

# TECHNOLOGY and ENTERPRISE COMPUTING

Year 8	Year 9	Year 10	Possible Senior School Pathway	
Creative Computing	Computer Animation and Multimedia	Computer Generated Animation	Certificate II ICT	ATAR Computer Science
		Computer Programming	Certificate II ICT	ATAR Computer Science ATAR Engineering Studies
	Robotics	Robotics	Certificate II ICT	ATAR Computer Science ATAR Engineering Studies

## 8 CREATIVE COMPUTING

**(CODE 8CC)**

Students develop and apply basic computing skills in areas that reflect the advances and trends in computer technology.

These areas include:

- Image manipulation with Photoshop
- Video manipulation with Affect Effects
- 3D Animation using Muvizu
- Programming a robot
- Creative document production with MSOffice
- Web design & production with DreamWeaver

The course is designed to give students a brief overview of how industry standard software can be used as a creative productivity tool.

This course provides students with a pathway to further expand their understanding and skill level with these productivity tools in Year 9 and 10 computing courses.

## 9 COMPUTER ANIMATION and MULTIMEDIA

**(CODE 9CMM)**

**PREREQUISITE:** Nil

Students develop and apply Information Technology (IT) skills in animation and multimedia by designing and building computer generated animations and interactive multimedia products incorporating digital video and capture, audio editing and authoring tools.

- Develop IT skills in multimedia, digital capture and computer generated animations
- Investigate, design, produce and evaluate solutions to multimedia problems
- Understand hardware and software systems used in multimedia and animation

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## **10 COMPUTER GENERATED ANIMATION**

**(CODE 10CGA)**

**PREREQUISITE:** Year 9 Computer Animation and Multi Media

Students will develop digital technology skills to design computer generated imagery, build animations using 3D modeling and rendering techniques, apply special effects to digital video and use the latest movie industry standard software including After Effects, Premiere, Studio 3DS MAX and MAYA.

Students will:

- Develop skills and techniques in digital capture, manipulation, 3D modelling, computer generated animations (CGA) and computer generated imagery (CGI)
- Investigate, design, produce and evaluate CGA and CGI solutions
- Understand hardware and software systems used in CGA and CGI.

## **10 COMPUTER PROGRAMMING**

**(CODE 10COM)**

**PREREQUISITE:** Nil

Students develop and apply skills in computer control and programming. Various programming languages are used to produce simple computer games, applications and simulations.

Students will develop IT skills in programming and structured programming techniques; investigating, designing, producing and evaluating solutions to computer control and programming problems; understanding of hardware and software systems used in computer control and programming; understanding of different and relevant data types and data structures; societal and environmental issues.

## **9 ROBOTICS**

**(CODE 9ROB)**

**PREREQUISITE:** Nil

Robotics1 will cover the basic nature of robotic types and applications as well as the fundamental engineering components of robotic devices including electrical, electronic and mechanical. It will provide opportunity for students to learn how to give “intelligence” to autonomous robotic devices by using problem solving techniques, computer programming and coding.

Students will put knowledge into practice by using simulation software in the design & development process and by working in teams to program robots to accomplish set tasks.

## **10 ROBOTICS**

**(CODE10ROB)**

**PREREQUISITE:** Year 9 Robotics 1

Robotics2 will cover in more depth the engineering components of robotic devices including electrical, electronic and mechanical using CAD (AutoDesk Inventor) and 3D printing systems, and the study of dynamic and kinematic movement. It will provide opportunity for students to learn at a higher level how to give “intelligence” to autonomous robotic devices by using problem solving techniques, computer programming and coding.

Students will put knowledge into practice by using simulation software in the design & development process and by working in teams to prototype using 3D modelling software and 3D printers, design, build and program advanced robotic devices to accomplish set tasks.

# DESIGN AND TECHNOLOGY

Year 7	Year 8	Year 9	Year 10	Possible Senior School Course
Design & Technology	Design & Technology	Industrial Systems*	Industrial Systems*	General Automotive Engineering and Technology
		Metals Technology*	Metals Technology*	General Design Metals
		Wood Technology*	Wood Technology*	General Design Wood
		Technical Graphics*	Technical Graphics*	General Design Technical Graphics

\* extra cost option

## 7 DESIGN & TECHNOLOGY

**(CODE 7DAT)**

### PREREQUISITE: Nil

This course is a basic introduction unit into Design and Technology department within the Technology and Enterprise Learning Area. With the application of design, construction and evaluation of project work, students will be introduced to the safe and correct use of machines and equipment.

This unit provides students with the opportunity to:

- Develop an understanding of the safe working procedures, woodworking techniques, materials equipment and machine use.
- Develop knowledge and literacy in wood/metalwork terms
- Gain an awareness and understanding of technical graphics and graphic communication

## 8 DESIGN & TECHNOLOGY

**(CODE 8DAT)**

### PREREQUISITE: Nil

The purpose of Year 8 Design & Technology is to give students an understanding of a range of courses available in this learning area. It provides an understanding of skills, processes, materials and equipment to enable students to make informed choices for future course selections.

Students are encouraged to be innovative, adaptable and reflective to create solutions for short and long term societal and environmental problems. Assessment for each course in Design & Technology is based on the level of achievement in the Technology Process and Materials strands.

The course allows students to broaden their knowledge and skills in the areas of Woodwork; Metalwork and Technical Graphics.

Students will learn:

Emphasis on safe working practices; basic measuring and marking out; tools; processes and equipment; cutting, shaping and holding; bending and forming; joining; finishing; Technical Graphics and apply design processes to produce individual projects.

## 9 INDUSTRIAL SYSTEMS\*

**(CODE 9IND)**

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**PREREQUISITE:** Nil

Students develop skills in a wide range of industrial processes. The key outcomes of working in groups, problem solving and investigation/analysis are reinforced in this course.

Students undertake practical and theory tasks in the key industrial systems areas of:

- Mechanics
- Welding
- Pneumatics and Hydraulics
- Electronics
- Control and Building.

**10 INDUSTRIAL SYSTEMS\*****(CODE 10IND)****DESIRABLE PREREQUISITE:** Year 9 Industrial Systems

This course is available to all students and follows on from Industrial Systems Year 9, where students will further develop skills in an extended range of industrial processes. The key outcomes of working in groups, problem solving and investigation /analysis are reinforced in this course.

Students undertake practical and theory tasks in the key industrial systems areas of:

- Mechanics
- Welding
- Pneumatics and hydraulics
- Control and building
- Electronics.

**9 METALS TECHNOLOGY\*****(CODE 9MET)****PREREQUISITE:** Nil

Students develop skills in the use of hand and power tools, read workshop drawings and continue to build on design, make and appraisal skills introduced in Year 8.

The principle concepts for this course are:

- Personal and general workshop safety
- Safe and correct use of hand and power tools and machines
- Utilise the design process to solve problems
- Maintain a safe and effective workshop environment.

**10 METALS TECHNOLOGY\*****(CODE 10MET)****DESIRABLE PREREQUISITE:** Year 9 Metals Technology

Students develop skills in the use of hand and power tools, read workshop drawings (with the added emphasis on design), and make and appraise related skills.

The principle concepts for this course are:

- Personal and general workshop safety

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- Safe and correct use of hand, power tools and machines
  - Utilise the design process to solve some complex problems
  - Maintain a safe and effective workshop environment
  - Independent learning.

## **9 WOOD TECHNOLOGY\***

**(CODE 9WD)**

### **PREREQUISITE:** Nil

This course enables students to expand their knowledge, processes and practical skills: it follows on from the introductory course in Year 8. With the broadening of the design, construct and project evaluation, students consolidate the correct and safe use of machinery and equipment.

The principle concepts for this course are:

- Develop expertise in the use of hand and power tools
- Increase their knowledge and literacy skills
- Use problem solving strategies
- Reinforce and further develop safety procedures
- Learn new skills, processes and techniques.

## **10 WOOD TECHNOLOGY\***

**(CODE10WD)**

### **DESIRABLE PREREQUISITE:** Year 9 Wood Technology

This course allows students to broaden their knowledge, skills and processes, refining skills in the areas of design, problem solving and machine operations.

This course provides students with the opportunity to:

- Develop expertise in the safe use of hand and power tools
- Learn new skills, processes and construction techniques
- Reinforce and further develop safety routines and procedures
- Use problem-solving strategies through the Design Process
- Independent learning

## **9 TECHNICAL GRAPHICS**

**(CODE 9TGR)**

### **PREREQUISITE:** Nil

This course enables students to build upon their graphic communication and improve their computer skills.

This course provides students with the opportunity to:

- Develop computer literacy
- Implement problem solving skills
- Improve communication skills
- Develop a knowledge of computer assisted drawing programmes and their applications.

## **10 TECHNICAL GRAPHICS**

**(CODE 10TGR)**

### **DESIRABLE PREREQUISITE:** Nil

This course allows students to broaden their knowledge, skills, graphic communication and improve their computer skills.

This course provides students with the opportunity to:

- Further develop and consolidate computer literacy
- Implement problem solving skills
- Improve communication skills and knowledge of computer assisted drawing programmes
- Provide a sound knowledge base of Senior School Design, context: Technical Graphics).

## HOME ECONOMICS

Year 7	Year 8	Year 9	Year 10	Possible Senior School Pathway
Home Economics	Home Economics	Caring for Kids & Me*	Childcare*	General Children. Family and Community
		Fun with Foods*	Special Occasion Catering*	General Food Science and Technology
		Fashionister	Fashionister (2016→)	

\* extra cost option

### 7 HOME ECONOMICS

**(CODE 7HEC)**

**PREREQUISITE:** Nil

Basic cookery and nutrition- this is an introductory course, which provides students with healthy skills to make basic food choices and explore simple food preparation techniques. In this course students develop an understanding of basic nutrition, developing skills in preparing foods and are introduced to the design process. Students who complete this course will have the necessary background and skills to continue with food courses.

Basic sewing skills- this course gives students the opportunity to learn how to use the sewing machine and complete simple hand sewing projects. Students are introduced to the design process in order to develop skills in textiles.

### 8 HOME ECONOMICS

**(CODE 8HEC)**

**PREREQUISITE:** Nil

This exciting, year-long course will provide students with skills and knowledge required in the Home Economics field including food, textiles and independent living.

Students will complete two terms of food including cooking healthy meals and snacks, cooking for special occasions and cooking with chocolate. Students will complete three design briefs in food which will involve selecting and costing ingredients.

In Textiles (one term) students will extend their skills learnt in Year 7 by making hand sewn and machine sewn items. In Independent Living (one term) students will learn how to look after themselves and others, both in present day and future contexts. This includes budgeting with food and creating items for charity.

This course is suitable for both boys and girls and will provide students the background knowledge needed in future Home Economics courses in food, sewing and childcare.

### 9 CARING FOR KIDS & ME\*

**(CODE 9CC)**

**PREREQUISITE:** Nil

In this course, students study the world of children from 0-5 years in a fun and practical manner.

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Students learn about caring for themselves in all areas of their life.

- Learn to interact with young children
- Needs of children
- Making toys
- Prepare food for children
- Care for me
- Personal management, make-up, hair-care, nails and skin care
- Healthy eating and cooking
- Fashion and sewing.

## **10 CHILDCARE\***

**(CODE 10CC)**

### **PREREQUISITE:** Nil

If you are interested in working with children, or if you simply enjoy spending time with children, then this course is for you!

This course will cover key aspects related to:

- Growth and development
- Learn through play
- Create a positive environment for children
- Introduction to the Real Care Baby Program – virtual baby
- Have contact with children
- Be involved in practical activities.

Work covered will involve both practical and theoretical activities. Students will be assessed in the Materials and Technology Process outcomes.

## **9 FUN WITH FOODS\***

**(CODE 9FD)**

### **PREREQUISITE:** Nil

Fun with Foods introduces students to a wide range of different foods. Students study how to choose and prepare food for enjoyment and good health. A variety of recipes are prepared, including recipes of their own design and choice.

- Discussions about adolescent food choices, cooking and nutrition
- Presentation of food
- Compare commercial versus homemade food.

## **10 SPECIAL OCCASION CATERING\***

**(CODE10SOC)**

### **PREREQUISITE:** Nil

Special Occasion Catering is a fun and interesting course which studies four main areas Sharing Food with Friends; Cafe Foods; International Foods; and Cake Decorating.

- Meal planning
- Prepare entree, main and dessert

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- Prepare foods from countries all over the world
  - Investigate foods for special occasions
  - Design and make a Christmas cake
  - Produce foods suitable for a café

## **9 FASHIONISTER\***

**(CODE9FSN)**

### **PREREQUISITE: Nil**

Are you are Fashionister?

This course allows every student to, at whatever stage of skill, to develop their fabric construction skills. Students will work on a range of fashion and craft projects that will incorporate many of their own ideas and designs resulting in clothes and accessories that reflect their own taste and style.

- Pencil case
- Nightie/ or pyjama bottoms
- Top of own design
- Felties
- Wool for school project
- Creating with textiles ie tie dying, weaving
- Properties of fabrics
- Reversible bag (beach)
- Bedroom item
- Possible excursion to Bentley TAFE ( Fashion School)

Students will need to purchase their own material for some of the projects.