

# Advanced Diploma in Mechanical Engineering

## OVERVIEW

There is a shortage of highly skilled practically oriented mechanical engineers in the world today, due to new technologies only recently becoming a vital component of all modern plants, factories and offices. The critical shortage of experts in the area has been accentuated by retirement, restructuring and rapid growth in new industries and technologies. This is regardless of the recession in many countries. Many businesses throughout the world comment on the difficulty in finding experienced mechanical engineers.

## PROGRAMME OBJECTIVES:

The course is also emphasizing the development of practical skills and experimentation through the use of laboratories, industrial visits, etc. This course prepares students for employment in the electrical and electronic engineering sector. This course is suitable for students who have already decided that they wish to work in this area of work.

## DURATION COMPONENTS:

Classroom Training Hours: 30 Hours Per Module

## MODULE SYNOPSIS:

### CI501 Control and Instrumentations

This module aims to provide a basic understanding and builds the mathematical background for the modelling, design and analysis of linear single-input single-output feedback systems.

### MT501 Manufacturing Technology

Manufacturing is the creation, through one or several processing operations, of components or products from basic raw materials. The effectiveness of process selection will be based on the inter-related criterion of design parameters, material selection and process economies. The module aims to help students develop and implement innovative technological solutions for manufacturing problems

### EM401 Engineering Mathematics

The mathematics plays an important key role in establishing the foundation of the design skills of an engineer, and it will help to increase student's knowledge and ability to communicate the ideas of engineering within this discipline. This module aims to enable the students to become proficient in the application of the mathematical and statistical principles and techniques to analyse and solve the problem within an engineering context.

### EP401 Engineering Principles

The module aims to provide the knowledge, problem-solving skills and practical aspects of engineering sciences. This module is encouraging students to explore a broad range of engineering topics, including parameters within mechanical engineering systems, characteristics and properties of engineering materials, A.C./D.C. circuit theorems, network analysis and electromagnetic principles and properties. On successful completion of this module, students will be able to learn on how to apply the mechanical and electrical science to find solutions to a variety of engineering problems and how to document their work and communicate their solutions to their peers.

## ASSESSMENT METHODS:

70% Coursework & 30% Examination for all module except **Integrated Engineering Project is 100% Coursework.**

## PROGRAMME OUTCOMES:

Upon completion of this course, students will be able to understand the principles in Electrical and Electronic Engineering and will have learned to apply those principles more widely including different approaches to solving the problem in the workplace.

## AWARDING BODIES:

Global School of Technology and Management

## NUMBER OF MODULE:

7

## TOTAL CONTACT HOURS:

240

## PT501 Thermodynamics and Heat Transfer

The module's learning objectives are to provide students with the knowledge and understanding required to analyse thermodynamic systems concerned with conversion processes between heat and work. This module stresses the fundamentals while emphasising issues and limitations of the energy generation process and how energy can be recovered from processes to improve the overall efficiency. Students will learn the first law and the second law of thermodynamics, the use of these laws in a variety of engineering applications, and fundamental modes of heat transfer (conduction, convection, and radiation).

## FM501 Fluids Mechanic

The module aims to provide students with the knowledge and understanding of fluid mechanics to carry out professional engineering activities in the field of fluid. Upon completion of this module, the students will be able to Know, understand and apply the basic concepts of Fluid Mechanics to carry out professional engineering activities in the field of fluids; Use specific vocabulary and terminology and the appropriate means to effectively communicate knowledge, procedures, results, skills and aspects inherent to fluid mechanics; Work efficiently in a group, integrating skills and knowledge to make decisions in the performance of fluid mechanics tasks, adopting a responsible and organised attitude to work and a willingness to learn and Plan and carry out designs and processes in the field of fluid mechanics in accordance with the relevant specific technology, applying the quality principles and methods and analysing and assessing the social and environmental impact of the technical solutions adopted.

## IP501 Integrated Engineering Project

The learning objective of this module is to provide the practical and professional skills to enable students to develop practical professional engineering skills required for conceiving, designing, implementing and operating engineering solutions. The project work involves students in developing, managing and achieving the objectives of an engineering project and applying professional and technical skills and knowledge in a real case scenario. The project is encouraging a holistic approach to managing the technical and managerial aspects of an engineering project, using the multiple technologies and topics that the students have learned.