



INSTEP's Innovative Panel Operator Certification Powers Excellence

Institute Teknologi Petroleum PETRONAS (INSTEP)

Best Competencies and Skill Development

November 2024



Company Background



Company-at-a-Glance	
Headquarters	Batu Rakit, Kuala Terengganu, Terengganu
Year Founded	1981
Revenue	RM 203,088,399
Employees	178
Global Scale (Regions that you operate in or provide services to)	50 countries as attached below. Major clients are from: China, India, Italy, Brazil, Spain, Belgium, Turkmenistan, Iraq, Brunei, Canada, Egypt, Dubai, Australia, Japan, Singapore, Papua New Guinea, Thailand, Indonesia
Customers/Output, etc. (Key customers and services offered)	Key Customers: 1. PETRONAS fraternity <ul style="list-style-type: none"> PETRONAS staff 2. Industry <ul style="list-style-type: none"> PACs in Malaysia Contractors/manpower serving PETRONAS & PACs (in or outside Malaysia) 3. Stakeholder

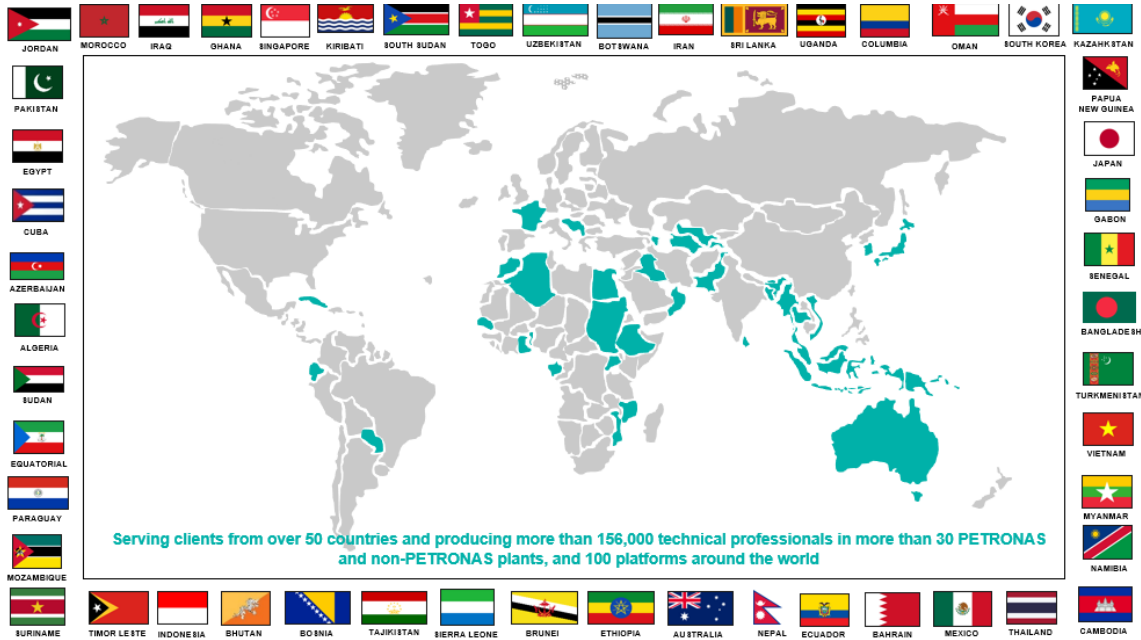


	<ul style="list-style-type: none"> • As per government requirements & education sectors • Host Government from PETRONAS International Operations <p>Services Offered:</p> <ol style="list-style-type: none"> 1. Executive and Non-Executive Technical Solutions <ul style="list-style-type: none"> • Short term programme to enhance and upskill technical competencies for engineers and technicians 2. Onboarding Solutions <ul style="list-style-type: none"> • Long-term programme to produce job-ready technicians & operators equipped with knowledge and skills required competencies by the industry. 3. Technical Certification Solutions <ul style="list-style-type: none"> • Certify competency of technical workforce based on statutory bodies, professional bodies or company own standard. 4. Health, Safety & Environment Sustainability Solutions <p>Provide wide ranged HSE and sustainability technical training that supports PETRONAS and industry sustainability agenda.</p>
Industry	<ul style="list-style-type: none"> • Energy • Learning Institution <p>INSTEP offers experiential learning to enhance technical proficiency, aligned with the evolving demands of the energy sector workforce. Our commitment involves providing a comprehensive learning experience, featuring state-of-the-art facilities and industry-seasoned instructors. Our learning facilities complemented with theoretical classes and practical workshops, including the Upstream Downstream Training Plant (UDTP) simulating real plant scenarios, providing a safe environment for experiential learning, fostering technological innovation in digitalisation, automation and sustainability.</p>
Stock Symbol	N/A



Website

[INSTEP - 41 years of Going Beyond](#)



Budget and Timeframe

Budget and Timeframe	
Overall budget	N/A
Number of (HR, Learning, Talent) employees involved with the implementation?	Less than 10
Number of Operations or Subject Matter Expert employees involved with the implementation?	More than 30 SME from operations, maintenance and safety background
Number of contractors involved with implementation	N/A
Timeframe to implement	Continuous
Start date of the program	2013



Fit to the Needs

Overview

In the context of Malaysia, a study revealed that 60% of employers might struggle to retain their top talent, with 48% of professionals expecting salary increments due to the rising cost of living. This situation is particularly acute in industries requiring technical and engineering qualifications, where there is a significant talent shortage.

POTCP or “Panel Operator Training & Certification Program” is designed to provide and equip selected plant process technician with essential technical knowledge and skills to ensure that they are competent to perform panel operation confidently and safely. POTCP is an integrated program consisting of classroom training, On Job Training (OJT) and extensive assessment. Overall, the POTCP training programme consists of five (5) main modules. These modules cover knowledge of:

- POTCP 01: Distributed Control System
- POTCP 02: Process Control
- POTCP 03: Process Troubleshooting
- POTCP 04: Plant Operations Practices
- POTCP 05: Process Safety Practices

These modules are made compulsory within PETRONAS to prepare the selected staff to be a competent Panel Operator. Once the candidate covers all five (5) modules as well as the completion Operation Training Simulation (OTS), the candidate is ready to be assessed to be a full fledge Panel Operator. Currently, the above modules are embedded with sustainability agenda as part of the training curriculum.

This program is part of Panelman Competency Learning & Development (L&D) Framework Manual, 2023.

Design of the Program

The Panel Operator Training & Certification Program (POTCP) program offered by INSTEP (Institut Teknologi Petroleum PETRONAS) is designed to achieve the following objectives:

- To expedite competency development and certification of Panel Operators
- To ensure availability of consistent and structured training program



- To achieve consistent and standardized assessment methodology
- To adequately cover on basic principle operation best practices and emphasis on Health, Safety and Environment Management system (HSEMS) and process safety

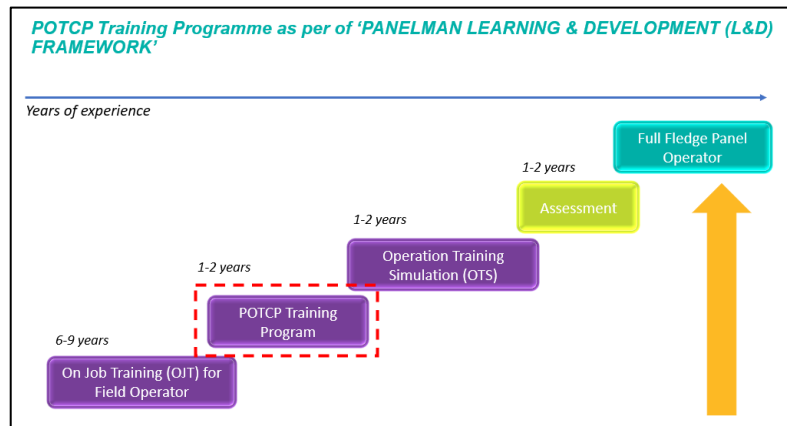


Figure 1: POTCP Programme Design part of Panelman Learning & Development (L&D) Framework

As for now, the prerequisites for enrolling in the POTCP courses offered by INSTEP (Institut Teknologi Petroleum PETRONAS) typically include requirements as below:

- Completion certain level (NT3) of On Job Training (OJT) for field operator
- The candidate has shown talent and interest in managing plant operation related activities



Delivery of the Program

The sessions are delivered through the following modes:

- Experiential/Interactive Learning e.g Distributed Control System (DCS) and loop tuning at Upstream Downstream Training Plant (UDTP)
- Collaborative Learning e.g scenario-based case study
- Lecture based Learning e.g face to face classroom session

The mode of delivery has been designed to meet adult learning with 70:20:10 approach.

It is emphasized that the programme delivery maximizes the 70 portion to ensure the learning effectiveness is achieved. At the end of the programme, “Matrix that Matter (MTM)” is used for overall programme feedback e.g trainer rating, course content rating and training facilities. These inputs will be monitored to ensure the programme meets its objectives. To ensure continuous improvements are in place, all modules are reviewed by Subject Matter Expert (SME) every 3 years.

Measurable Benefits

There are huge impact on the operational team as all the panel will be certified and assessed by internal subject matter experts (SME) in a standardized manner. The main objective is ensuring not only Panel Operator is competent but also creating a safe environment from Plant Operations perspective.



The impacts can be explained through the following areas:

- Panelman Mindset: Embedment of Process Safety Management and Business Sense Mindset
- Panelman Core Knowledge: Mastering condition in the Field, Conversant with DCS, Mastering the Process Unit/Area/Module/Platform
- Panelman Practical: Supervised On Job Training, Respond to upset via repeated simulations

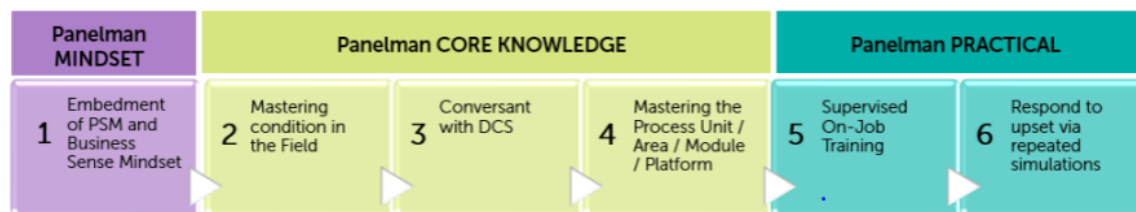


Figure 2: Panelman Framework

Under Panelman MINDSET, candidate shall be upskilled on general knowledge of Process Safety Management (PSM) and equipped with basic understanding on OPU / Site Business where requirement and evidence are illustrated as below:

- Understand/aware of the general PSM elements.
- Understand the impact/consequence of Operations to the OPU / Site revenue and business impact.

Under Panelman CORE KNOWLEDGE, candidate shall acquire sufficient knowledge on the actual condition in the field, conversant with DCS operations and master on OPU/Asset /Process Unit/Module/Area where requirement and evidence are illustrated as below:

- Explain the actual operations at site and its relationship with DCS panel
- Explain the DCS / SIS architecture
- Maneuver the DCS to view relevant process unit data and conditions
- Excerpt critical data from DCS for analysis
- Understand requirement of bypassing the interlock
- Explain the alarm, Safe Operating Limit (SOL) and process controls of the PU(s) / module(s) / area.
- Explain what to do when SOL is breached.
- Explain the normal and abnormal OP of the PU(s) / module(s) / area.



- ix. Explain the troubleshooting steps for each PU(s) / module(s) / area.

For Panelman PRACTICAL, candidate shall undergo On-Job-Training (OJT) under supervision of experienced Panelman or higher and repeated simulation on responding to process upset where requirement and evidence are illustrated as below:

- i. Operate DCS with minimal supervision for normal operations.
- ii. Operate DCS with minimal supervision for abnormal operations.
- iii. Explain and respond to upset (e.g. abnormalities and emergencies)

These three (3) pillars were discussed and identified to ensure Panel Operators can be trained in holistic manner.

Overall

With POTCP as part of the Panelman Learning & Development (L&D) Framework, the following objectives are achieved in systematic manner:

- To expedite competency development and certification of Panel Operators
- To ensure availability of consistent and structured training program
- To achieve consistent and standardized assessment methodology
- To adequately cover on basic principle operation best practices and emphasis on Health, Safety and Environment Management system (HSEMS) and process safety

Up to 2023, INSTEP has trained more than 6000 PETRONAS panel operators and there is a continuous demand for this training on a yearly basis.



Brandon Hall Group™

EXCELLENCE AWARDS™ 2024

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