

# Engineering Studies

## COURSE DETAILS

<b>Hours</b>	240 hours
<b>Type</b>	Board Developed Course
<b>Duration</b>	2 years
<b>Unit Value</b>	2-unit Year 11 2-unit Year 12
<b>HSC Exam</b>	Yes
<b>ATAR</b>	Yes
<b>Exclusions</b>	Nil
<b>RECOGNITION</b>	HSC Qualification

## COURSE DESCRIPTION

Engineering Studies is directed towards the development and application of mathematical, scientific and technological skills and their integration with business and management. It provides students with skills, knowledge and understanding associated with a study of engineering, its practices and associated methodologies. The subject promotes environmental, economic and global awareness, problem-solving ability, engagement with information technology, self-directed learning, communication, management and skills in working as a team.

Engineering Studies is unique in that it develops knowledge and understanding of the profession of engineering. It also provides an opportunity to integrate the science and mathematics disciplines with societal development and change. The syllabus is inclusive of the needs, interests and aspirations of all students and provides opportunities and challenges to deal with engineering concepts.

## AIMS

The aim of Engineering Studies Stage 6 is to develop students understanding and appreciation of the nature and significance of engineering and its impact on society with an emphasis on the application of engineering methodology.

## YEAR 11 COURSE OUTCOMES (from NESA)

- P1.1 identifies the scope of engineering and recognises current innovations
- P1.2 explains the relationship between properties, structure, uses and applications of materials in engineering
- P2.1 describes the types of materials, components and processes and explains their implications for engineering development
- P2.2 describes the nature of engineering in specific fields and its importance to society
- P3.1 uses mathematical, scientific and graphical methods to solve problems of engineering practice
- P3.2 develops written, oral and presentation skills and applies these to engineering reports
- P3.3 applies graphics as a communication tool
- P4.1 describes developments in technology and their impact on engineering products
- P4.2 describes the influence of technological change on engineering and its effect on people
- P4.3 identifies the social, environmental and cultural implications of technological change in engineering
- P5.1 demonstrates the ability to work both individually and in teams
- P5.2 applies management and planning skills related to engineering
- P6.1 applies knowledge and skills in research and problem-solving related to engineering
- P6.2 applies skills in analysis, synthesis and experimentation related to engineering

## TOPICS COVERED

### Year 11 Course

#### Engineering Application Module

- Household Appliances; Engineering Application Module 2
- Landscape Products; Engineering Application Module 3
- Braking Systems; Engineering Focus Module 1
- Bio-engineering; Elective

### Year 12 Course

#### Engineering Application Module

- Civil Structures; Engineering Application Module 2
- Personal & Public Transport; Engineering Application Module 3
- Lifting Devices; Engineering Focus Module 1
- Aeronautical Engineering; Engineering Focus Module 2
- Telecommunications Engineering

## ASSESSMENT

Assessment strategies may include:

- Examinations
- Research Tasks
- Practicals

## POTENTIAL CAREERS / REASONS TO CHOOSE COURSE

- Engineer
- Architect
- Building
- Transportation design
- Mechanic
- Telecommunications