YEAR 12 VCE COURSE SELECTION HANDBOOK





St Albans Secondary College Main Road East ST ALBANS, 3021

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2024 YEAR 12 VCE UNITS 3 AND 4 COURSE SELECTION HANDBOOK

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PRINCIPAL'S MESSAGE

We are pleased to present this VCE Handbook as a part of the school's Pathways Program to assist students in their selection of suitable courses and pathways.

The Handbook contains up to date information on the content of VCE Units to be offered in 2024 at our school, as well as the requirements needed to satisfactorily complete each unit of work.

This Handbook serves as a guide only for students, and should be used in conjunction with advice from the Careers and Course Selection Teams, and the relevant VCAA study and course guides.

We wish you every success in your senior years.

Kerrie Dowsley Principal

CAREERS INTRODUCTION

Choosing a Career

Choosing your subjects to support your career path is an important decision. It is normal to be undecided about your career goals. You should not feel anxious about this. To help you clarify the direction that is right for you, some of the following ideas might be useful.

- 1. many people as possible about the work they do.
- 2. particular job is right for you.
- 3. by visiting the Careers Room and talking to the Careers team at school.
- 4. Check out the following web pages:
 - My Future <u>www.myfuture.edu.au</u> ٠
 - VTAC Course Link www.vtac.edu.au Select 'Explore Options'
- Remember to speak with your current teachers about your subject selection. 5.

Other people who can offer support:

Ms Armstrong	Careers/Pathways/VET Coording
Ms Cassar	Senior Sub School Leader
Ms Woods	Assistant Senior Sub School Leo
Mr Olthof	Senior Sub School Coordinator
Mr Krysinski	Senior Sub School Coordinator
Ms Gough	Senior Sub School and VCE - V
Ms Pannu	Senior Sub School Coordinator

Learning Area Coordinators:

Mr D'Aglas	Arts	l
Ms Pantelli	Drama	l
Mr Orchard	Music	l
Mr Stammers	Commerce	l
Mr Rowland	English	I
Mr Lac	English as an Additional Language	l
Mr Lakovski	Health & Physical Education	I
Ms O'Connell	Humanities	

Talk to People - A good way of finding out what jobs are most likely to appeal to you is by talking to as

Work Experience - This can give you an insight into the world of work and an awareness of whether a

Vocational Guidance - There are people who can offer you specialised help in the careers area. Begin

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/ocational Major (VM) Coordinator

Mr McCall Ms Narasaki Mr Vincent Ms Hanley Ms Panayiotou Ms Gough

Mr Krysinski

Digital Technology LOTE Mathematics Science Design Technology VCE - Vocational Major Learning Coordinator VCE Learning Coordinator

VCE UNITS 1 AND 2 OFFERED AT ST ALBANS SECONDARY COLLEGE

VCE – Vocational Major students, please see extra resource package

- Accounting ٠
- Applied Computing
- Art Making and Exhibiting ٠
- Biology ٠
- Business Management
- Bridging EAL
- Chemistry ٠
- Drama
- Economics .
- English ٠
- English as an Additional Language (EAL)
- Food Studies .
- Geography
- Health and Human Development
- History Ancient History ٠
- History Modern History ٠
- Legal Studies
- Literature
- LOTE
 - Italian
 - Japanese
 - Vietnamese (1st Language)
- Mathematics
 - General Mathematics
 - Mathematical Methods
 - Specialist Mathematics
- Physical Education ٠
- Physics
- Politics
- Psychology ٠
- VCE Vocational Major ٠
- VET Certificate II in Cookery
- VET Certificate II in Fashion, Apparel and Textiles
- VET Certificate III in Information Technology ٠
- VET Certificate III in Music (Performance) •
- VET Brimbank Cluster Subjects (See Handbook)
- Visual Communication Design ٠
- Woodwork

All units offered are dependent on sufficient numbers of students enrolling for the class to be timetabled. If not enough students choose a particular subject, it will be withdrawn from offer. Students will then be asked to select an alternative unit.

VCE UNITS 3 AND 4 OFFERED AT ST ALBANS SECONDARY COLLEGE

VCE – Vocational Major students, please see extra resource package

- Accounting
- ٠ Art Making and Exhibiting
- Australian Politics
- Biology
- Business Management
- Chemistry
- Data Analytics •
- Drama ٠
- Economics
- English •
- English as an Additional Language (EAL) •
- Food Studies •
- Geography
- Health and Human Development •
- History Revolutions
- Legal Studies
- Literature
- LOTE •
 - Italian
 - Japanese
 - Vietnamese (1st Language)
- Mathematics
 - General Mathematics
 - Mathematical Methods
 - Specialist Mathematics
- Physical Education
- Physics ٠
- Psychology
- VCE Vocational Major •
- VET Certificate II in Apparel, Fashion and Textiles
- VET Certificate III in Music (Performance) ٠
- Visual Communication Design
- Woodwork

All units offered are dependent on sufficient numbers of students enrolling for the class to be timetabled. If not enough students choose a particular subject, it will be withdrawn from offer. Students will then be asked to select an alternative unit.

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VCE UNITS OFFERED AT ST ALBANS SECONDARY COLLEGE

This is a full list of the VCE Units offered and in which of the Key Learning Areas they belong.

For more information on any of the units refer to the detailed descriptions that occur later in this booklet.

Units Offered

Arts

Art Making and Exhibiting Drama Visual Communication Design VET - Certificate III in Music (Performance)

Commerce

Accounting **Business Management** Economics Legal Studies

English / English as an Additional Language (EAL) English English as an Additional Language (EAL) Literature

Design Technology

Design and Technology VET - Certificate II in Cookery VET - Certificate II in Apparel, Fashion and Textiles Woodwork

Digital Technology:

Applied Computing VET - Certifcate III Information Technology

Data Analytics

Units Offered

Health and Human Development Health and Human Development Physical Education

Humanities Australian Politics and Global Politics Geography History - Modern History History - Revolutions

LOTE Italian Japanese (2nd Language) Vietnamese (1st Language)

Mathematics General Mathematics Mathematical Methods Specialist Mathematics

Science Biology Chemistry Physics Psychology

VCE – Vocational Pathways 2024 - VCE - Vocational Major

VET (See Cluster Handbook)

MATHEMATICS PATHWAY **RECOMMENDATION YEAR 12 IN 2024**

My Year 11 Mathematics Teacher has confirmed that my Semester 1 Assessment Task results are:

General Mathematics		Mathematical Methods		Specialist Mathematics	
ASSESSMENT TASK	SCORE %	ASSESSMENT TASK	SCORE %	ASSESSMENT TASK	SCORE %
Topic Tests		Topic Tests		Topic Tests	
Analysis Task		Analysis Task		Analysis Task	
Semester		Semester		Semester	
Examination #1		Examination #1		Examination #1	
Semester		Semester		Semester	
Examination #2		Examination #2		Examination #2	

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Date: .

In 2023, I have met the prerequisites to study (in 2024): Tick the appropriate box/s below

Mathematics Subjects	Prerequisites		
Units 3 & 4 Specialist Mathematics (Must be taken with Mathematical Methods)	Maintain a 'B+' or above average for Units 1 & 2 Mathematical Methods and Units 1 & 2 Specialist Mathematics		
Units 3 & 4 Mathematical Methods (Must be taken with either Specialist Mathematics or General Mathematics)	Maintain a 'C' or above average for Units 1 & 2 Mathematical Methods		
Units 3 & 4 General Mathematics	Satisfactory completion of Units 1 & 2 General Mathematics OR completion of Units 1 & 2 Mathematical Methods		
No Mathematics Preferred			

I acknowledge I have not met the prerequisites for the Mathematics course I wish to study.

My parent has requested a meeting be arranged with my Year Level Coordinator after course counselling.

Student Signature.....

Parent Signature

Student Name: Home Group ...

. Signature

COURSE PLANNING PAGE - YEAR 12

Na	m	۵.
nu		с.

Current Year 11 Program

	Unit 1
1.	
2.	
3.	
4.	
5.	
6.	

Proposed Year 12 Program

FIRST CHOICES	1.	
filled with either English, EAL		*Students choosing EAL must bring a copy of their VCAA Application for EAL Form to their interview. This form must have been signed by Mr Lac.
or Literature. Slots 2 - 5 are	2.	
open to any subject.	3.	
5	4.	
	5.	
RESERVES Select 2	1.	
backup subjects	2.	

HG:

Unit 2

Preferred Career Pathway (students must fill in this area)

Tertiary Course or Employment Interest Area:			
Coordinator's Signature:	Date:		
Student Signature:	Date:		
Parent or Guardian Signature:	Date:		

Have there been any changes to your subjects?

If you have selected new subjects in your proposed Year 12 program, please indicate why you have done so and ensure you have your coordinators signature above.

ARTS

ART MAKING AND EXHIBITING

Unit 1: Explore, Expand and Investigate

The unit is designed to assist students to explore materials, techniques and processes used to create a range of different art forms. Students explore, experiment, document and evaluate their use of a range of media in their Visual Journals.

Areas of Study

- Explore materials, techniques and art forms.
- Expand make an artwork, present the artwork and reflect on how techniques have been used to represent • ideas.
- Investigate research Australian Artists and present information about them in an exhibition proposal.

Unit 1 Outcomes

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

- record and document art making processes including media exploration in a visual journal •
- create an artwork in a specific art form
- identify the conventions for presenting different art forms
- produce promotional materials for Artworks by Australian Artists that include information about media,

Unit 2: Understand, Develop and Resolve

The focus of this unit is to understand how artworks are conceived, made and displayed.

Areas of Study

- Understand ideas, artworks and exhibition.
- Develop theme, aesthetic qualities and style.
- Resolve ideas, subject matter and style.

Unit 2 Outcomes

Thematic Exhibition

Students select a range of artworks to create their own themed exhibition. Three artworks from an exhibition attended and three artworks sourced by the student are included in the exhibition. An oral report is supported by an exhibition proposal that includes written statements exploring the theme, a theme based justification of the artworks selected, sketches of the exhibition and an overview statement.

- **Experimental Artworks and Documentation** Students explore aesthetic qualities of artworks. They produce a series of experimental artworks based on a teacher selected theme. Ideas and techniques are recorded, refined and documented in a Visual Arts Journal.
- Finished Artwork At least one finished artwork, derived from outcome 2 journal experiments.

materials and application techniques, and the representation of ideas and communication of subject matter.

ARTS

DRAMA

Unit 3: Ensemble Performance

Students are involved in the development of an ensemble performance drawing on subject matter from a range of sources using non-naturalistic styles from a range of traditions. The processes involved in the development and realization of the ensemble performance are evaluated. A non-naturalistic work selected from the prescribed play list will also be analysed.

Areas of Study

- Creating and presenting ensemble performance.
- Analysing non-naturalistic performance.
- Responding to ensemble performance.

Unit 3 Outcomes

- To develop and present character(s) within a non-naturalistic ensemble performance.
- To analyse play-making techniques used to construct and present ensemble works.
- To analyse and evaluate a non-naturalistic performance selected from the prescribed play list. •

Unit 4: Solo Performance

This unit focuses on the use of performance styles theatrical conventions and stimulus materials from a variety of cultural sources in the development of a solo performance. The processes involved in the development of solo work are also analysed and evaluated.

Areas of Study

- Creating solo performances.
- Analysing a solo performance. ٠
- Processes used to create solo performances. ٠

Unit 4 Outcomes

- Create and present a short solo performance based on stimulus material, and evaluate the processes used. ٠
- Create, develop and perform character/s within a solo performance in response to a prescribed structure.
- Describe, analyse and evaluate the creation, development and presentation of a solo performance. ٠

NOTE: There is a charge of \$200 for this subject to cover the cost of productions and a camp.

ARTS

VISUAL COMMUNICATION DESIGN

Unit 3: Design Thinking and Practice

Areas of Study

- Analysis and practice in context.
- Design industry practice.
- Developing a brief and generating ideas.

Unit 3 Outcomes

- To create visual communications for specific contexts, purposes and audiences that are informed by their analysis of existing visual communications.
- To describe how visual communications are designed and produced in the design industry and explain factors that influence these practices.

Unit 4: Design Development and Presentation

Areas of Study

- Development of design concepts.
- Final presentations.
- Evaluation and explanation.

- To be able to develop distinctly different design concepts for each need, and select and refine for each need a concept that satisfied each of the requirements of the brief.
- To be able to produce final visual communication presentations that satisfy the requirement of the brief.
- To devise a pitch to present and explain their visual communications to an audience and evaluate the visual communications against the brief.

ACCOUNTING

Unit 3: Recording and Reporting for a Trading Business

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

Areas of Study

- Recording and analysing financial data.
- Preparing and interpreting accounting reports.

Unit 3 Outcomes

- Record financial data using a double entry system; explain the role of the General Journal, General Ledger and inventory cards in the recording process; and describe, discuss and analyse various aspects of the accounting system, including ethical considerations.
- Record transactions and prepare, interpret and analyse accounting reports for a trading business.

Unit 4: Recording, Reporting, Budgeting and Decision-making

In this unit students further develop their understanding of accounting for a trading business owned by a sole proprietor and the role of accounting as an information system. Students use the double entry system of recording financial data, and prepare reports using the accrual basis of accounting and the perpetual method of inventory recording. Both manual methods and ICT are used to record and report. Students extend their understanding of the recording and reporting process with the inclusion of balance day adjustments and alternative depreciation methods. They investigate both the role and importance of budgeting in decision-making for a business. They analyse and interpret accounting reports and graphical representations to evaluate the performance of a business. From this evaluation, students suggest strategies to business owners to improve business performance.

Areas of Study

- Extension of recording and reporting.
- Budgeting and decision-making. ٠

Unit 4 Outcomes

- Record financial data and balance day adjustments using a double entry system, report accounting ٠ information using an accrual-based system and evaluate the effect of balance day adjustments and alternative methods of depreciation on accounting reports.
- Prepare budgeted accounting reports and variance reports for a trading business using financial and other relevant information, and model, analyse and discuss the effect of alternative strategies on the performance of a business.

NOTE: Students must complete Year 11 Accounting to enrol in Year 12 Accounting

COMMERCE

BUSINESS MANAGEMENT

Units 3 and 4

Unit 3: Managing a Business

In this unit students explore the key processes and considerations for managing a business efficiently and effectively to achieve business objectives. Students examine different types of businesses and their respective objectives and stakeholders. They investigate strategies to manage both staff and business operations to meet objectives and develop an understanding of the complexity and challenge of managing businesses. Students compare theoretical perspectives with current practice through the use of contemporary Australian and global business case studies from the past four years.

Areas of Study

- Business foundations.
- Human resource management.
- Operations management.

Unit 3 Outcomes

- Analyse the key characteristics of businesses, their stakeholders, management styles and skills, and corporate culture.
- Explain theories of motivation and apply them to a range of contexts and analyse and evaluate strategies related to the management of employees.
- · Analyse the relationship between business objectives and operations management and propose and evaluate strategies to improve the efficiency and effectiveness of business operations.

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 determine current performance and the strategic management necessary to position a business for the future. Students study a theoretical model to undertake change and consider a variety of strategies to manage change in the most efficient and effective way to improve business performance. They investigate the importance of effective management and leadership in change management. Using one or more contemporary business case studies from the past four years, students evaluate business practice against theory.

Areas of Study

- Reviewing performance the need for change.
- Implementing change.

- Explain the way business change may come about, analyse why managers may take a proactive or reactive approach to change, use key performance indicators to analyse the performance of a business, explain the driving and restraining forces for change, and evaluate management strategies to position a business for the future.
- Discuss the importance of effective management strategies and leadership in relation to change, evaluate the effectiveness of a variety of strategies used by managers to implement change, and discuss the effect of change on the stakeholders of a business.

ECONOMICS

Unit 3: Australia's Living Standards

In this unit students investigate the role of the market in allocating resources and examine the factors that affect the price and quantity traded for a range of goods and services. Students develop an understanding of the key measures of efficiency and how market systems might result in efficient outcomes. Students consider contemporary issues to explain the need for government intervention in markets and why markets might fail to maximise society's living standards. As part of a balanced examination, students also consider unintended consequences of government intervention in the market. Students develop an understanding of the macroeconomy. They investigate the factors that affect the level of aggregate demand and aggregate supply in the economy and apply theories to explain how changes in these variables might affect achievement of domestic macroeconomic goals and living standards. Students also investigate the importance of international economic relationships and the effect of these on Australian living standards.

Areas of Study

- Microeconomics: the market system, resource allocation and government intervention.
- Domestic macroeconomic goals.
- Australia and the international economy. ٠

Unit 3 Outcomes

- Analyse how markets operate to allocate resources and evaluate the role of markets and government intervention in achieving efficient outcomes.
- Analyse key contemporary factors that may have affected domestic macroeconomic goals over the past two years, evaluate the extent to which the goals have been achieved and discuss the effects on living standards.
- Analyse the factors that may affect the exchange rate, terms of trade and Australia's international competitiveness, and discuss their impact on Australia's international transactions and the achievement of the domestic macroeconomic goals and living standards.

Unit 4: Managing the Economy

This unit focuses on the role of aggregate demand policies in stabilising the business cycle to achieve the domestic macroeconomic goals. Students develop an understanding of how the Australian Government and the RBA can affect the level of aggregate demand, the achievement of domestic macroeconomic goals and living standards. Students consider and evaluate the strengths and weaknesses of the aggregate demand policies in achieving the domestic macroeconomic goals and living standards. Students consider how the Australian Government utilises selected aggregate supply policies to pursue the achievement of the domestic macroeconomic goals and living standards over the long term.

Areas of Study

- Aggregate demand policies and domestic economic stability.
- Aggregate supply policies. ٠

Unit 4 Outcomes

- Discuss the operation of aggregate demand policies and analyse their intended effects on the achievement of the domestic macroeconomic goals and living standards.
- Discuss the operation of aggregate supply policies and analyse the effect of these policies on the domestic macroeconomic goals and living standards.

COMMERCE

LEGAL STUDIES

Unit 3: Rights and Justice

In this unit, students examine the methods and institutions in the criminal and civil 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 means and institutions used to determine and resolve cases. Students explore topics 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.

Areas of Study

- The Victorian criminal justice system.
- The Victorian civil justice system.

Unit 3 Outcomes

- Explain the key principles in the criminal justice system, discuss the ability of sanctions to achieve their purposes and evaluate the ability of the criminal justice system to achieve the principles of justice during a criminal case.
- Explain the key principles in the civil justice system, discuss the ability of remedies to achieve their purposes and evaluate the ability of the civil justice system to achieve the principles of justice during a civil dispute.

Unit 4: The People, the Law and Reform

In this unit, students explore how the Australian Constitution establishes the law-making powers of the Commonwealth and state parliaments, and how it 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 changes to the law, and past and future constitutional reform. Throughout this unit, students apply legal reasoning and information to actual and/or hypothetical scenarios.

Areas of Study

- The people and the law-makers.
- The people and reform.

- Discuss the ability of parliament and courts to make law and evaluate the means by which the Australian Constitution acts as a check on parliament in law-making.
- Explain the reasons for law reform and constitutional reform, discuss the ability of individuals to change the Australian Constitution and influence a change in the law, and evaluate the ability of law reform bodies to influence a change in the law.

FOOD STUDIES

Unit 3: Food in Daily Life

In this unit students investigate the many roles and everyday influences of food. Area of Study 1 explores the science of food: our physical need for it and how it nourishes and sometimes harms our bodies. Students investigate the science of food appreciation, the physiology of eating and digestion, and the role of diet on gut health. They analyse the scientific evidence, including nutritional rationale, behind the healthy eating recommendations of the Australian Dietary Guidelines and the Australian Guide to Healthy Eating (see www. eatforhealth.gov.au), and develop their understanding of diverse nutrient requirements.

Area of Study 2 focuses on influences on food choices: how communities, families and individuals change their eating patterns over time and how our food values and behaviours develop within social environments. Students inquire into the role of food in shaping and expressing identity and connectedness, and the ways in which food information can be filtered and manipulated. They investigate behavioural principles that assist in the establishment of lifelong, healthy dietary patterns.

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

Areas of Study

- The science of food.
- Food choice, health and wellbeing.

Unit 3 Outcomes

- Explain the processes of eating and digesting food, and the utilisation of macronutrients, and justify the science behind the development of the Australian Dietary Guidelines, and apply principles of nutrition in practical activities to examine specific dietary needs.
- Analyse factors affecting food behaviours of individuals through examining the relationships between food access, values, beliefs and choices, and demonstrate practical skills to evaluate factors affecting planning and preparing healthy meals for children and families.

DESIGN TECHNOLOGY

FOOD STUDIES CONTINUED ...

Unit 4: Food Issues, Challenges and Futures?

In this unit students examine debates about Australia's food systems as part of the global food systems and describe key issues relating to the challenge of adequately feeding a rising world population.

In Area of Study 1 students focus on individual responses to food information and misinformation and the development of food knowledge, skills and habits to empower consumers to make discerning food choices. They also consider the relationship between food security, food sovereignty and food citizenship. Students consider how to assess information and draw evidence-based conclusions, and apply this methodology to navigate contemporary food fads, trends and diets. They practise and improve their food selection skills by interpreting food labels and analysing the marketing terms used on food packaging.

In Area of Study 2 students focus on issues about the environment, climate, ecology, ethics, farming practices, including the use and management of water and land, the development and application of innovations and technologies, and the challenges of food security, food sovereignty, food safety and food wastage. They research a selected topic, seeking clarity on current situations and points of view, considering solutions and analysing work undertaken to solve problems and support sustainable futures. The focus of this unit is on food issues, challenges and futures in Australia.

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

Areas of Study

- Environment and ethics.
- Navigating food information.

- Analyse food information by applying principles of evidence-based research and healthy eating recommendations to evaluate a selected food trend, fad or diet, and claims on food packaging and advertisements, and undertake practical activities that meet the healthy eating recommendations of the Australian Dietary Guidelines.
- Critique issues affecting food systems in terms of ethics, sustainability and food sovereignty, and through practical activities propose future solutions that reflect sociocultural, sustainable and ethical food values and goals.

DESIGN TECHNOLOGY

WOODWORK

Unit 3: Product Development

Looking at design and development of products for mass markets including such factors as client requirements, social and economic trends, availability of resources and technological development in industry. This course involves safe manufacture of products using wood and related materials.

Areas of Study

- Designing for others.
- Product development in Industry.

Unit 3 Outcomes

- Explain the role of a designer and how products are designed and produced to meet the needs • of a client.
- Explain how products are designed and produced within an industrial or commercial setting.
- Develop a product for a client.

Unit 4: Product Evaluation and Marketing

This unit focuses on how judgments of the success of products can be made by comparing products in terms of guality, usefulness and appeal. Also looking at promotion and marketing of products. This course involves safe manufacture of products using wood and related materials.

Areas of Study

- Product comparison.
- Marketing products. ٠

Unit 4 Outcomes

- Explain the relationship between aesthetic appeal, function of products and user needs.
- Explain the role of marketing in design and product development. ٠
- Evaluate the outcome of the design and production activities in relation to the client's needs.

DIGITAL TECHNOLOGY

DATA ANALYTICS

It is recommended that students have studied Applied Computing in Year 11.

Unit 3:

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

Areas of Study

- In Area of Study 1 students respond to teacher–provided solution requirements and designs. Students develop data visualisations and use appropriate software tools to present findings. Appropriate software tools include database, spreadsheet and data visualisation software.
- In Area of Study 2 students propose a research question, prepare a project plan, collect and analyse data, and design infographics or dynamic data visualisations. Area of Study 2 forms the first part of the schoolassessed Task (SAT) that is completed in Unit 4, Area of Study 1.

Unit 3 Outcomes

On completion of this unit:

- student should be able to respond to teacher-provided solution requirements and designs to extract data from large repositories, manipulate and cleanse data and apply a range of functions to develop software solutions to present findings
- student should be able to propose a research question, formulate a project plan, collect and analyse data, generate alternative design ideas and represent the preferred design for creating infographics or dynamic data visualisations.

Unit 4:

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

Areas of Study

- In Area of Study 1 students apply the problem-solving stages of development and evaluation to develop their preferred design prepared in Unit 3, Area of Study 2, into infographics or dynamic data visualisations, and evaluate the solutions and project plan. Area of Study 1 forms the second part of the School-assessed Task (SAT).
- In Area of Study 2 students investigate security practices of an organisation. They examine the threats to and information.

Unit 4 Outcomes

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

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

data and information, evaluate security strategies and recommend improved strategies for protecting data

ENGLISH

Unit 3:

In this area of study, students apply reading and viewing strategies to critically engage with a text, considering its dynamics and complexities and reflecting on the motivations of its characters. They analyse the ways authors construct meaning through vocabulary, text structures, language features and conventions, and the presentation of ideas. They read and engage imaginatively and critically with mentor texts, and effective and cohesive writing within identified contexts. Through close reading, students expand their understanding of the diverse ways that vocabulary, text structures, language features, conventions and ideas can interweave to create compelling texts.

Areas of Study

- Reading and responding to texts.
- Creating texts.

Unit 3 Outcomes

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

- analyse ideas, concerns and values presented in a text, informed by the vocabulary, text structures and ٠ language features and how they make meaning
- demonstrate effective writing skills by producing their own texts, designed to respond to a specific context ٠ and audience to achieve a stated purpose; and to explain their decisions made through writing processes.

Unit 4:

In this area of study, students further sharpen their skills of reading and viewing texts, developed in the corresponding area of study in Unit 3. Students consolidate their capacity to critically analyse texts and deepen their understanding of the ideas and values a text can convey. They analyse the use of argument and language, and visuals in texts that debate a contemporary and significant national or international issue.

Areas of Study

- Reading and responding to texts.
- Analysing argument. ٠

Unit 4 Outcomes

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

- analyse explicit and implicit ideas, concerns and values presented in a text, informed by vocabulary, text structures and language features and how they make meaning
- analyse the use of argument and language in persuasive texts, including one written text (print or digital) and one.

ENGLISH

ENGLISH AS AN ADDITIONAL LANGUAGE (EAL)

Unit 3:

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

Areas of Study

- Reading and creating.
- Analysing argument.
- Listening to texts.

Unit 3 Outcomes

- To explain and analyse how the features of a range of texts create meaning and how they influence interpretation, and the ways readers are invited to respond to texts.
- To draft, review, edit and refine creative and analytical interpretations to texts for expressiveness, accuracy, fluency and coherence, and for stylistic effect.
- To identify and analyse the intent and logical development of an argument, language used by the writers and creators of texts to position or persuade an audience to share a point of view, the impact of texts on audiences, and the way in which language and argument complement one another and interact to position the reader.
- To identify, record and organise the literal and inferred meaning in spoken texts.

Unit 4:

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

Areas of Study

- Reading and comparing.
- Presenting argument.

Unit 4 Outcomes

- To identify meaningful connections and areas for comparison.
- To explain and analyse similarities and differences between texts in the presentation of related ideas, issues and themes.
- To draft, review and rehearse spoken texts that support the presentation of an argument complement, critically analysing their own developing texts.

Additional Information

To be eligible for EAL, students must fulfil one of the following criteria:

1. Not been resident in Australia or New Zealand or another predominantly English-speaking country for a total period of not more than seven years over the period of your education. AND

English has not been a major language of instruction for a total period of not more than seven years over the period of your education.

2. Aboriginal or Torres Strait Islander person whose first language is not English.

LITERATURE

Unit 3:

In this unit students focus on how the form of a text contributes to its meaning. Students explore the form of a set text by constructing a close analysis of that text. They then reflect on the extent to which adapting the text to a different form, and often in a new or reimagined context, affects its meaning, comparing the original with the adaptation. They also develop their own interpretations of a set text, analysing how ideas, views and values are presented in a text, and the ways these are endorsed, challenged and/or marginalised through literary forms, features and language. These student interpretations should consider the historical, social and cultural context in which a text is written and set.

Areas of Study

- Adaptations and transformations.
- Developing interpretations.

Unit 3 Outcomes

On completion of this unit, the student should be able to analyse aspects of a text, drawing on close analysis of textual detail, and then discuss the extent to which meaning changes when that text is adapted to a different form.

Unit 4:

In this unit students focus on the imaginative techniques used for creating and recreating a literary work. Students use their knowledge of how the meaning of texts can change as context and form change to construct their own creative transformations of texts. Students attend closely to textual details to examine the ways specific passages in a text contribute to their overall understanding of the whole text.

Areas of Study

- Creative responses to texts.
- Close analysis of texts.

Unit 4 Outcomes

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

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

HEALTH AND HUMAN DEVELOPMENT

Unit 3: Australia's Health in a Globalised World

This unit looks at health, wellbeing and illness as dynamic and subject to different interpretations and contexts. Students explore health and wellbeing as a global concept and consider the benefits of optimal health and wellbeing and its importance as an individual and a collective resource as their thinking extends to health as a universal right. They will use this knowledge as a background to analyse and evaluate variations in the health status of Australians. Students will also look at health promotion and improvements over time. They will learn the various public health approaches and the interdependence of different models as they research health improvement and evaluate successful programs.

Areas of Study

- Understanding health and wellbeing.
- Promoting health and wellbeing.

Unit 3 Outcomes

- Explain the complex, dynamic and global nature of health and wellbeing, interpret and apply Australia's health status data and analyse variations in health status.
- Explain changes to public health approaches, analyse improvements in population health over time and evaluate health promotion strategies.

Unit 4: Health and Human Development in a Global Context

This unit examines health and wellbeing, and human development in a global context. Students use data to investigate health status and explore the factors that contribute to health inequalities between and within countries. Students build their understanding of health in a global context through examining changes in burden of disease over time and studying the key concepts of sustainability and human development. They consider the health implications of increased globalisation and worldwide trends relating to climate change, digital technologies, world trade and mass movement of people. They also focus on the United Nations Sustainable Development Goals and the work of the World Health Organization. Students investigate the role of nongovernment organisations and Australia's overseas aid program and evaluate the effectiveness of health initiatives and programs in a global context.

Areas of Study

- Health and wellbeing in a global context.
- Health and sustainable development goals.

- Analyse similarities and differences in health status and burden of disease globally and the factors that contribute to differences in health and wellbeing.
- Analyse relationships between the SDGs and their role in the promotion of health and human development, and evaluate the effectiveness of global aid programs.

HEALTH AND PHYSICAL EDUCATION

PHYSICAL EDUCATION

Unit 3: Movement Skills and Energy for Physical Activity

This unit introduces students to the biomechanical and skill acquisition principles used to analyse human movement skills and energy production from a physiological perspective. Students use a variety of tools and techniques to analyse movement skills and apply biomechanical and skill acquisition principles to improve and refine movement in physical activity, sport and exercise.

Students investigate the relative contribution and interplay of the three energy systems to performance in physical activity, sport and exercise.

Areas of Study

- How are movement skills improved?
- How does the body produce energy?

Unit 3 Outcomes

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

- collect and analyse information from, and participate in a variety of physical activities to develop and refine movement skills from a coaching perspective, through the application of biomechanical and skill acquisition principles
- use data collected in practical activities to analyse how the major body and energy systems work together to enable movements to occur, and explain the factors causing fatigue and suitable recovery strategies.

Unit 4: Training to Improve Performance

In this unit students analyse movement skills from a physiological, psychological and sociocultural perspective and apply relevant training principles and methods to improve performance within physical activity at an individual, club and elite level. Students consider the physiological, psychological and sociological requirements of training to design and evaluate an effective training program.

Students critique the effectiveness of the implementation of training principles and methods to meet the needs of the individual, and evaluate the chronic adaptations to training from a theoretical perspective.

Areas of Study

- What are the foundations of an effective training program?
- How is training implemented effectively to improve fitness?

Unit 4 Outcomes

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

- analyse data from an activity analysis and fitness tests to determine and assess the fitness components and energy system requirements of the activity
- participate in a variety of training methods, and design and evaluate training programs to enhance ٠ specific fitness components.

HUMANITIES

AUSTRALIAN POLITICS

Unit 3: Evaluating Australian Democracy

This unit introduces students to the core principles and operation of the Australian political system. Area of Study 1 focuses on the values and principles that underpin the Australian political system. It introduces the key elements of liberal democracy and representative government and explores how they operate in theory and practice. Area of Study 2 evaluates the Australian liberal democratic system further by comparing it with the political system of the United States of America (USA). Students analyse key aspects of the US political system, including the electoral process, the operation of the legislative branch and the protection of rights and freedoms. VCE Australian Politics is a contemporary study and focus must be on examples and case studies from within the last 10 years.

Areas of Study

- Australian democracy.
- Comparing democracies: Australia and the USA.

Unit 3 Outcomes

On completion of this unit, the student should be able to: explain the key values and principles of the Australian political system and evaluate the system's

- democratic strengths and weaknesses
- analyse the key features of the political system of the United States of America and critically compare the political systems of Australia and of the United States of America in terms of the extent to which democratic values and principles are upheld.

Unit 4: Australian Public Policy

This unit focuses on Australian federal public policy formulation and implementation. During the formulation stage of many public policies, the government is subject to pressures from competing stakeholders and interests. As the government responds to these influences and pressures, policy proposals are often subject to change and compromise. Students investigate the complexities the government faces in putting public policy into operation. Area of Study 1 examines domestic policy, that which is largely concerned with Australian society and affecting people living in Australia. Students investigate ONE contemporary Australian domestic policy issue and consider the policy response of the Australian government to that issue. They analyse the major influences on the formulation of the policy and the factors affecting the success of its implementation. In Area of Study 2, students consider contemporary Australian foreign policy. As it deals with Australia's broad national interests, foreign policy may be less subject to the pressures and interests of competing stakeholders. Students examine the major objectives and instruments of contemporary Australian foreign policy and the key challenges facing contemporary Australian foreign policy. VCE Australian Politics is a contemporary study and focus must be on examples and case studies from within the last 10 years.

Areas of Study

- Domestic policy.
- Foreign policy.

Unit 4 Outcomes

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

- which affect these processes and critically evaluate a selected contemporary domestic policy issue
- analyse the nature, objectives and instruments of contemporary Australian foreign policy, and evaluate • TWO key selected challenges facing Australian foreign policy.

explain how Australian federal domestic public policy is formulated and implemented, analyse the factors

GEOGRAPHY

Unit 3: Changing the Land

This unit focuses on two investigations of geographical change: change to land cover and change to land use. Students investigate two major processes that are changing land cover in many regions of the world:

- Deforestation.
- Melting glaciers and ice sheets.

Area of Study

- Land Use Change. In this area of study students select a local area and use appropriate fieldwork ٠ techniques and secondary sources to investigate the processes and impacts of land use change. This change may have recently occurred, is underway or is planned for the near future.
- Land Cover Change. In this area of study, students examine two processes that are changing land ٠ cover, considering their causes, impacts, and investigating strategies used to manage them at different levels.

Unit 3 Outcomes

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

- analyse, describe and explain land use change and assess its impacts
- analyse, describe and explain processes that result in changes to land cover and discuss the impacts and responses resulting from these changes.

Unit 4: Human Population – Trends and Issues

In this unit students investigate the geography of human populations. They explore the patterns of population change, movement and distribution, and how governments, organisations and individuals have responded to those changes in different parts of the world.

Area of Study

- Population dynamics.
- Population issues and challenges.

Unit 4 Outcomes

On completion of this unit, the student should be able to analyse, describe and explain population dynamics on a global scale as well as the nature of significant population issues and challenges in selected locations and evaluate responses.

HUMANITIES

HISTORY - REVOLUTIONS

'A revolution is a struggle to the death between the future and the past.' (Fidel Castro) The study of Revolutions in Year 12 is an investigation of this struggle in both Russia and China. It allows students to investigate the revolutions which occurred in these countries; from the initial crisis in the old regime, to the development of revolutionary ideas and the success of the revolution itself in bringing about genuine change

Areas of Study

The following revolutions will be studied:

- Unit 3: The Russian Revolution 1896 – 1927.
- Unit 4: The Chinese Revolution 1912 - 1976.

The study of each revolution will include

- An examination of what lead to the revolution.
- An investigation of the ideas and groups behind the revolution.
- An evaluation of the changes which took place.
- An evaluation of the new societies created.

Outcomes

- Analyse the causes of revolution and evaluate the contribution of significant ideas, events, individuals and popular movements.
- Analyse the consequences of revolution and evaluate the extent of change brought to society.

Key skills necessary for this subject

As well as other general skills, the following skills will be specifically assessed in this subject:

- Analysis and evaluation of documents
- Independent research and investigative skills
- Independent essay writing
- Analysis and evaluation of historians interpretations.



LOTE

ITALIAN

Units 3 and 4:

This course is for students who have completed Year 11 or equivalent in Italian. It will enable students to use Italian to communicate with others, to make cultural links, to understand language as a system and to apply Italian to work, further study, training or leisure. Students will complete a detailed study of language and culture through texts during Units 3 and 4.

Areas of Study

- Themes:
 - The individual
 - The Italian-speaking communities (migration)
 - The changing world
 - Education and aspirations
- Text Types writing in Italian and writing in a variety of styles/genres.
- Vocabulary.
- Grammar.
- Reading and responding to Italian texts.
- Speaking and listening to Italian texts.

Unit 3 Outcomes

- Express and present information, concepts and ideas through the production of original texts by writing in Italian.
- Analyse, interpret and use information from spoken texts.
- Exchange information, opinions and experiences in a spoken interaction in Italian.

Unit 4 Outcomes

- Analyse and use information from written, visual and spoken text to produce an extended written response in Italian.
- Respond critically in Italian to spoken, written or visual texts presented in Italian which reflect aspects of the language and culture of Italian-speaking communities.
- Exchange and explain information, ideas and opinions orally in Italian to a specific audience. •

Study Considerations: VCE (Baccalaureate)

If you have satisfactorily completed your VCE with a VCE Languages study and have completed a higher level of mathematics as part of your VCE, you may be eligible for the VCE (Baccalaureate).

This award within the VCE recognises the challenges of a broad program of study. To be eligible for the VCE (Baccalaureate) you must have study scores for at least five studies and you must include the following:

- A score of 30 or above from the English Group study; or a score of 33 or above for English as an Additional Language (EAL).
- A VCE Languages study.
- VCE Mathematical Methods or Specialist Mathematics. •

LOTE

JAPANESE (2ND LANGUAGE)

Units 3 and 4:

This course is for students who have completed Year 11 or equivalent in Japanese. It will enable students to use Japanese to communicate with others, to make cultural links, to understand language as a system and to apply Japanese to work, further study, training or leisure. Students will complete a detailed study of language and culture through texts during units 3 and 4.

Areas of Study

- Themes:
 - The individual
 - The Japanese-speaking communities
 - The world around us
- Text Types.
- Kinds of Writing.
- Vocabulary.
- Grammar.
- Speaking and Listening.

Unit 3 Outcomes

- Express ideas through the production of original texts. ٠
- Interpret information from texts and respond. ٠
- Participate in spoken exchange to resolve a personal issue. ٠

Unit 4 Outcomes

- Analyse and use information from written, spoken or viewed texts.
- Share information, ideas and opinions in a spoken exchange.
- Present information, concepts and ideas in evaluative or persuasive writing.

Study Considerations: VCE (Baccalaureate)

If you have satisfactorily completed your VCE with a VCE Languages study and have completed a higher level of mathematics as part of your VCE, you may be eligible for the VCE (Baccalaureate).

This award within the VCE recognises the challenges of a broad program of study. To be eligible for the VCE (Baccalaureate) you must have study scores for at least five studies and you must include the following:

- A score of 30 or above from the English Group study; or
- a score of 33 or above for English as an Additional Language (EAL).
- A VCE Languages study.
- VCE Mathematical Methods or Specialist Mathematics. ٠

VIETNAMESE (1ST LANGUAGE)

Units 3 and 4:

This course is for Vietnamese speaking students who have lived in Australia less than 6 years and have completed Year 11 or equivalent in Vietnamese. It will enable students to use Vietnamese to communicate with others, to make cultural links, to understand language as a system and to apply Vietnamese to work, further study, training or leisure. Students will complete a detailed study of language and culture through texts during units 3 and 4.

Areas of Study

- Themes:
 - Self and Others
 - Traditional and change in Vietnamese speaking communities - Global Issues
- Text Types.
- Kinds of Writing
- Vocabulary.
- Grammar.

Unit 3 Outcomes

- Express ideas through the production of original texts.
- Analyse and use information from spoken texts.
- Exchange information, opinions and experiences.

Unit 4 Outcomes

- Analyse and use information from written texts.
- Respond critically to spoken and written texts which reflect aspects of the language and culture of Vietnamese-speaking communities.

NOTE: *Students are advised that all written and verbal instructions is delivered in Vietnamese language only.

Study Considerations: VCE (Baccalaureate)

If you have satisfactorily completed your VCE with a VCE Languages study and have completed a higher level of mathematics as part of your VCE, you may be eligible for the VCE (Baccalaureate).

This award within the VCE recognises the challenges of a broad program of study. To be eligible for the VCE (Baccalaureate) you must have study scores for at least five studies and you must include the following:

- A score of 30 or above from the English Group study; or a score of 33 or above for English as an Additional Language (EAL).
- A VCE Languages study.
- VCE Mathematical Methods or Specialist Mathematics.

MATHEMATICS

MATHEMATICS PATHWAYS FROM YEAR 9 TO YEAR 12



MATHEMATICS

GENERAL MATHEMATICS

Prerequisites

Passes in two units of Year 11 General Mathematics OR attempting two units of Year 11 Mathematics Methods OR attempting one unit of Year 11 Mathematics Methods and passing one unit of Year 11 General Mathematics.

All Mathematics subjects are offered for selection with a recommendation from your current Mathematics teacher. If you choose to select a Mathematics subject without a recommendation, a parent interview must be organised in advance of subject selection day.

Units 3 and 4:

This course caters for students who wish to take tertiary courses which require "any 3-4 sequence of Unit 3-4 Mathematics."

General Mathematics consists of a compulsory core area of study and a selection of 2 from a possible 4 optional modules. This subject has been designed to enable students to develop mathematical knowledge and skills through the study of these core and option areas. Students are to apply their knowledge and skills from these areas to analyse, investigate and solve problems in a variety of situations. The importance of effective communication of mathematical ideas is stressed, as is the appropriate use of technology in supporting student learning.

Areas of Study

- Data Analysis Core.
- Recursion and financial modelling Core.
- Applications Modules (2).

The optional modules consist of:

- Trigonometry and Geometry.
- Graphs and Relations.
- Networks and Decision Mathematics.
- Matrices.

GENERAL MATHEMATICS CONTINUED...

Unit 3 Outcomes

- Define and explain key terms and concepts as specified in the content from the "Applications" area of study, and use this knowledge to apply related mathematical procedures to solve routine application problems.
- Apply mathematical processes in contexts related to the "Applications" area of study and analyse and discuss these applications of mathematics.
- Select and appropriately use technology in order to develop mathematical ideas, produce results ٠ and carry out analysis in situations requiring problem-solving, modelling or investigative techniques or approaches related to the selected modules for this unit from the "Applications" area of study.

Unit 4 Outcomes

- Define and explain key terms and concepts as specified in the content from the areas of study, and use this knowledge to apply related mathematical procedures to solve routine application problems.
- Use mathematical concepts and skills developed in the "Data analysis" area of study to analyse a practical and extended situation and interpret the outcomes of this analysis in relation to key features of that situation.
- Select and appropriately use technology to develop mathematical ideas, produce results and carry out analysis in situations requiring problem-solving, modelling or investigative techniques or approaches in the areas of study "Data analysis" and the selected module from the "Applications" area of study.

NOTE: It is expected that every student has a TI - Nspire CAS calculator.



MATHEMATICAL METHODS

Prerequisites

Passes in any three units from either Mathematical Methods Units 1 & 2 or Specialist Mathematics Units 1 & 2. All Mathematics subjects are offered for selection with a recommendation from your current Mathematics teacher. If you choose to select a Mathematics subject without a recommendation, a parent interview must be organised in advance of subject selection day.

Units 3 and 4:

In these units students will extend the work done in Mathematical Methods Units 1 and 2. (CAS) The units have been designed to enable students to develop mathematical knowledge and skills through the study of four (4) major areas. Students are to apply their knowledge and skills from these areas to analyse, investigate and solve problems in a variety of situations. The effective communication of mathematical ideas is developed, as is the appropriate use of technology in supporting student learning. This subject is a pre-requisite for many courses. Check the current Tertiary Entrance Requirements for exact details.

Mathematical Methods 3 and 4 (CAS) may be taken alone, or with Specialist Mathematics. Note: The use of a TI-Nspire CAS calculator is mandatory.

Areas of Study

- Functions and Graphs.
- Calculus.
- Algebra.
- Probability.

Units 3 and 4 Outcomes

- Define and explain key concepts as specified in the content areas, and apply a range of related mathematical routines and procedures.
- Apply mathematical processes, with an emphasis on general cases, in non-routine contexts and analyse and discuss these applications of mathematics.
- Select and appropriately use computer algebra systems (CAS) and other technology to develop mathematical ideas, produce results and carry out analysis in situations requiring problem solving, modelling and investigative techniques or approaches.

NOTE: The use of a TI - Nspire CAS calculator is assumed in all areas.

MATHEMATICS

SPECIALIST MATHEMATICS

Prerequisites

Passes in all four units of Year 11 Mathematics Methods and Year 11 Specialist Mathematics.

All Mathematics subjects are offered for selection with a recommendation from your current Mathematics teacher. If you choose to select a Mathematics subject without a recommendation, a parent interview must be organised in advance of subject selection day.

Units 3 and 4:

Specialist Mathematics caters for those students preparing for tertiary courses with a rigorous mathematical component. It is a pre-requisite for many Engineering, Mathematics and Physics based Science courses. Check the correct Tertiary Entrance Requirements for exact details.

Specialist Mathematics must be taken in conjunction with Mathematical Methods 3 and 4.

These units have been designed to enable students to develop knowledge and skills through the study of six areas of study. Students are to apply their knowledge and skills from these areas to analyse, investigate and solve problems in a variety of situations. The effective communication of mathematical ideas is developed, as is the appropriate use of technology in supporting student learning.

Areas of Study

- Functions, relations and graphs.
- Algebra. ٠
- Calculus.
- Vectors.
- Mechanics.

Units 3 and 4 Outcomes

- Define and explain key concepts as specified in the content areas, and apply a range of related ٠ mathematical routines and procedures.
- Apply mathematical processes, with an emphasis on general cases, in non-routine contexts and analyse and discuss these applications of mathematics.
- Select and appropriately use technology to develop mathematical ideas, produce results and carry out analysis in situations requiring problem solving, modelling and investigative techniques or approaches.

NOTE: The use of a TI-Nspire CAS calculator is assumed in all areas.

SCIENCE

BIOLOGY

Unit 3: How Do Cells Maintain Life?

In this unit students investigate the workings of the cell from several perspectives. They explore the relationship between nucleic acids and proteins as key molecules in cellular processes. Students analyse the structure and function of nucleic acids as information molecules, gene structure and expression in prokaryotic and eukaryotic cells and proteins as a diverse group of functional molecules. They examine the biological consequences of manipulating the DNA molecule and applying biotechnologies. Students explore the structure, regulation and rate of biochemical pathways, with reference to photosynthesis and cellular respiration. They explore how the application of biotechnologies to biochemical pathways could lead to improvements in agricultural practices.

Students apply their knowledge of cellular processes through investigation of a selected case study, data analysis and/or a bioethical issue such as the discovery and development of the model of the structure of DNA; transgenic organism use in agriculture; use, research and regulation of gene technologies, including CRISPR-Cas9; outcomes and unexpected consequences of the use of enzyme inhibitors such as pesticides and drugs.

Areas of Study

- What is the role of nucleic acids and proteins in maintaining life?
- How are biochemical pathways regulated?

Unit 3 Outcomes

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

- used and applied in the manipulation of DNA
- analyse the structure and regulation of biochemical pathways in photosynthesis and cellular respiration, and evaluate how biotechnology can be used to solve problems related to the regulation of biochemical pathways.



analyse the relationship between nucleic acids and proteins, and evaluate how tools and techniques can be

SCIENCE

BIOLOGY CONTINUED...

Unit 4: How Does Life Change and Respond to Challenges Over Time?

In this unit students consider the continual change and challenges to which life on Earth has been, and continues to be, subjected to. They study the human immune system and the interactions between its components to provide immunity to a specific pathogen. Students consider how the application of biological knowledge can be used to respond to bioethical issues and challenges related to disease.

Students consider how evolutionary biology is based on the accumulation of evidence over time. They investigate the impact of various change events on a population's gene pool and the biological consequences of changes in allele frequencies. Students examine the evidence for relatedness between species and change in life forms over time using evidence from palaeontology , structural morphology, molecular homology and comparative genomics. Students examine the evidence for structural trends in the human fossil record, recognising that interpretations can be contested, refined or replaced when challenged by new evidence.

Students demonstrate and apply their knowledge of how life changes and responds to challenges through investigation of a selected case study, data analysis and/or bioethical issue. Examples of investigation topics include, but are not limited to: deviant cell behaviour and links to disease; autoimmune diseases; allergic reactions; development of immunotherapy strategies; use and application of bacteriophage therapy; prevention and eradication of disease; vaccinations; bioprospecting for new medical treatments; trends; patterns and evidence for evolutionary relationships; monitoring of gene pools for conservation planning; role of selective breeding programs in conservation of endangered species; or impact of new technologies on the study of evolutionary biology.

Areas of Study

- How do organisms respond to pathogens?
- How are species related over time?
- Practical investigation. ٠

Unit 4 Outcomes

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

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

CHEMISTRY

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 investigate the chemical production of energy and materials. They explore how innovation, design and sustainability principles and concepts can be applied to produce energy and materials while minimising possible harmful effects of production on human health and the environment. Students analyse and compare different fuels as energy sources for society, with reference to the energy transformations and chemical reactions involved, energy efficiencies, environmental impacts and potential applications. They explore food in the context of supplying energy in living systems. The purpose, design and operating principles of galvanic cells, fuel cells, rechargeable cells and electrolytic cells are considered when evaluating their suitability for supplying society's needs for energy and materials. They evaluate chemical processes with reference to factors that influence their reaction rates and extent. They investigate how the rate of a reaction can be controlled so that it occurs at the optimum rate while avoiding unwanted side reactions and by-products. Students conduct practical investigations involving thermochemistry, redox reactions, electrochemical cells, reaction rates and equilibrium systems.

Throughout the unit students use chemistry terminology, including symbols, formulas, chemical nomenclature and equations, to represent and explain observations and data from their own investigations and to evaluate the chemistry-based claims of others.

Areas of Study

- What are the current and future options for supplying energy?
- How can the rate and yield of chemical reactions be optimised?

Outcomes

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

- compare fuels guantitatively with reference to combustion products and energy outputs, apply knowledge of the electrochemical series to design, construct and test primary cells and fuel cells, and evaluate the sustainability of electrochemical cells in producing energy for society
- experimentally analyse chemical systems to predict how the rate and extent of chemical reactions can be optimised, explain how electrolysis is involved in the production of chemicals, and evaluate the sustainability of electrolytic processes in producing useful materials for society.

CHEMISTRY CONTINUED ...

Unit 4: How Are Carbon-based Compounds Designed for Purpose?

In this unit students investigate the structures and reactions of carbon-based organic compounds, including considering how green chemistry principles are applied in the production of synthetic organic compounds. They study the metabolism of food and the action of medicines in the body. They explore how laboratory analysis and various instrumentation techniques can be applied to analyse organic compounds in order to identify them and to ensure product purity.

Students conduct practical investigations related to the synthesis and analysis of organic compounds, involving reaction pathways, organic synthesis, identification of functional groups, direct redox titrations, solvent extraction and distillations.

Throughout the unit students use chemistry terminology including symbols, formulas, chemical nomenclature and equations to represent and explain observations and data from their own investigations and to evaluate the chemistry-based claims of others.

A student-designed scientific investigation involving the generation of primary data related to the production of energy and/or chemicals and/or the analysis or synthesis of organic compounds is undertaken in Unit 4 Outcome 3. The design, analysis and findings of the investigation are presented in a scientific poster format.

Areas of Study

- How are organic compounds categorised and synthesised?
- ٠ How are organic compounds analysed and used?
- How is scientific inquiry used to investigate the sustainable production of energy and/or materials?

Unit 4 Outcomes

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

- analyse the general structures and reactions of the major organic families of compounds, design reaction pathways for organic synthesis, and evaluate the sustainability of the manufacture of organic compounds used in society
- apply qualitative and quantitative tests to analyse organic compounds and their structural characteristics, deduce structures of organic compounds using instrumental analysis data, explain how some medicines function, and experimentally analyse how some natural medicines can be extracted and purified
- design and conduct a scientific investigation related to the production of energy and/or chemicals and/or the analysis or synthesis of organic compounds, and present an aim, methodology and method, results, discussion and conclusion in a scientific poster.

PHYSICS

Unit 3: How Do Fields Explain Motion and Electricity?

In this area of study, students use Newton's laws of motion to analyse linear motion, circular motion and projectile motion. Newton's laws of motion give important insights into a range of motion both on Earth and beyond through the investigations of objects on land and in orbit. They explore the motion of objects under the influence of a gravitational field on the surface of Earth, close to Earth and above Earth. Students explore the relationships between force, energy and mass and how to apply them to solve dynamic systems such as the movement of an object attached to a spring in a gravitational field.

Students also explore the concept of field as a model used by physicists to explain observations of motion of objects not in apparent contact. Students compare and contrast three fundamental fields - gravitational, magnetic and electric - and how they relate to one another. Students model the acceleration of particles in a particle accelerator, including synchrotrons, as uniform circular motion or as linear accelerator under uniform electric field and uniform magnetic field.

Also in this unit, students explore the importance of energy in explaining and describing the physical world. They examine the production of electricity and its delivery to homes over long distances using transmission lines and high-voltage transformers.

Areas of Study

- How do things move without contact?
- How are fields used to move electrical energy?
- How fast can things go?

Unit 3 Outcomes

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

- analyse motion using Newton's law of motion in one and two dimensions and apply the concepts of force due to gravity and normal force in relation to satellites in orbit where the orbits are assumed to be uniform and circular
- analyse gravitational, electrical and magnetic fields, and use these to explain the operation of motors and particle accelerators and the orbits of satellites
- investigate and analyse theoretically and practically the operation of simple DC motors consisting of one coil, containing a number of loops of wire, which is free to rotate about an axis in a uniform magnetic field and including the use of a split ring commutator
- investigate and analyse theoretically and practically the generation of electromotive force (emf) including AC voltage and calculations using induced emf
- explain the production of DC voltage in DC generators and AC voltage in alternators
- describe the production of electricity using photovoltaic cells and the need for an inverter to convert power from DC to AC for use in the home.

SCIENCE

PHYSICS CONTINUED...

Unit 4: How Have Creative Ideas and Investigation Revolutionised Thinking in Physics?

In this area of study, students learn how the understanding of light, matter and motion have changed over time. They explore how major experiments led to the development of theories to describe these fundamental aspects of the physical world. 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.

Students consider the limitations of classical mechanics as they explore Einstein's view of the Universe. They consider postulates as distinct from theories and explore ideas related to objects moving at speeds approaching the speed of light. Students use Special Relativity to explore length contraction and time dilation as observations are made by observers in different frames of reference, and the interrelationship between matter and energy.

Also as part of this area of study, students undertake a student-designed scientific investigation in either Unit 3 or Unit 4, or across both Units 3 and 4. The investigation involves the generation of primary data relating to fields, motion or light. The investigation draws on knowledge and related key science skills developed across Units 3 and 4 and is undertaken by students in the laboratory and/or in the field.

Areas of Study

- How has understanding about the physical world changed?
- How is scientific inquiry used to investigate fields, motion or light? ٠

Unit 4 Outcomes

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

- apply wave concepts to analyse, interpret and explain the behaviour of light ٠
- provide evidence for the nature of light and matter, and analyse the data from experiments that supports this evidence
- describe the limitation of classical mechanics when considering motion approaching the speed of light ٠
- apply theory of Special Relativity to explore length contraction and time dilation as observations are made by observers in different frames of reference, and the interrelationship between matter and energy
- design and undertake a practical investigation related to waves or fields or motion, and present methodologies, findings and conclusions in a scientific poster.

PSYCHOLOGY

Unit 3: How Does Experience Affect Behaviour and Mental Processes?

In this unit students investigate the contribution that classical and contemporary research has made to the understanding of the functioning of the nervous system and to the understanding of biological, psychological and social factors that influence learning and memory.

Students investigate how the human nervous system enables a person to interact with the world around them. They explore how stress may affect a person's psychological functioning and consider stress as a psychobiological process, including emerging research into the relationship between the gut and the brain in psychological functioning.

Students investigate how mechanisms of learning and memory lead to the acquisition of knowledge and the development of new and changed behaviours. They consider models to explain learning and memory as well as the interconnectedness of brain regions involved in memory. The use of mnemonics to improve memory is explored, including Aboriginal and Torres Strait Islander peoples' use of place as a repository of memory.

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, or across both Units 3 and 4, and is assessed in Unit 4 Outcome 3. The design, analysis and findings of the investigation are presented in a scientific poster format.

Areas of Study

- How does the nervous system enable psychological functioning?
- How do people learn and remember?

Unit 3 Outcomes

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

- world, and evaluate the different ways in which stress can affect psychobiological functioning
- psychobiological process.

analyse how the functioning of the human nervous system enables a person to interact with the external

apply different approaches to explain learning to familiar and novel contexts and discuss memory as a

PSYCHOLOGY CONTINUED ...

Unit 4: How is Mental Wellbeing Supported and Maintained?

In this unit students explore the demand for sleep and the influences of sleep on mental wellbeing. They consider the biological mechanisms that regulate sleep and the relationship between rapid eye movement (REM) and non-rapid eye movement (NREM) sleep across the life span. They also study the impact that changes to a person's sleep-wake cycle and sleep hygiene have on a person's psychological functioning and consider the contribution that classical and contemporary research has made to the understanding of sleep.

Students consider ways in which mental wellbeing may be defined and conceptualised, including social and emotional wellbeing (SEWB) as a multidimensional and holistic framework to wellbeing. They explore the concept of mental wellbeing as a continuum and apply a biopsychosocial approach, as a scientific model, to understand specific phobia. They explore how mental wellbeing can be supported by considering the importance of biopsychosocial protective factors and cultural determinants as integral to the wellbeing of Aboriginal and Torres Strait Islander peoples.

A student-designed scientific investigation involving the generation of primary data related to mental processes and mental wellbeing is undertaken in either Unit 3 or Unit 4, or across both Units 3 and 4, and is assessed in Unit 4 Outcome 3. The design, analysis and findings of the investigation are presented in a scientific poster format.

Areas of Study

- How does sleep affect mental processes and behaviour?
- What influences mental wellbeing?
- How is scientific inquiry used to investigate mental processes and psychological functioning?

Unit 4 Outcomes

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

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

VOCATIONAL EDUCATION TRAINING 2024

(VCE Vocational Major Students, please see extra resource package for Brimbank Cluster VET Courses on offer)

VOCATIONAL EDUCATION AND TRAINING (VET)

Vocational Education and Training (VET) is the term used to describe the education and training arrangements that are designed to prepare people for work.

In Victorian schools this preparation is done by offering students the chance to complete an entry level TAFE Certificate at the same time they are completing their VCE. This means such students will end up with two qualifications recognised by employers and tertiary institutions.

What are the advantages in enrolling in a VET course?

There are a number of significant advantages in taking a VET course as part of your VCE. Here are a few:

- Students gain a nationally recognised TAFE qualification as part of their VCE program.
- Students are able to pick up skills and knowledge valued and recognised by industry.
- Statistics show that students completing VET courses at school have a decided advantage when securing work particularly in arranging both Traineeships and Apprenticeships.
- Students are able to develop their awareness of what working in a particular industry actually involves.
- All pathways are open to students completing a VET course when they leave school. They can apply for entry into a University Course, a TAFE course or seek to join the workforce.
- If they proceed to more advanced TAFE studies, they are usually able to gain a number of credits in related courses. This means that the number of class hours required is shortened.

If you have any questions please see Ms Armstrong in the Careers Room.

VET - ARTS

CERTIFICATE III IN MUSIC (PERFORMANCE)

CUA30920 Delivered in partnership with COSAMP (RTO 41549)

Description

Certificate III in Music (Performance) enables students to apply a broad range of knowledge and skills in varied work contexts in the music industry.

Units 1 to 4 include preparing for performances, developing ensemble skills scored assessment and include units such as developing improvisation skills, of genre to music making and performing music as part of a group or as a soloist.

Unit of Competence

VCE VET Units 1 and 2

- Implement copyright arrangements.
- Work effectively in the music industry.
- Plan a career in the creative arts industry.
- Create simple musical pieces using music technology.
- Perform simple repertoire in ensembles.
- Make music demos.

VCE VET Units 3 and 4

- Develop technical skills for musical performances.
- Prepare for musical performances.
- Develop and perform musical improvisation.
- Develop and apply stagecraft skills.
- Perform music as part of a group OR
- Perform music as a soloist.

Students choose one of the following

- Perform music as part of a group
- Perform music as a soloist
- NOTE:

This is a Brimbank VET Cluster subject which will be taught at St Albans Secondary College. The class will run on Thursday afternoons from 1.30-5.00pm.

VET - DESIGN TECHNOLOGY

CERTIFICATE II in APPAREL, FASHION AND TEXTILES

MST20722 delivered in partnership with Ripponlea Institute (RTO 21230)

INTERVIEW FORM

NOTES

My interview is with:

Description

This qualification is designed for entry level students and provides an introduction to fashion design and garment construction. Students gain practical skills in basic sewing machine use, garment design, pattern use and alteration and construction techniques.

Unit 3 and 4 continues on from the modules and skills developed in units 1 and 2 of this Certificate. On completion of all units students receive a TAFE Certificate. The Certificate will contribute to the ATAR score.

Areas of Study

VCE VET Units 3 and 4

- Identify fibers and fabrics.
- Operate computing technology in a textile, Clothing or Footwear Workplace.
- Modify patterns to create basic styles.
- Embellish garment by hand or machine.
- Prepare and produce sewn garment.
- Prepare design concept for a simple garment. **NOTE**:

This is a Brimbank VET Cluster subject which will be taught at St Albans Secondary College. The class will run on Tuesday afternoons from 1.30-5.00pm.

Students have the opportunity for their garments to be entered into state and national competitions.

ST ALBANS SECONDARY COLLEGE - YEAR 12 - 2024 COURSE SELECTION HANDBOOK

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