmetic, investigating and comparing data distributions, investigating relationships between two numerical variables, linear graphs and modelling, linear relations and equations, and number patterns and recursion. For each module there are related topics in General Mathematics Units 1 and 2.

Entry: Students must have completed General Mathematics Unit 1 and 2 or Mathematical Methods Unit 1 and 2 to enter this unit.

Mathematical Methods

Year 11

Units 1 & 2

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

Students are expected to be able to apply techniques, routines and processes involving rational and real arithmetic, algebraic manipulation, equation solving, graph sketching, differentiation and integration with and without the use of technology.

Mathematical Methods

Year 12

Units 3 & 4

Mathematical Methods Units 3 and 4 consist of the areas of study Functions and graphs, Calculus, Algebra and Probability and statistics. Assumed knowledge and skills for Mathematical Methods Units 3 and 4 are contained in Mathematical Methods Units 1 and 2, and will be drawn on, as applicable, in the development of related content from the areas of study, and key knowledge and skills for the outcomes of Mathematical Methods Units 3 and 4. Entry: Students must have completed Mathematical Methods Unit 1 and 2 to enter this unit.

Specialist Mathematics

Year 11

Units 1 & 2

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

Mathematical Methods Units 1 and 2 and Specialist Mathematics Units 1 and 2, taken in conjunction, provide a comprehensive preparation for Specialist Mathematics Units 3 and 4. The areas of study for Units 1 and 2 of Specialist Mathematics are Algebra and structure, Arithmetic and number, Discrete mathematics, Geometry, measurement and trigonometry, Graphs of linear and nonlinear relations and Statistics.

This course is highly recommended for students intending to study Engineering, Physics or Mathematics at University.

Specialist Mathematics

Year 12

Unit 3 & 4

Specialist Mathematics Units 3 and 4 consist of the areas of study: Functions and graphs, Algebra, Calculus, Vectors, Mechanics and Probability and statistics.

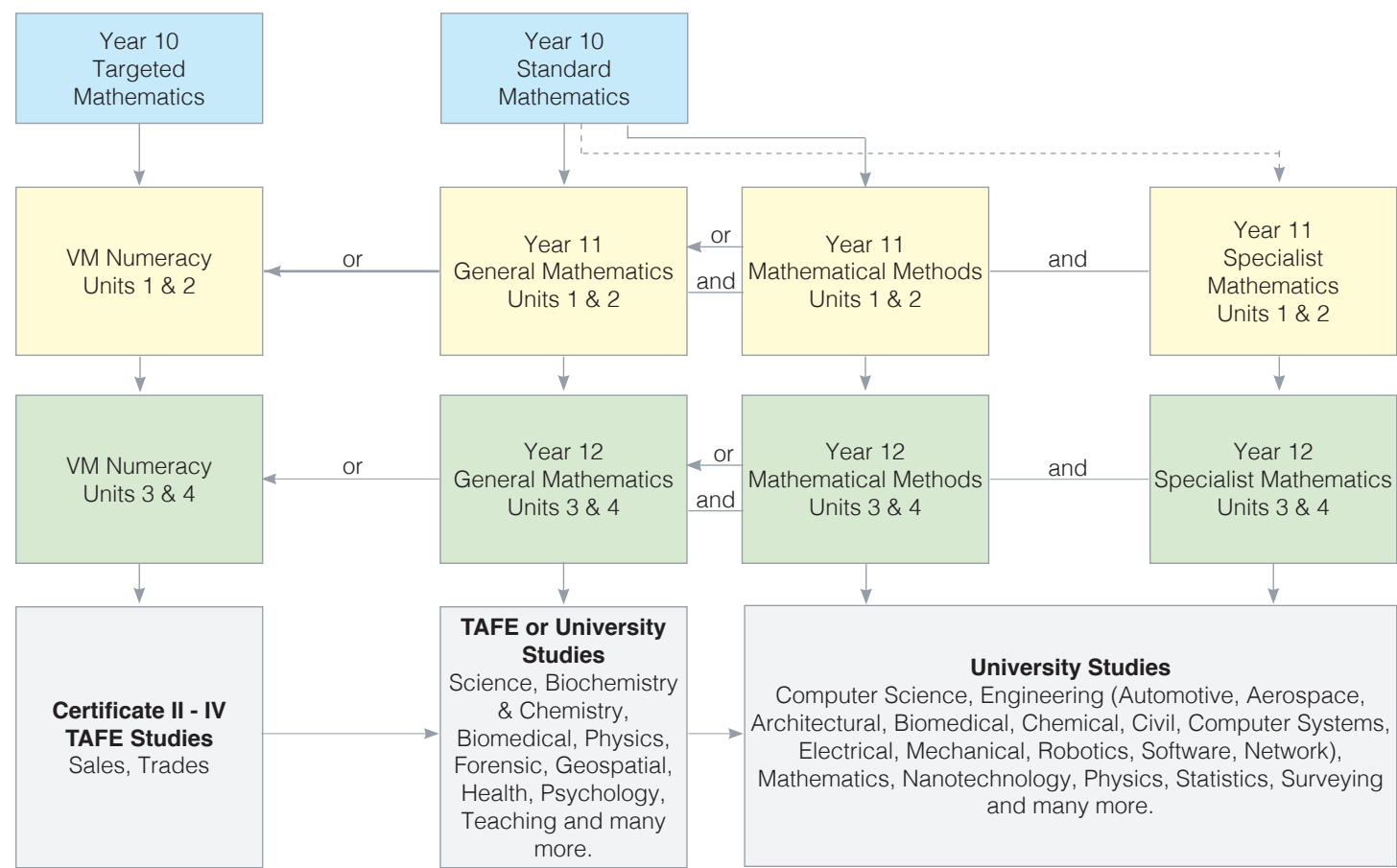
Specialist Mathematics Units 3 and 4 assumes familiarity with the key knowledge and skills from Mathematical Methods Units 1 and 2 and the key knowledge and skills from Specialist Mathematics Units 1 and 2.

Should you have any concerns about which Mathematics subject is appropriate, please ask your current Mathematics teacher or talk to the Mathematics Teaching and Learning Leader.

The diagram on the following page shows the possible pathways available to students.

- ▷ Arrows indicate the sequence direction normally taken.
- ▷ Specialist Mathematics must be taken in conjunction with Mathematical Methods. Specialist Mathematics complements and extends Mathematical Methods.

Pathways for Mathematics



Accounting

VCE Accounting involves recording, reporting, and decision-making processes of a sole proprietor small business. This information is communicated to both internal and external users of the business. It plays an integral role in the successful operation and management of businesses.

Students will study both theoretical and practical aspects of accounting. They will use both manual and computerized accounting packages to complete accounting tasks.

At the completion of the course students will have gained personal finance and computer skills. These skills will be beneficial for students intending to undertake a career in business and finance or to pursue studies in accounting.

There are no pre-requisites for entry to Units 1, 2 & 3. Students must undertake Unit 3 prior to undertaking Unit 4.

Year 11

Unit 1: Establishing and operating a service business

This unit focuses on the establishment of a small business and the accounting and financial management of the business and the role of accounting in the decision-making process for a sole proprietor of a service business. Using a cash basis, they will record and report accounting data using a single entry recording system.

Unit 2: Accounting for a trading business

This unit focuses on accounting for a sole proprietor of a single activity trading business. Students will use a single entry system for cash and credit transactions and accrual method for determining profit. They will use a computerized accounting package to establish, record and generate reports. These will be used to analyse and evaluate the performance of a business.

Year 12

Unit 3: Recording and reporting for a trading business

This unit focuses on financial accounting for a single activity trading business, operated by a sole trader. It emphasizes the role of accounting as an information system. Students use the double entry system of accounting to record information and the accrual basis of accounting to prepare reports. It uses the perpetual inventory recording system.

Unit 4: Control and analysis of business performance

This unit provides an extension of the recording, reporting, financial planning and decision-making from Unit 3. Students will investigate the role of budgeting for a business and then prepare budgets for a business. They will interpret accounting information, analyse the results and provide strategies to the owner of the business, on how to improve the performance of the business.

Business Management

In Australia today, there are a wide variety of business organisations in terms of size, ownership, objectives, resources and location. Business Management studies the ways in which people within an organisation manage resources to achieve business objectives. Students will develop an understanding of the complexity of the challenges facing decision makers in managing these resources.

Students will develop an understanding of the challenges and rewards that come from business management. They will develop knowledge and skills that will enhance their confidence and ability to participate effectively as members of the business community and as informed consumers, investors and citizens.

Students can undertake Units 3 & 4 without undertaking Units 1 & 2.

Year 11

Unit 1: Planning a Business

In this unit students explore the factors affecting business ideas and the internal and external environments within which businesses operate and the effect of these on planning a business.

Unit 2: Establishing a Business

This unit focuses on the establishment phase of a business's life. Students examine the legal requirements that must be satisfied to establish a business. They investigate the essential features of effective marketing, staffing a business and financial record keeping.

Year 12

Unit 3: Managing a Business

In this unit students explore the key processes and issues concerned with managing a business efficiently and effectively to achieve business objectives. They examine different types of businesses, corporate culture, management styles and skills and the relationship between each of these.

Unit 4: Transforming a Business

Businesses are under constant pressure to adapt and change to meet their objectives. In this unit students consider the importance of reviewing key performance indicators to evaluate performance. Students will also study a theoretical model to undertake change and consider a variety of strategies to manage change and improve business performance.

Sample study program for:

Commerce - Accounting

A traditional course. Each tertiary institution has their own criteria, make sure you seek advice from your careers teacher.

Subject	Units			
	1	2	3	4
English	×	×	×	×
Maths	×	×	×	×
Business Man.	×	×	×	×
Accounting	×	×	×	×
Additional Unit	×	×	×	×
Additional Unit	×	×		

Recommended additional units:

Legal Studies, Industry & Enterprise, Geography, Computing, Informatics, English Literature.

TAFE

Certificate/Diploma courses in:

Accounting, Business Management, Legal Office, Human Resources, Business Applications, Business Computing, Business/Secretarial Studies.

UNIVERSITY

Associate Diplomas/Bachelor Degrees in:

Business, Computing, Commerce, Economics, Marketing, Office Management, Sports Management, Agribusiness International Trade, Public Administration.

Possible employment outcomes after TAFE/University:

Banking, Insurance, Marketing, Secretarial Work, Office Management, Retailing.

Legal Studies

Year 11

Unit 1: Guilt and liability

In this unit students develop an understanding of legal foundations, such as the different types and sources of law and the existence of a court hierarchy in Victoria. Students investigate key concepts of criminal law and civil law and apply these to actual and/or hypothetical scenarios to determine whether an accused may be found guilty of a crime, or liable in a civil dispute.

Unit 2: Sanctions, remedies and rights

This unit focuses on the enforcement of criminal law and civil law, the methods and institutions that may be used to determine a criminal case or resolve a civil dispute, and the purposes and types of sanctions and remedies and their effectiveness. Students undertake a detailed investigation of two criminal cases and two civil cases from the past four years to form a judgment about the ability of sanctions and remedies to achieve the principles of justice. They examine a significant case in relation to the protection of rights in Australia.

Year 12

Unit 3: Rights and Justice

In this unit students examine the methods and institutions in the justice system and consider their appropriateness in determining criminal cases and resolving civil disputes. Students consider the Magistrates' Court, County Court and Supreme Court within the Victorian court hierarchy, as well as other Victorian legal institutions and bodies available to assist with cases. Students explore matters such as the rights available to an accused and to victims in the criminal justice system, the roles of the judge, jury, legal practitioners and the parties, and the ability of sanctions and remedies to achieve their purposes. Students investigate the extent to which the principles of justice are upheld in the justice system. Throughout this unit, students apply legal reasoning and information to actual and/or hypothetical scenarios.

Unit 4: The people and law

In this unit, students explore how the Australian Constitution establishes the law-making powers of the Commonwealth and state parliaments, and protects the Australian people through structures that act as a check on parliament in law-making. Students develop an understanding of the significance of the High Court in protecting and interpreting the Australian Constitution. They investigate parliament and the courts, and the relationship between the two in law-making,

and consider the roles of the individual, the media and law reform bodies in influencing law reform. Throughout this unit, students apply legal reasoning and information to actual scenarios.

Geography

Geography is the study of the Earth's environment including the natural features and human activities. VCE Geography focuses on different types of environments and the factors that effect and change environments including both natural and human factors. Students who study geography will develop skills helpful to those who wish to work in environmental areas, mining, agriculture, as resource managers, or in many other areas, which need an understanding of natural and human environments.

Year 11

Unit 1: Natural Environments

This unit is about natural environments. Students will learn about the geographic characteristics of places and look at how places change over time. The study also includes investigation of natural processes and human activities and how they are shaping and changing places around the world.

Unit 2: Human Environments

This unit is about the environments that have largely been shaped by human activities resulting in rural and urban areas. Students examine the dynamic nature of the human environment and evaluate how people manage and sustain these environments.

Year 12

Unit 3: Regional Resources

This unit is about the resources of the Earth. Students look at types and distribution of resources around the world and investigate the ways in which resources are used and managed by people. There will be a focus on use and management of water as a resource in Australia.

Unit 4: Global Perspectives

This unit focuses on natural and human environmental events that have a global impact. Some examples include natural disasters, global warming, international tourism, refugees and shared ocean resources. Students investigate how different societies contribute to and deal with such events.



History

History is the study of people and events that have shaped our society. At the VCE level History focuses on significant events and the ideas that have led to those events. Students will study people who promote ideas and are significant leaders and agents of change in their time and how people and ideas have impacted on the societies.

History builds on the ability of students to read and comprehend information, examine ideas, analyse change and use evidence in reasoned arguments.

Year 11

Unit 1: Twentieth Century History 1900-1945

This unit is about the major events, changes and developments (e.g. revolutions, civil conflicts and wars) that shaped the first half of the twentieth century. Students investigate the causes of these events and examine how they impacted and changed societies.

Unit 2: Twentieth Century History 1945-2000

The second half of the twentieth century saw the continuation of the international conflicts (e.g. Vietnam War, Cold War, etc.) and the emergence of the world superpowers. In this unit students investigate the major themes, events and challenges of the post-war era and consider how societies responded to the new challenges and developments.

Year 12

Units 3 & 4

Students as a group will study Revolutions.

Revolutions

Revolutions are major upheavals in human societies. They are deliberate attempts by people to challenge and destroy old regimes and replace them with new ones. With reference to revolutions in 18th century France (Unit 3) and 20th century Russia (Unit 4), students will investigate the causes and the course of revolutions in world history. Both units have the same areas of study.

Area of Study 1

Students will focus on the causes of revolutions and investigate how and why the old regimes collapsed.

Area of Study 2

Here students will examine the role of new ideas and the behaviour of people, individuals and leaders in bringing about the revolution. They will also evaluate the nature of the new societies that were created by the revolutions.

Knowledge of a foreign language can open doors to a wide range of employment opportunities in areas of business, teaching, government, tourism, travel, hospitality, translating and interpreting, automotive, medicine, engineering and journalism.

Whatever, level of competence is attained, there are benefits to be gained from learning a language, such as:

- Enhancing literacy skills of ALL learners
- Building confidence
- Encouraging cultural awareness, tolerance and understanding
- Enhancing future job opportunities as well as expanding life opportunities and experiences
- English only speakers will face increasing competition for positions in the global marketplace against multilingual applicants. With approximately 94% of the world's population speaking a language other than English.

Lowanna College offers two languages through to VCE: Italian and Indonesian

Italian

Unit 1: Students develop an understanding of the language and culture/s of Italian-speaking communities through the study of three or more topics from prescribed themes. Students access and share information on the topics and subtopics through Italian and consolidate and extend vocabulary and grammar knowledge and language skills. They focus on analysing cultural practices from stories, poems, plays, novels, songs, films, photographs, artworks, architecture, technology, food, clothing, sports and festivals.

Unit 2: Students develop an understanding of aspects of language and culture through the study of three or more topics from prescribed themes. Students analyse visual, spoken and written texts. They access and share information on the topics and subtopics through Italian and consolidate and extend vocabulary, grammar knowledge and language skills.

Unit 3: Students investigate the way Italian speakers interpret and express ideas, and negotiate and persuade in Italian through the study of three or more subtopics from the prescribed themes and topics. Students interpret information, inform others, and reflect upon and develop persuasive arguments. They access and share information on the subtopics through Italian, and consolidate and extend vocabulary and grammar knowledge and language skills. Students consider the influence of language and culture in shaping meaning and reflect on the practices, products and perspectives of the cultures of Italian-speaking communities. They reflect on how knowledge of Italian and Italian-speaking communities can be applied in a range of contexts and endeavours, such as further study, travel, business or community involvement.

Unit 4: Students investigate aspects of culture through the study of two or more subtopics from the prescribed themes and topics. Students build on their knowledge of Italian-speaking communities, considering cultural perspectives and language and explaining personal observations. Students consolidate and extend vocabulary, grammar knowledge and language skills to investigate the topics through Italian. Students reflect on the ways culture, place and time influence values, attitudes and behaviours. They consider how knowledge of more than one culture can influence the ways individuals relate to each other and function in the world.

Indonesian

Unit 1: Students develop an understanding of the language and culture/s of Indonesian-speaking communities through the study of three or more topics from prescribed themes. Students access and share information on the topics and subtopics through Indonesian and consolidate and extend vocabulary and grammar knowledge and language skills. They focus on analysing cultural practices including visual, spoken or written texts from a diverse range of texts, activities and creations. These may include stories, poems, plays, novels, songs, films, photographs, artworks, architecture, technology, food, clothing, sports and festivals.

Unit 2: Students develop an understanding of aspects of language and culture through the study of three or more topics from prescribed themes. Students analyse visual, spoken and written texts. They access and share information on the topics and subtopics through Indonesian and consolidate and extend vocabulary, grammar knowledge and language skills.

Unit 3: Students investigate the way Indonesian speakers interpret and express ideas, and negotiate and persuade in Indonesian through the study of three or more subtopics from the prescribed themes and topics. Students interpret information, inform others, and reflect upon and develop persuasive arguments. They access and share information on the subtopics

Note: If there are not enough students for any language class to proceed, students will be provided with the option of studying their selected language via distance education through the Victorian School of Languages.

through Indonesian, and consolidate and extend vocabulary and grammar knowledge and language skills. Students consider the influence of language and culture in shaping meaning and reflect on the practices, products and perspectives of the cultures of Indonesian-speaking communities. They reflect on how knowledge of Indonesian and Indonesian-speaking communities can be applied in a range of contexts and endeavours, such as further study, travel, business or community involvement.

Unit 4: Students investigate aspects of culture through the study of two or more subtopics from the prescribed themes and topics. Students build on their knowledge of Indonesian-speaking communities, considering cultural perspectives and language and explaining personal observations. Students consolidate and extend vocabulary, grammar knowledge and language skills to investigate the topics through Indonesian. Students identify and reflect on cultural products or practices that provide insights into Indonesian-speaking communities. Students reflect on the ways culture, place and time influence values, attitudes and behaviours. They consider how knowledge of more than one culture can influence the ways individuals relate to each other and function in the world.



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

Unit 1: How are behaviour and mental processes shaped?

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

- evaluate the role social cognition plays in a person's attitudes, perception of themselves and relationships with others.
- explore a variety of factors and contexts that can influence the behaviour of individuals and groups, recognising that different cultural groups have different experiences and values.

- Students are encouraged to consider Aboriginal and Torres Strait Islander people's experiences within Australian society and how these experiences may affect psychological functioning.
- examine the contribution that classical and contemporary research has made to the understandings of human perception and why individuals and groups behave in specific ways.
- investigate how perception of stimuli enables a person to interact with the world around them and how their perception of stimuli can be distorted.

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

- investigate the contribution that classical and contemporary research has made to the understanding of the functioning of the nervous system and to the understanding of biological, psychological and social factors that influence learning and memory.
- investigate how the human nervous system enables a person to interact with the world around them.
- explore how stress may affect a person's psychological functioning and consider stress as a psychobiological process, including emerging research into the relationship between the gut and the brain in psychological functioning.
- investigate how mechanisms of learning and memory lead to the acquisition of knowledge and the development of new and changed behaviours.
- consider models to explain learning and memory as well as the interconnectedness of brain regions involved in memory.
- The use of mnemonics to improve memory is explored, including Aboriginal and Torres Strait Islander peoples' use of place as a repository of memory.
- A student-designed scientific investigation involving the generation of primary data related to mental processes and psychological functioning is undertaken in either Unit 3 or Unit 4.

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



Biology

Biology is the study of living things from familiar, complex multicellular organisms that live in the many different habitats of our biosphere to single celled micro-organisms that live in seemingly inhospitable conditions. It is a study of the dynamic relationships between living things, and their environment and the challenges of survival. All living things have many structural and functional characteristics in common, which can be used to classify and group organisms.

Modern biology draws on biochemistry, neuroscience, genetics, evolutionary biology, behavioural science, and cell and molecular biology. It connects with physics, chemistry, earth and space sciences in exploring the nature of past and present life, and the possibility of life forms beyond our planet.

Students develop knowledge of bioscience and skills of science inquiry and the values and attributes that will help them to consider issues and implications associated with the application of biological techniques and technologies.

Year 11

Unit 1: How do living things stay alive?

Area of study 1: How do organisms regulate their functions?

In this unit students will:

- ▷ examine the cell as the structural and functional unit of life, from the single celled to the multicellular organism, including the requirements for sustaining cellular processes.
- ▷ focus on cell growth, replacement and death and the role of stem cells in differentiation, specialisation and renewal of cells.
- ▷ explore how systems function through cell specialisation in vascular plants and animals, and consider the role homeostatic mechanisms play in maintaining an animal's internal environment.
- ▷ A student-adapted or student-designed scientific investigation is undertaken in Area of Study 3. The investigation involves the generation of primary data and is related to the function and/or the regulation of cells or systems. The investigation draws on the key science skills and key knowledge from Area of Study 1 and/or Area of Study 2.

Unit 2: How does inheritance impact on diversity?

In this unit students will:

- ▷ explore reproduction and the transmission of biological information from generation to generation and the impact this has on species diversity.
- ▷ apply their understanding of chromosomes to explain the process of meiosis.

- ▷ consider how the relationship between genes, and the environment and epigenetic factors influence phenotypic expression.
- ▷ explain the inheritance of characteristics, analyse patterns of inheritance, interpret pedigree charts and predict outcomes of genetic crosses.
- ▷ analyse the advantages and disadvantages of asexual and sexual reproductive strategies, including the use of reproductive cloning technologies.
- ▷ study structural, physiological and behavioural adaptations that enhance an organism's survival.
- ▷ explore interdependences between species, focusing on how keystone species and top predators structure and maintain the distribution, density and size of a population. They also consider the contributions of Aboriginal and Torres Strait Islander knowledge and perspectives in understanding the survival of organisms in Australian ecosystems.
- ▷ A student-directed research investigation into a contemporary ethical issue is to be undertaken in Area of Study 3. The investigation relates to the application of genetic knowledge, reproductive science, inheritance or adaptations and interdependencies beneficial for survival.

Year 12

Unit 3: How do cells maintain life?

In this unit students will:

- ▷ investigate the workings of the cell from several perspectives.
- ▷ explore the relationship between nucleic acids and proteins as key molecules in cellular processes.
- ▷ analyse the structure and function of nucleic acids as information molecules, gene structure and expression in prokaryotic and eukaryotic cells and proteins as a diverse group of functional molecules.
- ▷ examine the biological consequences of manipulating the DNA molecule and applying biotechnologies.
- ▷ explore the structure, regulation and rate of biochemical pathways, with reference to photosynthesis and cellular respiration.
- ▷ explore how the application of biotechnologies to biochemical pathways could lead to improvements in agricultural practices.
- ▷ apply their knowledge of cellular processes through investigation of a selected case study, data analysis and/or a bioethical issue.

Unit 4: How does life change and respond to challenges over time?

In this unit students will:

- ▷ consider the continual change and

challenges to which life on Earth has been, and continues to be, subjected to.

- ▷ study the human immune system and the interactions between its components to provide immunity to a specific pathogen.
- ▷ consider how the application of biological knowledge can be used to respond to bioethical issues and challenges related to disease.
- ▷ consider how evolutionary biology is based on the accumulation of evidence over time.
- ▷ investigate the impact of various change events on a population's gene pool and the biological consequences of changes in allele frequencies.
- ▷ examine the evidence for relatedness between species and change in life forms over time using evidence from paleontology, structural morphology, molecular homology and comparative genomics.
- ▷ examine the evidence for structural trends in the human fossil record, recognising that interpretations can be contested, refined or replaced when challenged by new evidence.
- ▷ Students demonstrate and apply their knowledge of how life changes and responds to challenges through investigation of a selected case study, data analysis and/or bioethical issue.

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. Chemistry is a perfect platform from which you can launch into many different career paths.

Many people develop 'applied' knowledge of chemistry through their careers and day-to-day pursuits. This includes agriculture, photography, forensic science, medicine, sports science and environmental studies.

Year 11

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

The development and use of materials for specific purposes is an important human endeavour. In this unit students will:

- ▷ investigate the chemical properties of a range of materials from metals and salts to polymers and nanomaterials
- ▷ use 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.
- ▷ 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.

- ▷ be introduced to quantitative concepts in chemistry including the mole concept.
- ▷ apply their knowledge to determine the relative masses of elements and the composition of substances.
- ▷ use chemistry terminology including symbols, formulas, chemical nomenclature and equations to represent and explain observations and data from experiments, and to discuss chemical phenomena.
- ▷ A research investigation is undertaken in Area of Study 3 related to one of ten options that draw upon and extend the content from Area of Study 1 and/or Area of Study 2.

Unit 2: What makes water such a unique chemical?

- ▷ Water is the most widely used solvent on Earth. In this unit students will:
- ▷ explore the physical and chemical properties of water, the reactions that occur in water and various methods of water analysis.
- ▷ examine the polar nature of a water molecule and the intermolecular forces between water molecules.
- ▷ 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.
- ▷ be 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.
- ▷ use chemistry terminology including symbols, units, formulas and equations to represent and explain observations and data from experiments, and to discuss chemical phenomena.
- ▷ explore the solvent properties of water in a variety of contexts and analyse selected issues associated with substances dissolved in water.

Year 12

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

The global demand for energy and materials is increasing with world population growth. In this unit students will:

- ▷ explore energy options and the chemical production of materials with reference to efficiencies, renewability and the minimisation of their impact on the

environment.

- ▷ compare and evaluate different chemical energy resources, including fossil fuels, biofuels, galvanic cells and fuel cells.
- ▷ investigate the combustion of fuels, including the energy transformations involved, the use of stoichiometry to calculate the amounts of reactants and products involved in the reactions, and calculations of the amounts of energy released and their representations.
- ▷ consider the purpose, design and operating principles of galvanic cells, fuel cells and electrolytic cells. In this context they use the electrochemical series to predict and write half and overall redox equations, and apply Faraday's laws to calculate quantities in electrolytic reactions.
- ▷ analyse manufacturing processes with reference to factors that influence their reaction rates and extent.
- ▷ investigate and apply the equilibrium law and Le Chatelier's principle to different reaction systems, including to predict and explain the conditions that will improve the efficiency and percentage yield of chemical processes.
- ▷ use the language and conventions of chemistry including symbols, units, chemical formulas and equations to represent and explain observations and data collected from experiments, and to discuss chemical phenomena.
- ▷ A student practical investigation related to energy and/or food is undertaken either in Unit 3 or Unit 4, or across both Units 3 and 4, and is assessed in Unit 4, Outcome 3.

Unit 4: How are organic compounds categorised, analysed and used?

The carbon atom has unique characteristics that explain the diversity and number of organic compounds that not

only constitute living tissues but are also found in the fuels, foods, medicines and many of the materials we use in everyday life. In this unit students will:

- ▷ investigate the structural features, bonding, typical reactions and uses of the major families of organic compounds including those found in food.
- ▷ study the ways in which organic structures are represented and named.
- ▷ process data from instrumental analyses of organic compounds to confirm or deduce organic structures, and perform volumetric analyses to determine the concentrations of organic chemicals in mixtures.
- ▷ consider the nature of the reactions involved to predict the products of reaction pathways and to design pathways to produce particular compounds from given starting materials.
- ▷ investigate key food molecules through an exploration of their chemical structures, the hydrolytic reactions in which they

are broken down and the condensation reactions in which they are rebuilt to form new molecules. In this context the role of enzymes and coenzymes in facilitating chemical reactions is explored.

- ▷ use calorimetry as an investigative tool to determine the energy released in the combustion of foods.

Physics

VCE Physics provides an introduction to the science of Physics, which is both theoretical and empirical, and contributes to our understanding of the physical universe from the minute building blocks of matter to the unimaginably broad expanses of the Universe. Knowledge in physics has led to innovations in medicine, electronics, energy use, telecommunications and materials science.

The curriculum is interesting, practical and challenging combining practical activities and learning the theory and models used to explain physical phenomena. Students learn the language, methods and major ideas of physics and develop a capacity to communicate their knowledge of physics effectively.

VCE Physics class work and assessment includes the use of a range of technologies, empirical techniques, mathematical methods and problem solving. Practical skills to investigate hypotheses collect and analyse data, and draw conclusions are developed to support students' understanding of theories and models and a significant part of the SAC is based on practical investigation.

The knowledge gained through studying VCE Physics will enhance students' ability to be innovative and contribute to the intelligent and careful use of resources. This knowledge can be used, for example, in industrial, medical, engineering and technical applications.

Year 11

Unit 1: Explaining the Physical World

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 will:

- ▷ explore how physics explains phenomena, at various scales, which are not always visible to the unaided human eye.
- ▷ examine some of the fundamental ideas and models used by physicists in an attempt to understand and explain the world.
- ▷ consider thermal concepts by investigating heat, probe common analogies used to explain electricity and consider the origins and formation of matter.

- ▷ use thermodynamic principles to explain phenomena related to changes in thermal energy.
- ▷ apply thermal laws when investigating energy transfers within and between systems, and assess the impact of human use of energy on the environment.
- ▷ examine the motion of electrons and explain how it can be manipulated and utilised.
- ▷ explore current scientifically accepted theories that explain how matter and energy have changed since the origins of the Universe.
- ▷ undertake quantitative investigations involving at least one independent, continuous variable

Unit 2: Experiments about the Physical World

In this unit students will:

- ▷ explore the power of experiments in developing models and theories.
- ▷ investigate a variety of phenomena by making their own observations and generating questions.
- ▷ 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.
- ▷ 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.
- ▷ Students design and undertake investigations involving at least one independent, continuous variable. A student designed practical investigation relates to content drawn from Area of Study 1 and/or Area of Study 2 and is undertaken in Area of Study 3.



Year 12

Unit 3: How do fields explain motion and electricity?

In this unit students will:

- ▷ explore the importance of energy in explaining and describing the physical world.
- ▷ examine the production of electricity and its delivery to homes.
- ▷ consider the field model as a construct that has enabled an understanding of why objects move when they are not apparently in contact with other objects. Applications of concepts related to fields include the transmission of electricity over large distances and the design and operation of particle accelerators.
- ▷ explore the interactions, effects and applications of gravitational, electric and magnetic fields.
- ▷ use Newton's laws to investigate motion in one and two dimensions, and are introduced to Einstein's theories to explain the motion of very fast objects.
- ▷ consider how developing technologies can challenge existing explanations of the physical world, requiring a review of conceptual models and theories.
- ▷ Students design and undertake investigations involving at least two continuous independent variables. A student-designed practical investigation related to waves, fields or motion is undertaken either in Unit 3 or Unit 4, or across both Units 3 and 4.

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

A complex interplay exists between theory and experiment in generating models to explain natural phenomena including light. Wave theory has classically been used to explain phenomena related to light; however, continued exploration of light and matter has revealed the particle-like properties of light. On very small scales, light and matter – which initially seem to be quite different – have been observed as having similar properties. In this unit students will:

- ▷ explore the use of wave and particle theories to model the properties of light and matter.
- ▷ They examine how the concept of the wave is used to explain the nature of light and explore its limitations in describing light behaviour.
- ▷ further investigate light by using a particle model to explain its behaviour. A wave model is also used to explain the behaviour of matter which enables students to consider the relationship between light and matter.
- ▷ learn to think beyond the concepts experienced in everyday life to study the physical world from a new perspective. Students design and undertake investigations involving at least two continuous independent variables. A student-designed practical investigation related to waves, fields or motion is undertaken either in Unit 3 or Unit 4, or across both Unit 3 and Unit 4.

Sample study program for:

Science

A traditional course. Each tertiary institution has their own criteria- make sure you seek advice from your careers teacher.

Subject	Units			
	1	2	3	4
English	×	×	×	×
Math Methods	×	×	×	×
Physics	×	×	×	×
Chemistry	×	×	×	×
Specialist Maths	×	×	×	×
Additional Unit	×	×		

TAFE

Certificate/Diploma courses in:

Air Traffic Controller, Pilot, Sound Technician, Draftsperson, Cartographer, Marine Engineer, Survey Drafter, Laboratory Technician, Refrigeration Mechanic and many more...

UNIVERSITY

Associate Diplomas/Bachelor Degrees in:

Aerospace Engineer, Agricultural Scientist, Astronomer, Medical Practitioner, Nuclear Medicine Technologist, Pharmacist, Veterinarian, Ship's Captain and Forensic Scientist.

Food Studies

Year 11

Unit 1: Food origins

This unit focuses on food from historical and cultural perspectives and investigates the origins and roles of food through time and across the world. Students explore how humans have historically sourced their food, examining the general progression from hunter-gatherer to rural-based agriculture, to today's urban living global trade in food. Students consider the origins and significance of food through inquiry one food-producing region of the world.

Students also investigate Australian indigenous food prior to European settlement and how food patterns have changed since, particularly through the influence of food production, processing and manufacturing industries and immigration. Students investigate cuisines that are part of Australia's culinary identity today and reflect on the concept of an Australian cuisine. They consider the influence of innovations, technology and globalisation on food patterns.

Unit 2: Food makers

In this unit students investigate food systems in contemporary Australia, exploring both commercial food production industries and food production in small-scale domestic settings, as both a comparison and complement to commercial production.

Students gain insight into the significance of food industries to the Australian economy and investigate the capacity of industry to provide safe, high-quality food that meets the needs of consumers.

Students produce foods and consider a range of evaluation measures to compare their foods to commercial products. They consider the effective provision and preparation of food in the home and analyse the benefits and challenges of developing and using practical food skills in daily life. Students design new food products and adapt recipes to suit particular needs and circumstances. They consider the possible extension of their role as small-scale food producers by exploring potential entrepreneurial opportunities.



Year 12

Unit 3: Food in daily life

This unit investigates the many roles and everyday influences of food. Students explore the science of food – they consider the physiology of eating, the microbiology of digestion, the role of diet on gut health and appreciating food.

Students analyse the scientific rationale behind the Australian Dietary Guidelines and the Australian Guide to Healthy Eating and develop their understanding of diverse nutrient requirements.

Students also investigate how communities, families and individuals change their eating patterns over time and how our food values and behaviours develop within social environments. Students inquire into the role of food in shaping and expressing identity and connectedness and the ways in which food information can be filtered and manipulated. They investigate behavioural principles that assist in the establishment of lifelong, healthy dietary patterns. The practical component of this unit enables students to understand food science terminology and to apply specific techniques to the production of everyday food that facilitates the establishment of nutritious and sustainable meal patterns.

Unit 4: Food issues, challenges and futures

In this unit students examine debates about global and Australian food systems as part of the global food systems and describe key issues relating to the challenge of adequately feeding a rising world population. Students focus on issues related to the environment, ecology, ethics, farming practices, the development and application of technologies, and the challenges of food security, food safety, food wastage, and the use and management of water and land.

Students also investigate individual responses to food information and misinformation and the development of food knowledge, skills and habits to empower consumers to make discerning food choices. Students consider how to assess information and draw evidence-based conclusions, and apply this methodology to navigate contemporary food fads, trends and diets. Students' food production repertoire reflects the Australian Dietary Guidelines and the Australian Guide to Healthy Eating.

Sample study program for:

Food Studies

A traditional course. Each tertiary institution has their own criteria, make sure you seek advice from your careers teacher.

Subject	Units			
	1	2	3	4
English	X	X	X	X
Food Studies	X	X	X	X
Maths	X	X	X	X
Health	X	X	X	X
Additional Unit	X	X	X	X
Additional Unit	X	X		

Recommended additional units:
PE, Psychology, Business Management, Biology, VET Hospitality, Chemistry, Industry & Enterprise.

TAFE

Certificate/Diploma courses in:
Hospitality Courses, Certificate II in Kitchen Operations, Certificate IV in Hospitality.

UNIVERSITY

Associate Diplomas/Bachelor Degrees in:
Bachelor of Home Economics, Bachelor of Food Science, Bachelor of Dietetics, Bachelor of Nutrition.

Possible employment outcomes after TAFE/University:
Apprenticeships: Chef, Baker, Pastry Chef, Cook, Butcher. Kitchenhand, Bar Work, Food Technology Teacher, Food Technician, Food Scientist, Dietician, Food Photographer.

Computing

Year 11

Unit 1: Computing

In this unit students focus on how data, information and networked digital systems can be used to meet a range of users' current and future needs. The software featured include: Microsoft Excel, Adobe Fireworks CS6, Adobe Dreamweaver CS6 and Microsoft Visio.

Unit 2: Computing

In this unit students focus on data and how the application of computational, design and systems thinking skills support the creation of solutions that automate the processing of data. The software featured includes Visual Basic for programming, Microsoft Excel and Microsoft Access for data manipulation.

Year 12

Entry to Units 3 & 4

It is highly recommended students have studied Units 1 & 2 Computing prior to undertaking Units 3 & 4.

Unit 3: Informatics

In Unit 3 Informatics students consider data and how it is acquired, managed, manipulated and interpreted to meet a range of needs. The software featured includes Adobe Fireworks CS6, Adobe Dreamweaver CS6, Microsoft Access and Microsoft Visio.

Unit 4: Informatics

In Unit 4 students focus on strategies and techniques for manipulating, managing and securing data and information to meet a range of needs. The software featured includes Adobe Fireworks CS6, Adobe Dreamweaver CS6, Microsoft Access and Microsoft Visio.

Unit 3: Software Development

In Unit 3 students develop a detailed understanding of the analysis, design and development stages of solving a problem and use a programming language to create working software modules. The programming language C# will be the major software features.

Unit 4 Software Development

In this unit students focus on how the information needs of individuals and organisations are met through the creation of software solutions used in a networked environment. The programming language C# will be the major software featured. Legal issues and integrity of solutions will also be studied.



Sample study program for:

Computing

A traditional course. Each tertiary institution has their own criteria, make sure you seek advice from your careers teacher.

Subject	Units			
	1	2	3	4
English	×	×	×	×
Software Development	×	×	×	×
IT Applications	×	×	×	×
Maths	×	×	×	×
Additional Unit	×	×	×	×
Additional Unit	×	×		

TAFE

Certificate/Diploma courses in:

Computer Systems Engineering, ICT, Information Systems/Networking, Software Development/Engineering, Computer Science, Games and Graphic Programming, Games Design.

UNIVERSITY

Associate Diplomas/Bachelor Degrees in:

Digital Media Technology, Digital and Interactive Games, Computer Science, Games Design/Development, Games Programming, Information Technology.

Product Design & Technology

These units can have a focus on wood or metal areas but cover the same syllabus.

Year 11

Unit 1: Product Re-design and Sustainability

This unit focuses on the analysis, modification and improvement of a product design with consideration of the materials used and issues of sustainability. Using the Design process students produce a re-designed product safely using tools, equipment, machines and materials and compare it with the original design.

Unit 2: Collaborative Design

In this unit students work in teams to design and develop an item in a product range or contribute to the design, planning and production of a group product. They focus on factors including: human needs and wants; function, purpose and context for product design; aesthetics; materials and sustainability; and the impact of these factors on a design solution.

Year 12

Unit 3: Applying the Product Design Process

In this unit students are engaged in the design and development of a product that meets the needs and expectations of a client and/or an end-user, developed through a design process and influenced by a range of complex factors. These factors include the purpose, function and context of the product; human centred design factors; innovation and creativity; visual, tactile and aesthetic factors; sustainability concerns; economic limitations; legal responsibilities; material characteristics and properties; and technology.

Unit 4: Product Development and Evaluation

In this unit students continue to develop, manufacture and evaluate the product designed in Unit 3. Students learn that evaluations are made at various points of product design, development and production. In the role of designer, students judge the suitability and viability of design ideas and options referring to the design brief and evaluation criteria in collaboration with a client and/or an end-user.

School fees provide for a basic model only. If a student chooses to make a model other than the basic model, they will need to provide their own materials or pay for the extra materials prior to ordering.

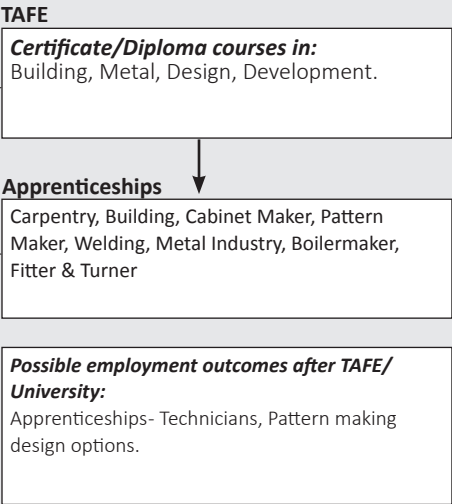


Sample study program for:

Product Design & Technology

A traditional course. Each tertiary institution has their own criteria, make sure you seek advice from your careers teacher.

Subject	Units			
	1	2	3	4
English	×	×	×	×
Maths	×	×	×	×
Product Design & Technology	×	×	×	×
Physics	×	×	×	×
VET Course in Wood or Metal or Carpentry	×	×	×	×
Additional Unit	×	×		



Systems Engineering

Year 11

Unit 1: Introduction to Mechanical Systems

This unit focuses on engineering fundamentals as the basis of understanding underlying principles and the building blocks that operate simple to more complex mechanical devices.

This unit contains the fundamental physics and theoretical understanding of mechanical systems and how they work, the main focus is on the construction of a system such as a lifting device like a crane. The construction process draws heavily upon design and innovation.

All systems require some form of energy to function. Through research, students explore and quantify how systems use or convert the energy supplied to them.

In this unit, students are introduced to the Systems Engineering Process. They are introduced to the fundamental mechanical engineering principles, including recognition of mechanical subsystems and devices, their motions, the elementary applied physics, and the related mathematical calculations that can be applied to define and explain the physical characteristics of these systems.

Unit 2: Introduction to Electro technology Systems

In this unit, students study fundamental electro technology engineering principles. Through the application of their knowledge and the Systems Engineering Process, students produce operational systems that may also include mechanical components. Students explore electro technology systems and how they work, and construct a remote control planetary vehicle with suspension. The construction process draws heavily upon design and innovation.

Students study fundamental electro technology principles including applied electrical theory, representation of electronic components and devices, elementary applied physics in electrical circuits, and mathematical calculations that can be applied to define and explain electrical characteristics of circuits. The unit offers opportunities for students to apply their knowledge in the design, construction, testing and evaluation of an operational system. The system should be predominately electro technically based, but would generally have electro-mechanical components within the system.

Year 12

Unit 3: Integrated Systems Engineering and Energy

In this unit students study the engineering principles that are used to explain the physical properties of integrated systems and how they work. Through the application of their knowledge, student's design and plan an operational, mechanical-electro technology integrated and controlled system. They learn about the technologies used to harness energy sources to provide power for engineered systems.

Students commence work on the designing and planning of one substantial controlled integrated system. This project has a strong emphasis on designing, testing and innovation of their integrated system.

Students learn about sources and types of energy that enable engineered technological systems to function. Comparisons are made between the impacts of the use of renewable and non-renewable energy sources. Students learn about the technological systems developed to capture and store renewable energy and technological developments to improve the credentials of non-renewables.

Unit 4: Systems Control and New and Emerging Technologies

In this unit students produce, test and evaluate the integrated controlled system they designed in Unit 3. Students investigate new and emerging technologies, consider reasons for their development and analyse their impacts.

Students use their investigations, design and planning to continue the fabrication of their mechanical-electro technology integrated and controlled system using the Systems Engineering Process. They use project and risk management methods through the construction of the system and use a range of materials, tools, equipment, and components, students test, diagnose and analyse the performance of the system as well evaluate the processes and the system.

Students expand their knowledge of new and emerging technology developments through their investigation and analysis of a range of engineered systems. They analyse a specific new or emerging technology, including its impacts.

School fees provide for a basic model only. If a student chooses to make a model other than the basic model, they will need to provide their own materials or pay for the extra materials prior to ordering.

Sample study program for:

Systems Engineering

A traditional course- each tertiary institution has their own criteria- make sure you seek advice from your careers teacher.

Subject	Units			
	1	2	3	4
English	X	X	X	X
Maths	X	X	X	X
Systems Eng.	X	X	X	X
Physics	X	X	X	X
VET Course in Electrical, Automotive or Electronics	X	X	X	X
Additional Unit	X	X		

TAFE

Certificate/Diploma courses in:
Electronics, Engineering, Automotive.

UNIVERSITY

Associate Diplomas/Bachelor Degrees in:
Engineering.

Possible employment outcomes after TAFE/University:

Apprenticeships- Electrician, Electronics Technician, Auto Electrician, Motor Mechanic, Mechanical Fitter, Engineer.

Career Planning

Job Title						
Employment Opportunities						
Qualification required for job						
Education Requirements (secondary college)	Year 10	Year 11	Year 12	VCE	VCE-VM	VET
Post Secondary Education Required:	None	TAFE	University	Other		
Course Title						
Institutions that offer this course are:	1					
	2					
	3					
ATAR Score						
Application Procedures						
Additional Prerequisites						
Secondary College Preparation:	Subjects that are required/recommended for this job/course:					
	1					
	2					
	3					
	4					
	5					
	6					

Review

Questions to consider	Yes	No
Have I selected the appropriate subjects to help me achieve my goal?		
Are the subjects required for the job/course available to me?		
Are my school results good enough to achieve my goal?		
Do I need to modify my behaviour/actions in order to achieve my goal?		
Is the course I need to do to achieve my goal available locally?		
If not, is attending an institution elsewhere a viable alternative?		
Does this career offer the salary and benefits I need?		
Is the career I am considering really what I want?		
If necessary, am I willing to leave the region to find employment in my area of interest?		
Do any of the related occupations interest me?		

Career Planning

Job Title						
Employment Opportunities						
Qualification required for job						
Education Requirements (secondary college)	Year 10	Year 11	Year 12	VCE	VCE-VM	VET
Post Secondary Education Required:	None	TAFE	University	Other		
Course Title						
Institutions that offer this course are:	1					
	2					
	3					
ATAR Score						
Application Procedures						
Additional Prerequisites						
Secondary College Preparation:	Subjects that are required/recommended for this job/course:					
	1					
	2					
	3					
	4					
	5					
	6					

Review

Questions to consider	Yes	No
Have I selected the appropriate subjects to help me achieve my goal?		
Are the subjects required for the job/course available to me?		
Are my school results good enough to achieve my goal?		
Do I need to modify my behaviour/actions in order to achieve my goal?		
Is the course I need to do to achieve my goal available locally?		
If not, is attending an institution elsewhere a viable alternative?		
Does this career offer the salary and benefits I need?		
Is the career I am considering really what I want?		
If necessary, am I willing to leave the region to find employment in my area of interest?		
Do any of the related occupations interest me?		