Subject name **Engineering**
Subject code EGR
Subject type General
Subject fee Nil
Prerequisites Minimum C Year 10 Semester 2 Maths Methods and Minimum C General English/Literature

Course overview

Engineering includes the study of mechanics, materials science and control technologies through real-world engineering contexts where students engage in problem-based learning.
Students learn to explore complex, open-ended problems and develop engineered solutions. They recognise and describe engineering problems, determine solution success criteria, develop and communicate ideas and predict, generate, evaluate and refine prototype solutions.
Students justify their decision-making and acknowledge the societal, economic and environmental sustainability of their engineered solutions. The problem-based learning framework in Engineering encourages students to become self-directed learners and develop beneficial collaboration and management skills.

Course outline

Unit 1	Unit 2	Unit 3	Unit 4
Engineering fundamentals and society • Engineering history • The problem-solving process in Engineering • Engineering communication • Introduction to Engineering mechanics • Introduction to engineering materials	**Emerging technologies** • Emerging needs • Emerging processes and machinery • Emerging materials • Exploring autonomy	**Statics of structures and environmental considerations** • Application of the problem-solving process in Engineering • Civil structures and the environment • Civil structures, materials and forces	**Machines and mechanisms** • Machines in society • Materials • Machine control

Assessment - Term 3

Units 1 and 2 are devised to replicate instruments used in Units 3 and 4. Assessments in Unit 1 and 2 are formative. In Units 3 and 4 students complete four Summative assessments. The results from each of the assessments are added together to provide a subject score out of 100. Students will also receive an overall exit subject result from QCAA.

Summative assessments

Unit 3		Unit 4	
Summative internal assessment 1: • Project — folio	25%	Summative internal assessment 3: • Project — folio	25%
Summative internal assessment 2: • Examination	25%	Summative external assessment: • Examination	25%

Course accreditation

QCAA General subject contributing to an ATAR score.

Career opportunities

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.