Specialist Diploma in Mechanical Engineering

OVERVIEW

Mechanical Engineering is at the forefront of developing new technologies for some industries including transport, healthcare, construction and robotics. They build societies and apply fundamental maths and physics laws to create and build mechanical devices we use every day.

PROGRAMME OBJECTIVES:

This course aims are to equip students with applied knowledge, understanding and skills for success in employment in the Mechanical Engineering sector and develop a wide range of skills and techniques, personal qualities and attributes essential for successful performance and immediately contribution to employment

PROGRAMME OUTCOMES:

Upon completion of the course, the students will be competent to:

- Plan, co-ordinate, implement and evaluate quality control and quality assurance procedures to meet organizational standards and requirements
- Analyse and solve complex mechanical problem by applying mathematics and fundamentals of mechanical engineering

ASSESSMENT METHODS:

Combination of 70% Coursework and 30% Examination OR 100% Coursework.

AWARDING BODIES:

Global School of Technology and Management

DURATION COMPONENTS:

Classroom Training Hours: 30 Hours Per Module

(Excluding SDCE404 & SDME401 – 36 hours per module)

NUMBER OF MODULE:

8

TOTAL CONTACT HOURS:

252 hours

MODULE SYNOPSIS:

EP401 Engineering Principles

The module aims to provide the knowledge, problem-solving skills and practical aspects of engineering sciences. This module encourages 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 properties

MMA402 Mathematical Modeling and Applications

Mathematical Modeling is becoming an increasingly important subject as computers expand our ability to translate mathematical equations and formulations into concrete conclusions concerning realistic engineering problems. Engineering students must understand the fundamental mathematical knowledge and techniques needed to enable them to use and apply mathematical techniques for the evaluation, analysis, modelling and solution of realistic engineering problems. Application of these data sets has to include their interpretation both to and from the mathematical language.

IEP408 Integrated Engineering Project

This module's learning objective is to provide the practical and professional skills to develop practical professional engineering skills required for conceiving, designing, implementing, and operating engineering solutions. The project work involves 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 encourages 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.

EDP403 Engineering Design and Practice

It is an aggressive race to earn the world's tallest building title continues, while at the same time, cities are constructing higher buildings in greater numbers in cities as diverse as Shanghai, Shenzhen, Hong Kong, Dubai, Riyadh, Mumbai, London, to name only a few. The Marina Bay Sands Hotel is one of the most recognisable buildings in Singapore, and the three-column building is connected at the roof by the largest rooftop infinity pool. It is the most dominating symbol of the city and a human-made marvel that defies gravity by reaching to the clouds. It embodies unrelenting human aspirations to build even higher.

Singapore is a small country. It is essential to expand horizontally to safeguard against their reaching an eventual breaking point; the tall building as a building type is a possible solution by way of conquering vertical space through agglomeration densification. Development of tall building, to spectacular long suspension bridges, to very large floating structures, these structures must withstand both the forces of nature and the forces humankind has intended for them. The analytical tools that engineers use to create these structures are deceivingly simple, and it is part of this module's intent to explain things in a clear, straightforward manner.

Students work in teams to engineer practical solutions to problems, including performing surveying that is incidental to the practice of engineering and reviewing construction or other design products for monitoring compliance with drawings and specifications related to engineered works. Students are expecting to use software to support project planning, communication and analysis. The module also focuses on developing practical professional engineering skills required for conceiving, designing, implementing and operating engineering solutions.

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MM405 Mechanics and Materials

This module provides an introduction to the mechanics of solids with applications to science and engineering. It focuses on three essential features of all mechanics analyses, including the geometry of the motion and deformation of the structure and conditions of geometric fit; The forces on and within structures and assemblages; and The structural system's physical aspects (including material properties) qualify relations between the forces and motions/deformation.

AM406 Applied Mechanics

The Applied Mechanics module has been designed to provide basic knowledge of engineering mechanics. This knowledge plays an important role in many diverse engineering applications in the modern world, such as the design of cars, structures, airplanes, and various types of machines. Students will be guided to solve engineering problems using these mechanics principles.

FM407 Fluid Mechanics

The module aims to provide students with the knowledge and understanding of fluid mechanics to carry our professional engineering activities in the field of fluid. Students will learn the know how on develop an appreciation for the properties of Newtonian fluids**,** analytical solutions to a variety of simplified problems, the dynamics of fluid flows and the governing non-dimensional parameters and apply concepts of mass, momentum and energy conservation to flows

EEP404 Electronics and Electrical Principles

The modern world relies on electrical and electronic devices – from mobile telephones to jet aeroplanes; these devices have had an enormous impact on the way we live today. Without early engineers such as Faraday and Lenz, who studied the then-new Concept of electricity, many of the inventions we now take for granted would not have been developed.

The module starts by developing and extending learners' understanding of fundamental electrical and electronic principles by analysing simple direct current (DC) circuits. Students are then taken through the various properties and parameters associated with capacitance and inductance before considering the Application of single-phase alternating current (AC) theory.