

# Advanced Diploma in Electrical and Electronic Engineering

## OVERVIEW

The Advanced Diploma in Electrical and Electronic Engineering aims for the development of a professional attitude and cultivates technical proficiency in Electrical and Electronic Engineering field including the ability to tackle a wide variety of practical problems in the engineering sector. This course provides students a career path of development in this emerging industry, which in turn helps the development of the economy of Singapore as a whole.

## 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

### ES501 Electric Power Distribution Systems

This module aims for providing an understanding of the fundamental principles of power distribution system operation. The distribution system, with its vast electrical network and hardware infrastructure, is one of the most capital and maintenance cost intensive assets of the electric power utility. The distribution system is the link that connects an electric utility to its customers and is the space where power transactions and customer interactions exist. Students will learn the planning, design, analysis and operational concepts of the distribution systems including considerations of voltage regulation, protection, and reliability as well as the application of distributed generation and smart grid technology

### 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.

## 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

### 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 documents their work and communicate their solutions to their peers.

### PT501 Power Generation & Transformation

In a world with ever-increasing energy demands and the limitations now being felt through society due to our dependence on a limited range of energy sources, the necessity for a greater diversity of energy sources is mounting. This module aims to provide the students with a strong understanding of the underlying science behind the generation, transformation and utilisation of energy resources. The learning objectives of this module are to provide students with sufficient fundamental knowledge of the underlying science behind energy systems to make assessments of differing energy options and therefore have an intuitive feel for the accuracy of the scientific details.

### 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.