

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 filed 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 also emphasises 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 to work in this area of work.

DURATION COMPONENTS:

Classroom Training Hours: 30 - 42 Hours Per Module

MODULE SYNOPSIS:

ENG509 Control System and Instrumentation Engineering

This module aims to provide a basic understanding and build the mathematical background for modelling, designing, and analysing linear single-input single-output feedback systems.

ENG510 Sustainable Industry, Design and Manufacturing Technology

Through one or several processing operations, Manufacturing is the creation 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

ENG516 Electric Power Distribution Systems

This module aims for providing an understanding of the fundamental principles of power distribution system operation. With its vast electrical network and hardware infrastructure, the distribution system 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

ASSESSMENT METHODS:

70% Coursework & 30% Examination for all module (Excluding ENG510, ENG514, ENG515, ADIA509 and ADIA509 are 100% Coursework)

PROGRAMME OUTCOMES:

Upon completion of this course, students will understand the principles of Electrical and Electronic Engineering. They 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 MODULES:

9

TOTAL CONTACT HOURS:

288

(Including Classroom, Tutorials, PC Labs, Laboratories, Workshops and Site Visit)

ENG517 Power Generation and Transformation

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

ENG507 Numerical Analysis

The module focuses on developing the mathematical skills and knowledge of science and engineering students in calculus and matrix theory to solve first- and second-order differential equations underpinning the engineering disciplines

ENG518 Intelligent Buildings

This module aims to introduce students the basic concepts and knowledge on the application of appropriate methods and tools in systems for technical management of home and building equipment and intelligent buildings, learning about electronic systems used in building automation, implementation of intelligent control algorithms in intelligent buildings, acquiring skills in programming controllers managing building installations, using mobile devices to manage building installations and low energy wireless networks.

ENG514 Industrial Design and Product Case Studies

This module introduces industrial design as a creative discipline in sciences and engineering. Industrial design is known for its ability to innovate and add value to products and services.

Industrial designers solve problems centred on user needs to improve the quality of people's lives. The design incorporates unique problem-solving methods and creative processes, and industrial design intends to work with technological and ecological parameters appropriately.

The development and use of state-of-the-art tools and technologies put industrial design in a significant position socially and economically.

ENG515 Group Design and Innovation Project

This module is a practical project-based module, where students will immerse themselves in engineering projects and product analysis.

Students will use the practical and project-related skills they have developed so far to design and produce components and/or products alongside necessary project management skills.

The learning objectives of this module are to provide students with an opportunity to integrate and apply knowledge from different disciplines of mechanical engineering to conduct an open-ended engineering project and requires team collaboration for its completion.

ADIA508 Industry Attachment

Industrial Attachment is an important aspect and a component of a students' development. As part of the course curriculum, students are expected to undertake a 24 weeks/ 6-month industrial attachment in the related industries. Students will take an internship programme with construction companies related to their interests or area of specialisation.

GSTM will facilitate the arrangement and process of students' entire Industrial Attachment. Industrial Attachment applies to all students. The program will facilitate student-learning opportunities outside the classroom throughout the six-month attachment. Different business organisations will have different modes of training, which would be typical in real-life environments

Industrial Attachment is an integral part of the course. In the unlikely event that a student cannot be placed for Industrial Attachment, due to circumstances beyond the control of the student or the college, like non-approval of the Training Work Permit by the Ministry of Manpower, the student will be required to complete an Industrial Project (5000 words) under the supervision of a lecturer from GSTM.

ADIP509 Industry Project

The industrial project applies only when a student is unable to secure an industrial attachment with any organisation. In the absence of an industrial attachment, the student has to complete an individual project lasting 2 months.

The industrial project (5000 words) topic must be relevant to the construction management industry and approved by the school. Students have a maximum of Two months to complete the project after approval. The Industrial Project provides an opportunity for students to integrate their knowledge through application to a practical-based classroom project by selecting the student's choice of industry. Preferably, this project focuses on an organisation's identified management issues and/or opportunities.

The project work involves students developing, managing and achieving the objectives of the construction management project and applying theories, topics and knowledge that the students have learned in a real case scenario. It encourages a holistic approach to managing the managerial aspects of a construction management project, using the multiple theories and topics that the students have learned