

Business and Advanced Technology Centre



INTRODUCTION

Petroleum production facilities, refineries, chemical and petrochemical complexes are major processing plants in the oil and gas industry. Designing and operating these processing plants require not only experience but also comprehensive understanding of the various stages of plant lifecycle. Plant lifecycle begins from *feasibility study, engineering design, fabrication, construction, installation, commissioning, operation and maintenance*. Each stage of the plant lifecycle activities require knowledge and experience of the industry's stringent standard practice and codes.

Executive Diploma in Plant Technology is a study of the engineering knowledge and industry practice that are required at all stage of plant lifecycle. This program is designed to produce quality personnel to meet the industry requirements.

WHO SHOULD ATTEND THIS PROGRAM?

- Plant operators and maintenance personnel
- Technical personnel who are involved in engineering design, fabrication, construction, installation, commissioning, or project management
- Diploma holder or higher in the same field

OUTCOME OF PROGRAM

- Be able to gain employment in any stage of plant life cycle
- Be able to execute and supervise engineering projects either in engineering design, fabrication or commissioning
- Be able to manage plant operation and maintenance effectively
- Pursue their career as designer in engineering consultants

ENTRY REQUIREMENT

- Min. diploma in any engineering fields or
- Draftsman, fabricators supervisor, plant operator or plant technician with min 5 years experience in relevant discipline

CLASSES

ONE weekend in a month class

LOCATION

Kajang

TUITION FEE STRUCTURE

Application Fee	RM	100
Registration Fee*	RM	3 000
Modules Fee	RM	13 900
Project Fee	RM	1 000
Total	RM	18 000

*Deposit RM500 if mode of payment is EPF or Loan

OCTAGON
PETROLEUM TECHNOLOGY

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BATC
Business & Advanced
Technology Centre

Executive Diploma in Plant Technology (Mechanical)

WHY UTM EXECUTIVE DIPLOMA PROGRAMME

- **Prestigious University Diploma**—Executive Diploma awarded by UTM
- **Flexibility**—Modular based. Flexi time and location
- **Course Duration**— 13 months to 36 months
- **Experienced trainers and lecturers** — Combination of UTM lecturers, experienced professional, expatriates and specialist
- **No Exams**— No need of memorization
- **100% Assignment Based Assessment**—Course is assessed through Post Module Assessment and Project
- **Experienced Based Learning**— Experience as prerequisite
- **Comprehensive study materials**—lecture notes etc.
- **Executive Environment**—Executive lecture room with audio visual aid
- **Financial Assistance**—Study loans, bank loans and EPF withdrawal
- **New Academic Pathway**— Bachelor, Masters and EngD
- **Cost Saving** — No extra tuition fee for repeated module
- **Industry Specific Syllabus**—Focus on industry knowledge and practice.

12 MODULES

CORE MODULES

- Petroleum Engineering
- Plant Layout Development and 3D Application
- Asset Management Integrity, HSE and Economics
- Project Planning, Management and Control
- Quality Management
- Information System Strategy

TECHNICAL MODULES

- Mechanical Static I
- Mechanical Static II
- Mechanical Rotating and Turbo-Machinery I
- Mechanical Rotating and Turbo-Machinery I
- Piping and Instrument Diagram
- Piping Material Control and Procurement

Exec. Diploma in Plant Technology Area Specializations:

- (Piping & Plant Layout)
- (Process)
- (Instrumentation & Control)
- (Electrical)
- (Offshore Structure)
- (Mechanical)

Executive Diploma in Plant Technology (Mechanical)



SYLLABUS

Candidates must take six (6) core modules and six (6) technical modules and undertake a major project submitted in the form of a dissertation

1.0 CORE MODULES

Module 1: Petroleum Engineering

This module is an introduction and orientation of the overall plant engineering activities focusing on the petroleum industry beginning from *exploration, appraisal, development, production, facilities operation and abandonment*. In addition to covering the different oil processing facilities, it also covers the different stages of project development beginning from engineering, fabrication, construction, installation, commissioning to operation and maintenance. The understanding of the overall picture of petroleum engineering activities is important to help technical personnel to play out their role in each stage of the plant lifecycle.

Module 2: Project Planning, Management and Control

Understanding of project planning, management and control is very crucial to ensure that; project is delivered on time, within budget and meeting the required quality. Competent project managers need to apply the principles of project planning, management and control and drive the project team to execute the project. The course is intended to provide the knowledge, understanding and the tools required for the successful and effective project planning, management and control.

Module 3: Quality Management

Quality is every employee's responsibility. Therefore, every person within an organization needs to understand and be able to apply basic quality concepts to their daily work activities and interactions, both internal and external. This module is designed to introduce the quality concepts and tools, the fundamental quality practices and principles to employees new to the quality and to refresh the skills of those with some previous background in quality. It is designed for organizations dedicated to improving and maintaining the highest level of quality excellence from the ground up. The course is effective for employee training, orientation programs or reinforcing common quality competencies throughout your organization. It also satisfies Section 6.2 resource management requirements for the new ISO 9001:2000 standard which covers *competence, awareness and training*.

Module 4: Plant Layout Development and 3D Application

This module introduces the students the sequence of Plant Layout Development and Optimization. It includes the general process involved in developing a plant layout. It also introduces the process of optimizing the plant space utilization required by all engineering disciplines.

Module 5: Asset Management Integrity, HSE and Economics

This module covers the study of economic justification before executing any activities relating to the different stages of the processing plant resource lifecycle. This module begins by describing the overall processing plant resource lifecycle. It also covers the description of work scopes of all the engineering disciplines. It also looks at the HSE requirements of a project and cost estimation of project. Finally, it reviews the preparation of production forecast, the cash flow of project; and project economic criteria and approval.

2.0 ELECTIVE MODULES

Module : Information System Strategy

Module : Creativity and Innovation Strategy

Module : Business Strategic Management

Module : Financial Analysis and Control System

3.0 TECHNICALS MODULES

Module 7 and 8 : Mechanical Rotating and Turbo Machinery I and II

In this modules, the students are introduced to the preparation of the rotating and turbo-machinery equipment design. This would include among others various types of pumps, compressors, steam and gas turbine, diesel and gas engine. It will also include special equipments such as centrifuge, extruder and special package equipment where it involved rotating machinery. The students will also learn how equipment layout is being established, and how to estimate the sizing for any new pump or other rotating machinery to be installed. This will help the plant management to better forecast on any other associated items such as power consumption as well as performance and cost. For any retrofit works, student will be taught on how to handle any machinery for upgrading and to evaluate the existing equipment for potential upgrading or otherwise. It also give them the exposure to the application of codes and industry standards in the design.

Module 9 and 10: Mechanical Static and Package Equipment I and II

In this module, the students are introduced to the preparation of the static equipment design which includes among others; pressure vessel, heat exchanger, storage tank, and general package equipment. For any retrofit works, student will be taught on how to handle any machinery for upgrading and to evaluate the existing equipment for potential upgrading or otherwise. It also gives them the exposure to the application of codes and industry standards in engineering design.

Module 11: Piping Material Control and Procurement

In this module, the students are introduced to the preparation of the bill of material. It also gives them the exposure of the procurement standard practices starting from the preparing of the material specification, purchasing, expediting, inspecting and controlling material at site for piping fabrication and construction. Finally, the students are taught the final material documentation requirement. This course is intended to provide the knowledge and understanding of the physical aspects of piping material in processing plants.

Module 12: Piping and Instrument Diagram

In this module, the students are introduced to Piping and Instrument Diagram. Piping and instrument diagram (P&ID) preparation is the core process design activity. P&IDs show the engineering details of the equipment, instruments, piping, valves and fittings for the intended process of the plant. This module is introduced to enable the students to prepare (P&ID) based on the process flow diagram, process safeguarding/philosophy diagram and other requirements. The student will be introduced to the systematic P&IDs preparation including the incorporation of multidiscipline technical input such as instrument, electrical, mechanical etc. Line list preparation and technique will also be exposed to the student in this module.

For Registration and Enquiries. **APPLY NOW**

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