ENGINEERING

HOW WILL I BENEFIT FROM STUDYING ENGINEERING?

Engineering is a course of study which contextualises the Australian Curriculum (Technologies, Mathematics, Science) and prepares students for Senior Engineering. It challenges you to explore open-ended problems and actively construct your learning by undertaking purposeful engineering activities and applying learned technical knowledge, principles, processes, and skills.

The problem-solving process in Engineering aligns with a problem-based framework, requiring engagement with the phases of exploring, developing, generating, evaluating, and refining to mirror real-world scenarios. Engineering allows for the development of critical and creative thinking, communication, collaboration, and teamwork, personal and social skills, and information and communication skills.

THE MAIN AREAS OF FOCUS THROUGH THE COURSE OF STUDY ARE:

- Engineering Materials Science
- Engineering Mathematics (Mechanics)
- Control Systems (Electronics, Flow Charts, Logic)
- Engineering Communication – CAD software (Fusion 360, ArchiCAD)
- Workshop Tools & Equipment Including Safe & Responsible Use
- 21st Century Tooling – 3D Printers, Laser Cutters, CNC Routers
- Project-Folio Compilation – Presentation & Reporting Techniques for Problem-Based Learning Challenges

WHAT ARE THE TOPICS IN YEAR 8?

- 3D Parametric Software – Fusion 360: Modelling, Simulation, Working Drawings
- Architectural Communication – Archicad
- Additive Manufacture – 3D Printing
- Laser Cutting & Etching
- Concrete as an Engineering Material

WHAT IS THE ASSESSMENT?

The problem-based projects in Year 8 typically span a term and require submission toward the end of a Project Folio documenting evidence of the learning that has taken place.

For Engineering Communication units (Fusion/ArchiCAD), this will take the form of:

- Engineering Drawings
- Floor Plans
- Stress Analysis/Simulation

For Concrete as an Engineering Material, this will include:

- A practical component and theoretical report

For the Additive Manufacture unit (3D Printers), this will include:

- A practical component
- Safety test (onguard)
- Technical report/project-folio

Student's overall achievements are assessed within the following criteria:

- Knowledge & Understanding
- Processes & Production Skills