

# Business and Advanced Technology Centre



## Executive Diploma in Plant Technology (Offshore Structure)

### 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.

### 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
<b>Total</b>	<b>RM</b>	<b>18 000</b>

\*Deposit RM500 if payment via EPF or Loan

### 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

- Basic Structural Engineering
- Marine Environmental, Seismic and Dynamic Loads
- Structural Materials and Fabrication
- Structural Deliverable Management
- Offshore Structural Analysis and Design 1
- Offshore Structural Analysis and Design 2

#### Exec. Diploma in Plant Technology Area Specializations:

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

**OCTAGON**  
PETROLEUM TECHNOLOGY

Octagon Petroleum Technology Sdn Bhd.  
H-32A-1B, Jalan Saujana 2/D  
Seksyen 2, Taman Prima Saujana  
43000 Kajang, Selangor Darul Ehsan

Tel: 603 87330951 Fax: 603 87370951  
Website: www.octagon-petroleum.com

## Executive Diploma in Plant Technology (Offshore Structure)



### 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: Basic Structural Engineering

In this module, the students are introduced to basic structural engineering. Students will review basic vector mechanical and mechanics of materials. Students will be exposed to stiffness matrix for structural analysis. In this module, students will also be introduced to the whole range of offshore platforms, both fixed and floating structures, main criteria that govern the platforms type, unique characteristic of each type.

##### Module 8: Marine Environment, Seismic and Dynamic Loads

This module exposes the students to the types of marine environment loads such as wind, wave and current. Students will be exposed to samples of metocean data for offshore fields in South East Asia region. Students will also be introduced to seismic loads and wave dynamic load. Students will be exposed to some standards or codes requirements related to environmental, seismic and dynamic loads.

##### Module 9: Structural Material and Fabrication

In this module, the students are introduced to specifications of typical structural materials such as steels, concrete, timber and aluminum. 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 structural fabrication and construction. This module also covers the process of structural assembling of the different structural components to build a complete offshore platform. Fabrication involves activities of joining together steel tubes and other structural components by qualified field personnel. This module also introduces the structural engineering fabrication and structural engineering fabrication supervision to ensure the integrity of the structural system.

##### Module 10: Structural Deliverables Management

This module exposes the students to the different roles and responsibilities of the individual structural design engineering team and their activities, through a correct understanding of the team work flow, designers can have an effective project design control to ensure effective structural engineering execution as per contract work scope. This can be achieved through a process that includes clarifying the project scope of work, schedule, manpower planning and preparation of specifications as per project (client's) compliances. This module also focuses on the process of managing structural deliverables. It will cover managing structural documents, drawings and 3D modeling production as per project requirements.

##### Module 11: Offshore Structural Analyses and Design 1

The module focuses on the introduction to offshore local analysis and design. Students will be introduced to concept of local or miscellaneous analysis and design for a fixed platform. The analyses and design includes pad-eye design, pile driving analysis, vortex shedding analysis, launch cradle details, equipment/piping support design, wave slamming check, pile stick-up check, pile lifting check and conductor hang-off analysis. Students will also be introduced with local analysis and design for secondary structures such as boatlanding and riser guard.

##### Module 12: Offshore Structural Analyses and Design 2

This module focuses on the introduction to offshore structural global analysis. Students will be introduced to concept of each of the global analyses required to design a fixed offshore platform in Malaysia. The analyses are related to specific phase of the platform, namely pre-service and in-service. The pre-service analyses include loadout, lifting, transportation, launch, floatation, upending and on-bottom analyses. The in-service analyses cover in-place, dynamic and fatigue analyses. The offshore structures are designed for loads due to gravity, environment and dynamic and boundary conditions for each phase.

**For Registration and Enquiries. APPLY NOW**

Email: [admin@octagon-petroleum.com](mailto:admin@octagon-petroleum.com)

Email: [mfaizalma@octagon-petroleum.com](mailto:mfaizalma@octagon-petroleum.com)