

**Penola**  
CATHOLIC COLLEGE  
EST. 1995

# TECHNOLOGY

Food Studies

Product Design and Technology (Textiles)

Product Design and Technology (Wood)

Systems Engineering

Certificate II in Engineering (VCE VET)

Certificate II in Electrotechnology Integrated Technologies (VCE VET)

Certificate II in Hospitality (Kitchen Operations) (VCE VET)

Certificate II in Salon Assistant (VET)

Certificate II in Retail Cosmetics (VET)



# TECHNOLOGY PATHWAYS

Years 9 and 10	Years 11 and 12	University/ TAFE/Careers
Electronics	Systems Engineering	Electrical Engineer, Instrument Fitter, Security Systems Installer, Telecommunications, Mechanical Engineering, Electrotechnology
Engineering (Year 10 only)	Integrated Technology (Cert. II) (VET)	Assembler, Electrical Automotive
Design & Technology (Wood)	Engineering (Cert. II) (VET)	Technical and Mechanical Trades, Armed Forces Technician
	Product Design and Technology (Wood)	Industrial Design, Engineering, Architecture, Marketing, Quality Control, Product Testing, Production Management, Cabinet Maker, Carpenter, Builder, Welder, Vehicle Body Building, Aircraft Maintenance
Textiles (Recyclable Fashion) Garment Design	Product Design and Technology (Textiles)	Textiles Design, Fashion Design, Fashion Trades, Interior Designer, Interior Decorator, Costume Designer, Visual Merchandiser, Pattern Maker, Fashion Coordinator, Marketing, Quality Control & Product Testing, Buyer, Production Management, Textiles Teacher, Fashion and Textiles, Theatre Production/Costumes
Textiles (Fibres and Fabrics) Interior Construction		
Food Design	Food Studies	Home Economist, Consumer Science, Teacher, Food Technologist, Food Engineering, Nutrition, Dietetics, Consumer Studies, Food Styling and Photography, Food Industry, Food Inspector, Community Health, Health Promotions
Food and Culture	Hospitality (Cert. II) (VET) Kitchen Operations	Chef, Cook, Catering, Hotel Management, Events Management, Function Coordinator, Environmental Health Officer, Housekeeping, Front of House, Tourism, Waiter
	Year 11 Salon Assistant (Cert. II) (VET) - Units 1 & 2 only	Stylist, Barber, Hairdresser, Salon Manager
	Year 11 Retail Cosmetics (Cert. II) (VET) - Units 1 & 2 only	Beauty Advisors, Beauty Therapists, Counter Managers, Sales Consultants



# FOOD STUDIES

VCE Food Studies takes an interdisciplinary approach to the exploration of food, with an emphasis on extending food knowledge and skills and building individual pathways to health and wellbeing through the application of practical food skills. VCE Food Studies provides a framework for informed and confident food selection and food preparation within today's complex architecture of influences and choices.

The study may also provide a foundation for exciting pathways to food science and technology, consumer science, home economics, education, the hospitality and food manufacturing industries, and nutrition and health studies.

## Unit 1: Food Origins

In Area of Study 1 students explore how humanity has historically sourced its food, examining the general progression from hunter-gatherer to rural-based agriculture, to today's urban living and global trade in food.

In Area of Study 2 students look at Australian indigenous food prior to European settlement and how food patterns have changed since, particularly through the influence of food production, processing and manufacturing industries and immigration.

Students investigate cuisines that are part of Australia's culinary identity today and reflect on the concept of an Australian cuisine.

## Unit 2: Food Makers

Area of Study 1 focuses on commercial food production industries, while study Area of Study 2 looks at food production in small-scale domestic settings, as both a comparison and complement to commercial production. Students gain insight into the significance of food industries to the Australian economy and investigate the capacity of industry to provide safe, high-quality food that meets the needs of consumers

## Unit 3: Food in the Daily Life

Area of Study 1 explores the science of food: our physical need for it and how it nourishes and sometimes harms our bodies. They also investigate the functional properties of food and the changes that occur during food preparation and cooking.

They analyse the Australian Dietary Guidelines and the Australian Guide to Healthy Eating and develop their understanding of diverse nutrient requirements.

Area of Study 2 focuses on influences on influences of food choice: 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.

## Unit 4: Food issues, challenges and futures

Area of Study 1 focuses on issues about 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. Area of Study 2 focuses on individual responses to food information and misinformation and the development of food knowledge, skills and habits to empower consumers to make discerning food choices.

### Assessment: Units 1 to 4

Satisfactory completion of all Units 1 to 4 is based on achievement of the outcomes specified for each unit. Students may be assessed on the following areas for each outcome.

- a range of practical activities and records of two practical activities related to the outcome
- AND any one or a combination of the following:
- a short written report: media analysis, research inquiry, structured questions, case study analysis

### Contribution to final assessment:

- School-assessed coursework for Unit 3 will contribute 30% to the study score
- School-assessed coursework for Unit 4 will contribute 30% to the study score
- The examination will contribute 40% to the study score.





# PRODUCT DESIGN & TECHNOLOGY (Textiles and Wood)

Design and Technology focuses on developing an understanding of the social, economic and environmental consequences of design choices and decision-making. Students develop skills to critically analyse the purpose, process and products associated with design and technological innovation and activity. They develop the ability to understand, communicate and develop creative solutions while using tools, resources and human capabilities to complete a task for a given context.

## Unit 1: Sustainable Product Redevelopment

This unit focuses on the analysis, modification and improvement of a product design with consideration of sustainability. Students consider the sustainability of an existing product, such as the impact of sourcing materials, manufacture, distribution, use and likely disposal. Students consider how a redeveloped product should attempt to solve a problem related to the original product.

## 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. Teamwork encourages communication between students and mirrors professional design practice where designers often work within a multi-disciplinary team to develop solutions to design problems.

## Unit 3: Applying the Product Design Processes

In this unit students are engaged in the design and development of a product that addresses a personal, local, or global problem, or meets the needs and wants of a potential end-user/s. Design and product development and manufacture occur in a range of settings. An industrial setting provides a marked contrast to that one-off situation in a small cottage industry or school setting.

## Unit 4: Product Development and Evaluation

In this unit students engage with an end-user/s to gain feedback throughout the process of production. Students make comparisons between similar products to help evaluate the success of a product in relation to a range of product design factors. The environmental, economic and social impact of products throughout their life cycle can be analysed and evaluated.

### Assessment: Units 3 & 4

- Achievement of set outcomes specified for the units.
- Written reports (SAC Tests).
- Folio work (final product).
- Product Evaluation.

### Contribution to final assessment

- School-assessed coursework for Units 3 & 4 will contribute 20% to the study score.
- Units 3 & 4 are also assessed by a school-assessed task, which will contribute 50% to the study score.
- \*The end of year examination will contribute 30% to the study score.





# SYSTEMS ENGINEERING

Systems Engineering is concerned with designing solutions to practical problems by integrating knowledge of science, electronics, mechanics and mathematics with technical and practical application. Systems Engineering also involves the use of advanced testing and measurement to ensure that products perform as expected. It aims to help you to create, use and control a variety of electrotechnological systems such as: a power supply, alarm, remote control and robotic arm.

## Unit 1: Mechanical Engineering Fundamentals

The theoretical focus of Unit 1 is on mechanical fundamentals: force, energy, inclined planes, gears and levers. The practical focus is to design, plan, manufacture, test performance, diagnose faults and evaluate a functional system. In their investigation, students will focus on the impact of technological systems on the society and environment in which they operate.

## Unit 2: Electrotechnology Engineering Fundamentals

The focus of Unit 2 in theory is on electrotechnological engineering fundamentals such as: components functions and symbols, designing printed circuit boards, measuring and testing methods and tools, elementary fault finding, repair and maintenance in design and production, and the maintenance techniques in the production activities.

In the investigation report students need to explain how new and emerging technologies, such as new materials, processes and methods of manufacture, alternative fuels and alternative energy sources provide advancement in technological systems such as microelectronics, nanotechnology, fuel cells, hybrid technology and new applications for materials. The future developments of new and emerging technology and likely effects on the design and function of a technological system will be also investigated.

## Units 3 & 4: Integrated and Controlled Systems Engineering

Units 3 and 4 focus on integrated and controlled systems. Students will be designing and producing an integrated technological system of their choice such as: a remote controlled vehicle, an alarm system, a robotic arm or an automated green house. The diagnostic practices are related to the student's production work. The knowledge and skills of project management techniques, risk assessment and risk management, folio presentation is also required.

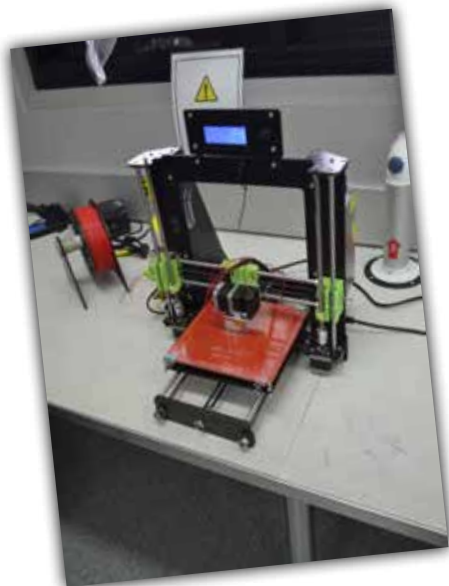
The focus of Units 3 and 4 research is on the analysis and comparison of the environmental benefits and implications of using different energy sources and how specific energy sources affect the design, performance and use of technological systems.

### Assessment: Units 3 & 4

- Achievement of set outcomes specified for the units
- Written report
- Final Product
- Product Evaluation

### Contribution to final assessment:

- School-assessed coursework for Units 3 & 4 will contribute 30% to the study score
- Units 3 & 4 are also assessed by a school-assessed task, which will contribute 40% to the study score
- The end of year examination will contribute 30% to the study score.





# CERTIFICATE II IN ENGINEERING (VCE VET)

This TAFE Certificate II in Engineering covers 14 modules over the two years of VCE. All modules are completed at school, and a certificate will be granted on completion by Education Living.

The Engineering Certificate will provide four units in the VCE Certificate and will be used in calculating the ATAR Score for tertiary selection. In addition to supporting TAFE and University applications, the certificate improves student access to Engineering and Manufacturing Apprenticeships as well as equipment assembly and sales positions.

Some aspects of the course require on-the-job training, so students will have an optional two week work placement each year. This will occur in a two week block – the last week of a school term followed by the first week of school holidays.

This VET program, is an entry level training program for students wishing to pursue a range of occupations associated with the Engineering and Manufacturing Industries. It covers the four main areas of engineering - Mechanical, Fabrication, Electrical / Electronics, and Production - with an emphasis on Fabrication.

## Unit 1: Mechanical Engineering Fundamentals

## Unit 2: Electrotechnology Engineering Fundamentals

- Apply principles of Occupational Health & Safety in work environment
- Organise and communicate information
- Interact with computing technology
- Use hand tools

- Use power tools/hand held operations
- Develop an individual career plan for the engineering industry
- Perform basic machining processes
- Apply basic fabrication techniques

Additional VCE units may help deliver parts of the modules. eg: General Maths 1 and 2

## Unit 3: Systems Engineering and Energy

## Unit 4: Integrated and Controlled Systems Engineering

- Computations
- Sustainability
- Engineering Drawing
- Handle engineering materials
- Apply 5S procedures

Students will also undertake one selected elective;

- Produce basic engineering component and products using fabrication or machining

Please note: Students who wish to study Engineering in year 12, this subject covers one module of mathematics.

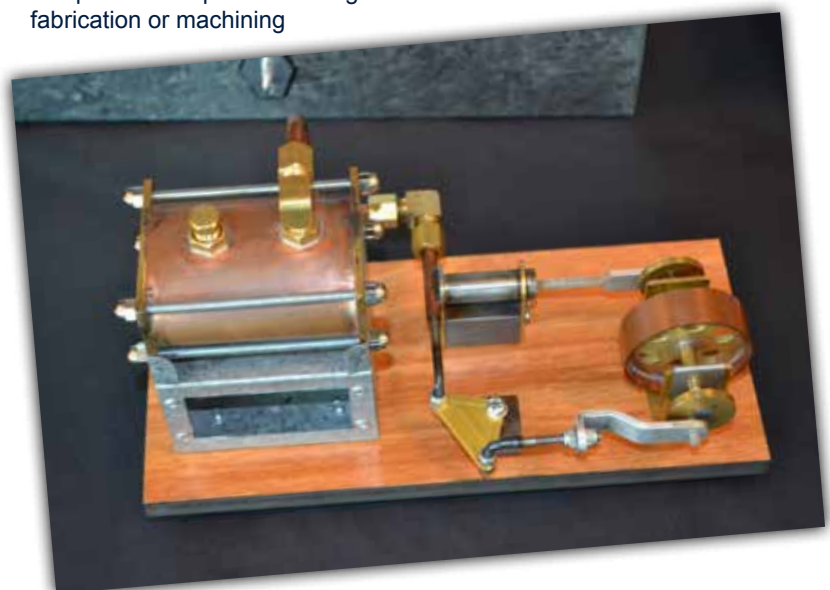
### Assessment: Units 1 to 4

Satisfactory completion for Units 1 to 4 is based on achievement of the set modules specified for each unit. Students could be assessed on the following areas;

- Portfolio
- Work Performance
- Product
- Work Product

### Contribution to final assessment

- Students wishing to receive a study score for Units 3 and 4 must undertake scored assessment
- Coursework Tasks contribute to 66% of a students final assessment
- The end of year examination contributes to 34% of a students final assessment





# CERTIFICATE II IN ELECTRO TECHNOLOGY INTEGRATED TECHNOLOGIES (VCE /VET)

This new Integrated Technologies course covers nine modules over two years. The course has a standard VCE credit: Units 1 and 2 and a Units 3 and 4 sequence. All modules are delivered and completed at the College, and Certificate II granted on completion will be used in calculating the ATAR score for tertiary selection.

The course will also provide students with the practical skills required by Industries which broadly encompass electrotechnology, telecommunications, information technology and security systems to:

- continue TAFE or University studies,
- gain work and further training through an apprenticeship, traineeship or cadetship,
- find employment in fields such as: electronics, entertainment, wireless systems, energy generation, computer controlled applications, electronic equipment or computer network support.

## Unit 1 & 2

The Core unit covers undertaking scheduled routine work activities in the electrotechnology industry in an agreed time, to a quality standard and with a minimum of waste. It encompasses assembling, programming and testing robots, including line-following and obstacle-avoidance robots. Students construct low voltage power supplies and investigate sustainable battery technologies.

The units of competency also set out the knowledge and skills required to carry out a shared technology project by merging distinct electrotechnology domains to achieve an innovative and integrated technical solution. This includes planning, preparation and conduct of a project in accordance with a project management plan.

## Core & Elective Modules include:

- Operating a small power supply system
- Configuring and programming a basic robotic system
- Assembly and connection of a low voltage power supply
- Integrated technology project

## Units 3 & 4

The core units provide the skills and knowledge to conduct routine work practices in the integrated technologies industry. They encompass the safe use of hand tools, power tools, dismantling and assembling components, application of electrical/electronic principles, 3D printing and the use of integrated technologies.

## Core & Elective Modules include:

- Use software applications in integrated technology work
- Work in an integrated technology environment
- Use electrotechnology skills in integrated technology work

## Assessments: Units 3 & 4

Satisfactory completion of VET/VCE 'Integrated Technologies' course is based on achievements of the set modules specified for each Units 1 to 4. Students will be assessed on the following areas:

- Work performance
- Final product
- Portfolio
- Test

## Contribution to final assessment

- Students wishing to receive a study score for Units 3 and 4 will be doing scored assessment and examination
- Coursework tasks in Unit 3 and 4 contribute to 66% of the final assessment
- The end of the year examination contributes to 34% of the final assessment





# CERTIFICATE II IN HOSPITALITY (KITCHEN OPERATIONS) (VCE VET)

This TAFE Certificate II in Hospitality (Kitchen Operations) covers 14 modules of competence. The program aims to provide participants with knowledge and skills to achieve competencies that will enhance their employment prospects within a broad range of hospitality settings. All modules are delivered at the College. Inner Melbourne VET Cluster issues the certificate on completion.

The course will provide four units on the VCE Certificate and can be used in the best four VCE studies for calculating the ATAR score for tertiary entrance. In addition to supporting TAFE and university applications, the Certificate improves student access to apprenticeships, traineeships and employment in restaurants, reception centres, sport and entertainment venues, hotels etc.

## YEAR 11: Certificate II in Hospitality (Kitchen Operations)

### VCE VET Unit 1 & 2 (modules)

- Work effectively with others
- Prepare simple dishes
- Sources and use information on the hospitality industry
- Use hygienic practices for food safety
- Maintain the quality of perishable items
- Participate in safe work practices
- Use food preparation equipment
- Produce dishes using basic methods of cookery
- Clean kitchen premises and equipment

\*\* Students are recommended to do one week of Work Placement as part of the course.

## YEAR 12: Certificate II in Hospitality (Kitchen Operations)

### VCE VET Units 3 & 4 (modules)

- Produce appetisers and salads
- Produce stocks, sauces and soups
- Produce vegetable, fruit, egg and farinaceous dishes
- Use cookery skills effectively
- Purchase goods

\*\* Students are required to complete a minimum of 50 hours Work Placement in the College operated Restaurant "Stringybark" in Terms 2 & 3.

### Assessment: Units 1 to 4

Satisfactory completion for Units 1 to 4 is based on achievement of the set modules specified for each unit. Students may be assessed on the following areas:

- Portfolio
- Work Performance
- Product
- Work Product

### Contribution to final assessment

Students wishing to receive a study score for Units 3 and 4 must undertake scored assessment

Coursework Tasks contribute to 66% of a students final assessment

The end of year examination contributes to 34% of a students final assessment.







# CERTIFICATE II IN SALON ASSISTANT (VET)

# CERTIFICATE II IN RETAIL COSMETICS (VET)

- Certificate II in Salon Assistant (VET) and
- Certificate II in Retail Cosmetics are offered to Year 11 students (Units 1 and 2 only) and Year 10 students who are accelerating.

Certificate II in Salon Assistant and Certificate II in Retail Cosmetics only is offered to Year 11 students. All modules are delivered at school and after school hours to be completed during the course work.

This course is designed to provide students with ability and knowledge to work in a Hairdressing salon or beauty industry. This course provides students with training and assessment in the hairdressing and beauty industry. The opportunity to seek further information directly from the provider of this course will be organised at the Senior Program Information Night in Term 3.

Please note as part of the course students are required to remain at school for Salon Assistant or Retail Cosmetics classes until 5.30 pm once per week.



## Year 11 Salon Assistant Acquired Knowledge:

The breadth, depth and complexity of knowledge and skills within this courses would prepare a person to perform in a range of varied activities. An individual achieving these levels of competencies would be able to:

- Demonstrate basic operational knowledge in a moderate range of areas
- Apply a defined range of skills
- Apply known solutions to a limited range of predictable problems
- Perform a range of tasks where choice between a limited range of options is required
- Assess and record information from varied sources
- Take limited responsibility for one's own output in work and training

## Modules include:

### Certificate II in Salon Assistant

- Contribute to health and safety of self and others
- Maintain and organise tools, equipment and work areas
- Greet and prepare clients for salon services
- Research and use hairdressing industry information

## Year 11 Retail Cosmetics

### Modules include:

#### Certificate II in Retail Cosmetics

- Contribute to health and safety of self and others
- Communicate as part of a salon team
- Design and apply make-up
- Advise on beauty products and services
- Design and apply make-up for photography

### Assessment

Satisfactory completion is based on demonstrating competence in all core units;

- Book work
- Projects
- Practical class work

