Industrial Technology – Engineering/Design and Technology

What is this subject about?

At Inaburra School, Industrial Technology Engineering and Industrial Technology are being taught as an integrated course over two years. It is therefore important that students and parents understand that all of Year 9 and Year 10 must be completed in this course for a RoSA credential to be attained. This has implications for accelerating Mathematic students, (who will drop one of their electives in Year 10) if they have Industrial Technology – Engineering/Design and Technology as their third elective, and for students who may not complete their Year 10 here at Inaburra.

Engineering and Design is a practical course with individual and group projects and experimental work. Students explore the purpose of structures and mechanisms with applications in gears, pulleys and levers. Practical experiences involve the manufacture and destruction of structures, aiming to understand the effect of forces on concrete and timber.

The design component of the course may involve the use of the 3D printer, laser cutter and CNC router to bring the students' design concepts to fruition. Students will problem solve and develop their creativity whilst having the freedom to make their own design decisions.

Drawing skills are taught throughout the course including freehand drawing and sketching, pictorial, orthogonal drawing and CAD drawing.

Course Topics	Description
Engineered Structures	Investigation of structures such as bridges, dams, chairs and buildings.
Engineered Mechanisms	Exploration of the function of levers, gears and pulleys.

Why study this subject?

The study of Engineering and Design provides students with a broad knowledge of basic engineering principles whilst they are immersed in practical design experiences. The course develops skills in the use of materials, tools and techniques as well as skills in drawing.

This course is suited to those students who enjoy Science, as well as other practical subjects as it is very hands on and accommodates a variety of learning styles. Students who enjoy learning through active practical work will enjoy this course.

This course will give a good foundation for the senior Engineering Studies and Design and Technology courses. Engineering and Design courses at university are in high demand currently. This combined Year 9/10 course will give a good grounding in Engineering and Design allowing students to make wise decisions at Stage 6 subject selection.

Learning experiences

The majority of the course consists of practical experiences related to theory. Possible practical projects include:

- Tower building and demolition
- Bottle rockets
- Café or interior design
- Lights

- Jewellery
- Furniture and Homewares
- Clocks
- Trebuchets

Students will work both independently and in groups to complete projects including an **Individual Negotiated Project**. A large range of individual projects is available. These may include lights, clocks, jewellery, café design, and furniture and homeware design. Students may use Photoshop, CAD drawing, 3D printers, Laser Cutter, workshops (textiles, timber and metalwork) as well as computer labs to complete this project.

Special note:

A student who does not complete 2 years will not have this course on their RoSA.