

Diploma in Mechanical Engineering Technology

Module Outlines

Engineering Mathematics 1

This module covers the parts of algebra which are fundamental to all of mathematics and its applications in Science and Engineering. This module altogether with Engineering Mathematics 2 is designed to cover the range of basic and essential mathematical topics of importance to students studying Engineering at Diploma and year one undergraduate level.

Engineering Mathematics 2

This module continues on the knowledge gained in Engineering Mathematics 1 with the more advanced topics of differentiation, integration, differential equations and their applications in many areas of engineering. This module will provide a solid theoretical base for the more applied side of Engineering Mathematics to be seen in year two and beyond of undergraduate engineering studies.

Electrical and Electronic Principles 1

This is the first part of a two-part module providing a basic understanding of Electrical and Electronic Engineering at the Diploma level.

Mechanical Science

This module covers the fundamental concepts in Engineering ThermoFluids (Fluid Mechanics, Thermodynamics and Heat Transfer) and in Engineering Mechanics (Statics and Dynamics) required at diploma level. These concepts are essential for an effective understanding and practical use of the underlying engineering principles embedded throughout Mechanical Engineering.

Engineering Computation and Drawing

This module introduces the student to two important areas of practical use of modern software in mechanical Engineering: use of the CAE software SolidWorks for applications in Engineering Drawing, Part and Assembly Modelling and use of Microsoft Excel for practical engineering use of data in its various forms. The skills taught in this module will be essential for subsequent courses in engineering studies and in future working environments.

Academic Reading and Writing 2

There has been a need to continually improve the English quality of our students and provide them constant support at their diploma levels. This module is designed for students who are enrolled in diploma programmes to work intensively on their reading and writing skills.

This is a more intensive module that will develop better reading and writing skills as they are the keys to understanding their subjects and effectively engage in class activities. These classes will address a variety of key demands of writing and reading assignments on their courses, focusing on both academic and language skills and the ability to write. The module is taught in a blended learning environment where students will have the opportunity to experiment and learn in both online and face-to-face lessons.

Mechanical Design and Engineering Applications

Mechanical Design is one of the most important engineering functions for it is through design that new products and processes are born and that old ones are improved. Design requires sound engineering judgment as well as a good grasp of the underlying basic science and mathematics. This module aims to integrate the knowledge that the student has gained earlier in their course and to focus the student's analytical skills towards synthesis of solutions by working through the design of several simple, commonly used devices. Engineering applications will develop the student's practical understanding of engineering products, components and systems including an awareness of the manufacturing technology involved. A series of practical experimental tests, carried out individually or within a group will enhance the student's understanding of the Mechanical Engineering principles involved in the design and in the function of an engineering product.

Strength of Materials

This module provides the basic topics of structural analysis. The goal is to enable the students to solve elastic problems involving any external loading, with particular focus on the calculation of stresses and deformations. It will also serve as foundation knowledge to all students studying Engineering at the Diploma level.

Engineering Materials and Manufacturing Processes

This module provides a basic understanding of materials aspect necessary for engineering students. It will also serve as foundation knowledge to all students studying Engineering at the Diploma level.

Introduction to Programming

The module introduces the techniques and concepts of programming language. Participants are taught problem-solving skills using structured and object-oriented approaches.

Introduction to Software Engineering

Software engineering concepts play an important role in software implementation. The unit introduces the methods, techniques, tools and standards that comprise the discipline of software engineering. It includes a traditional plan-based approach that incorporates some novel agile methods.