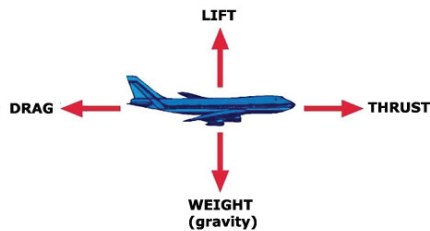




MELVILLE HIGH SCHOOL
TAS FACULTY



ENGINEERING STUDIES

This course provides students with the opportunity to study engineering by investigating a range of applications and fields of engineering. This includes Aeronautical, Telecommunications, Biomedical and Civil Engineering. Students learn about historical and societal influences, the scope of the profession and develop skills in technical communication. Students apply knowledge of engineering mechanics, hydraulics, electricity, electronics and engineering materials to solve engineering problems.

Careers in Engineering

Occupations where a study of Engineering Studies would be useful are endless, but could include: -

Electrical Engineering
Software Engineering
Mechanical Engineering
Industrial Engineering
Aerospace Engineering
Chemical Engineering
Environmental Engineering
Agricultural Engineering
Petroleum Engineering
Geological Engineering
Biomedical Engineering
Automotive Engineering
Nuclear Engineering
Civil Engineering
Structural Engineering

In broad terms, engineering can be divided into four main categories – chemical, civil, electrical and mechanical engineering



www.melville-h.schools.nsw.edu.au

MELVILLE HIGH SCHOOL

44-50 NICHOLSON STREET, KEMPSEY, NSW 2440
PH (02) 6562 7511

Why study Engineering Studies?

Students will develop:

- An understanding of the scope of engineering and the role of the engineer
- Knowledge and understanding of engineering principles and an appreciation of the responsibilities of engineers in society
- Communication skills appropriate to engineering practices
- Knowledge and understanding of developments in technology and an appreciation of their influence on people and engineering practice
- Management and problem-solving skills in engineering contexts
- Skills in the application of engineering methodology.

Course Topics

Year 11

Engineering application
module 1
Engineering fundamentals
Engineering application
module 2
Engineered products
Engineering application
module 3
Braking systems
Engineering focus
module 4
Biomedical engineering

Year 12

Engineering application
module
Civil Structures
Engineering application
module
Personal and public transport
Engineering focus
module
Aeronautical engineering
Engineering focus
module
Telecommunications engineering

Aim

- *The aim of the Engineering Studies Stage 6 Syllabus is to develop students' understanding and appreciation of the nature, significance and methodology of engineering and its impact on society.*

Continuum of Learning for Engineering Studies

Stages 1–3

Science and Technology

Stage 4

Technology (mandatory course)

Stage 5

Technology elective courses that provide relevant experiences for Engineering Studies Stage 6:

- *Design and Technology*
- *Graphics Technology*
- *Industrial Technology*
- *Information and Software Technology*

Students may undertake work in Stage 5 electives that have a focus (and project work) related to that of Engineering Studies Stage 6.

Stage 6

*Engineering Studies
Workplace / University / TAFE / Other*

Course Specific details for Engineering Studies

- ❖ *Unit Value: 2 Units*
- ❖ *HSC Exam: 3 hour*
- ❖ *Engineering reports - Students will produce engineering report in the engineering application module, Braking Systems before producing a complete engineering report in engineering focus module, Biomedical Engineering.*
- ❖ *Examinations - Students will complete formal examinations to assess their understanding.*
- ❖ *The majority of the Engineering Studies course is theoretical based, with limited practical components. Students who prefer practical subjects should consider choosing such courses as Industrial Technology instead.*
- ❖ *A certain level of Mathematical ability is needed to successfully complete many components of this course.*

*Further information about the course content and outcomes can be obtained from the website below.
<https://educationstandards.nsw.edu.au/wps/portal/nesa/11-12/stage-6-learning-areas/technologies/engineering-studies-syllabus>*