



Design & Technology: Electronics

What is Electronics?

Electronics involves the use of a range of analogue and digital systems and technologies. This is combined with the development of a variety of problem solving, electronic circuit construction techniques, and particular to the functioning of electronic products.

Why study Electronics?

Students learn about the products, processes, and systems of the natural and designed world. They develop an understanding of how the use of technology has created new and rapidly changing opportunities in local, national, and global contexts. The study of Design and Technology is about developing knowledge, skills, and techniques, and applying these to new experiences and problems to create optimum solutions. Students develop the ability to use, manage, assess, and understand the implications, applications, and consequences of technology. They understand their social responsibilities in the use of the resources, materials, and systems, including recycling and waste disposal, and identify the effects on the individual, society, and the environment. A technologically literate student is able to draw on knowledge and understanding developed through different disciplines to realise solutions through applied problem solving. Students are able to enhance their manipulative and other practical skills in Design and Technology, and reflect on what they have learnt to make informed decisions and develop their capabilities for life and work..

Course content of Electronics

The course in Electronics is comprised of the following;

1. Two skills and application tasks: Students negotiate with their teacher the electronic systems they wish to explore. This research will be in preparation for the realisation of the electronic system (Product). Students and teachers negotiate whether it would be appropriate to demonstrate these processes and techniques in a single session, or over a more extended period of time. This assessment could comprise one task or a series of tasks.
2. Folio: Students identify a need, problem, or challenge and create an initial design brief relevant to the chosen context. They investigate and analyse a range of existing electronic systems. Students describe and analyse the purpose of the electronic system, its circuit design and the methods of its production. They make recommendations for adoption, improvement, or redevelopment to validate their design brief. An investigation study of the impact of technological issues relevant to the product is also required. Their investigation study will include the impact on the individual, society, environment and/or technological practices related to the product. Through planning, students will create electronic system design ideas from recommendations made in the investigating stage. The presentation and quality of the design ideas relating to their electronic system (Product) will also be considered during the course. Students will select appropriate means to present their ideas, concepts, and design proposals to a given audience.
3. Product: Students work individually to produce an electronic system (Product) based on the specifications provided by the product design brief in their folio. Students choose and use appropriate materials, safely use a range of tools, equipment, and systems, and apply appropriate processes and production techniques to create an electronic product. Students will also be required to evaluate their electronic device against the requirements of the design brief.

Electronics continued

Assessment Components

Assessment Type 1: Skills and Applications Tasks	20%
Assessment Type 2: Folio	30%
Assessment Type 3: Product	50%

Learning Requirements of the Course

At the end of the program in Stage 1 Electronics students should be able to:

1. Investigate the purpose, design concepts, processes, and production techniques of existing products or systems
2. Create, test, validate, modify, and communicate design ideas for an identified need, problem or challenge
3. Recognise and use the differing characteristics and properties of materials, components, techniques, and equipment to create a product or system safely
4. Use the design process to gather, analyse, and apply information to solve technological problems
5. Apply appropriate knowledge and understanding of skills, processes, procedures, and techniques to a range of technological activities
6. Evaluate the product or system development and outcome with reference to the design brief
7. Analyse the impact of technological practices, products, or systems on individuals, society, and/or the environment.

Future Pathways in Electronics

Completion of the course provides excellent preparation for entry a wide range of trades, post secondary and TAFE courses.

Required Text(s) for Electronics

All course notes are supplied.

What are the prerequisites?

There are no prerequisites but completion of Design & Technology subjects in Year 10 is an advantage..



TRINITY COLLEGE
Senior

Contact Details

For more information about studying Year 11 at Trinity College Senior, please contact the Head of Year 11 on 8523 8705 or visit: www.trinity.sa.edu.au/curriculum/index.htm

Further Information

More information about SACE may be obtained from the SACE Board of South Australia webpage at: www.sace.sa.edu.au