SYSTEMS ENGINEERING

UNIT 3

In this unit students study engineering principles used to explain physical properties of integrated systems and how they work. Students design and plan an operational, mechanical and electrotechnological integrated and controlled system. They learn about the technologies used to harness energy sources to provide power for engineered systems.

AREAS OF STUDY

- Integrated and controlled systems designs
- Clean energy technologies

OUTCOMES

Outcome 1: On completion of this unit the student should be able to investigate, analyse and apply concepts and principles, and use components to design, plan and commence production of an integrated and controlled mechanical and electrotechnological system using the systems engineering process.

Outcome 2: On completion of this unit the student should be able to discuss the advantages and disadvantages of renewable and non-renewable energy sources, and analyse and evaluate the technology used to harness, generate and store non-renewable and renewable energy.

UNIT 4

In this unit students complete the creation of the mechanical and electrotechnological integrated and controlled system they researched, designed, planned and commenced production of in Unit 3. Students investigate new and emerging technologies, consider reasons for their development and analyse their impacts. Students expand their knowledge of emerging developments and innovations through their investigation and analysis of a range of engineered systems. They analyse a specific emerging innovation, including its impacts.

AREAS OF STUDY

- Producing and evaluating integrated and controlled systems
- New and emerging technologies

OUTCOMES

Outcome 1: On completion of this unit the student should be able to finalise production, test and diagnose a mechanical and electrotechnological integrated and controlled system using the systems engineering process, and manage, document and evaluate the system and the process, as well as their use of it.

Outcome 2: On completion of this unit the student should be able to evaluate a range of new or emerging systems engineering technologies and analyse the likely impacts of a selected technology.