

This study allows students to develop capabilities in and knowledge about the design, operation, construction, assembly, maintenance, repair and evaluation of technological systems. This study promotes innovative thinking and problem-solving skills through a project based learning approach. The study emphasises integration of basic mechanical, electro-technology, physics and mathematical skills with practical tasks. Students also learn about different energy sources and new and emerging technologies.

Unit 1: Mechanical Engineering Fundamentals

This unit focuses on mechanical engineering fundamentals as the basis of understanding the underlying principles and the building blocks that operate in the simplest to more complex mechanical devices. Students study fundamental mechanical engineering principles, including the representation of mechanical devices, the motions performed, the elementary applied physics, and the mathematical calculations that can be applied in order to define and explain the physical characteristics. The unit allows for a 'hands on' approach, as students apply their knowledge and construct functional systems.

Unit 2: Electro technology Engineering Fundamentals

This unit focuses on building understanding of the fundamental principles of electrical and electronic circuits, collectively and commonly referred to as electro-technology. Through the application of their knowledge, students produce basic operational systems.

Units 3 and 4: Integrated Systems

These units involve a study of the principle associated with integrated systems. The focus is on the functional integration of a mechanical subsystem with an electro technology subsystem and the design factors to be considered. One substantial production is to be undertaken across both Units 3 and 4.

The terms mechanical and electro-technology are used as descriptors for the types of systems covered by this study. Mechanical systems include pneumatic and hydraulic systems and subsystems. Electro-technology is an inclusive term that includes electrical, electronic and microelectronic systems and subsystems.

Career Options

Engineering, Robotics, Automation and Control Technologies, Energy Management, Aviation Industry, Industrial Engineer, Theatre and special effects, Electrical Trades, Electro technology, Hydraulics and Pneumatics, Mechanical, Diesel Technician, Automotive Industry, Telecommunications Industry, Refrigeration/Air Conditioning, Maintenance Fitter