



Southern Cross Catholic College

Subject Selection Evening

Technologies - General



Engineering

The problem-solving process in Engineering involves the practical application of science, technology, engineering and mathematics (STEM) knowledge to develop sustainable products, processes and services. Engineers use their technical and social knowledge to solve problems in ways that meet the needs of today's individuals, communities, businesses and environments, without compromising the potential needs of future generations. Students who study Engineering develop technical knowledge and problem-solving skills that enable them to respond to and manage ongoing technological and societal change.

Pathways

Engineering is a General subject suited to students who are interested in pathways beyond school that lead to tertiary studies, vocational education or work. A course of study in Engineering can establish a basis for further education and employment in the field of engineering, including, but not limited to, civil, mechanical, mechatronic, electrical, aerospace, mining, process, chemical, marine, biomedical, telecommunications, environmental, micro-nano and systems. The study of engineering will also benefit students wishing to pursue post-school tertiary pathways that lead to careers in architecture, project management, aviation, surveying and spatial sciences.

Units of Study

Unit 1

Engineering fundamentals and society

Unit 2


Emerging technologies

Unit 3

Statics of structures and environmental considerations

Unit 4

Machines and mechanisms





Design

The Design subject focuses on the application of design thinking to envisage creative products, services and environments in response to human needs, wants and opportunities. Designing is a complex and sophisticated form of problem-solving that uses divergent and convergent thinking strategies that can be practised and improved. Designers are separated from the constraints of production processes to allow them to appreciate and exploit innovative ideas.

Pathways

Design is a General subject suited to students who are interested in pathways beyond school that lead to tertiary studies, vocational education or work. A course of study in Design can establish a basis for further education and employment in the fields of architecture, digital media design, fashion design, graphic design, industrial design, interior design and landscape architecture.

Units of Study

Unit 1

Design in practice

Unit 2

Commercial design

Unit 3

Human-centred design

Unit 4

Sustainable design



Food and Nutrition

Food & Nutrition is the study of food in the context of food science, nutrition and food technologies. Students explore the chemical and functional properties of nutrients to create food solutions that maintain the beneficial nutritive values. This knowledge is fundamental for continued development of a safe and sustainable food system that can produce high quality, nutritious solutions with an extended shelf life. The food system includes the sectors of production, processing, distribution, consumption, research and development. Waste management, sustainability and food protection are overarching principles that have an impact on all sectors of the food system. Students will actively engage in a food and nutrition problem-solving process to create food solutions that contribute positively to preferred personal, social, ethical, economic, environmental, legal, sustainable and technological futures.

Units of Study

Unit 1

Food science of vitamins, minerals and protein

Unit 2

Food drivers and emerging trends

Unit 3

Food science of carbohydrate and fat

Unit 4

Food solution for nutrition consumer markets

Pathways

Food & Nutrition is a General subject suited to students who are interested in pathways beyond school that lead to further education, training and employment. A course of study in Food & Nutrition can establish a basis for further education and employment in the fields of science, technology, engineering and health.