

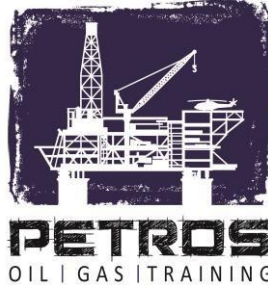


**Kampus  
Merdeka**  
INDONESIA JAYA

**MSIB**  
magang dan studi independen bersertifikat

Certificate No : 2023-PTR-EFDN-MSIB4-G2-16

Date : June 30<sup>th</sup>, 2023



## CERTIFICATE OF ACCOMPLISHMENT

This certificate granted to  
**RAHARJA GUMILAR**  
MSIB ID : 5674347

For successfully completing the training (210 hours)

### EQUIPMENT FOUNDATION DESIGN FOR OIL GAS/INDUSTRIAL PLANT

Held by **PETROS Oil Gas Training &**  
**Ministry of Education and Culture Research and Technology of Republic of Indonesia**  
at **Kampus Merdeka Studi Independen Bersertifikat** Program

And meet all requirements with score:

**83.00**

of 100 points

**Petros Oil Gas Training**  
(PT. INDONESIA LEBIH ANDAL PROFESIONAL)

**Heru Prasadia, ST**  
Director



Certificate Validation  
Valid Through  
30/06/2025

# EQUIPMENT FOUNDATION DESIGN FOR OIL GAS/INDUSTRIAL PLANT

## SUBJECTS :

### FOUNDATION THEORY

- Stability Check
  - Overturning
  - Sliding
  - Upending
  - Soil bearing
- Strength Check
  - One Way Shear
  - Two Way Shear
- Pier Reinforcement Bar
- Slab Reinforcement Bar

### EQUIPMENT FOUNDATION COMPUTER MODELLING (AFES) :

- Define Project
- Input Parameter
  - Allowable Stress And Unit Weight Of Material
  - Concrete Cover
  - Safety Factor
  - Soil Bearing Capacity
  - Single Pile Capacity
- Input Node & Dimension
- Input Reinforcement Bar
- Define Loading
  - Dead Load
  - Equipment Load
  - Wind Load
  - Seismic Load
- Define Unfactored Load Combination
- Define Factored Load Combination
- Setting Anchor
- Pile Arrangement

### ANALYSIS RESULT

- Foundation & Pile Arrangement Illustration
- Pile Arrangement
- Safety Factor Of Pile
- Check Of Pile Capacity
- Shear Strength Check
- Reinforcement Design

### FINAL PROJECT :

- Foundation Design for HP Amonia Scruber 124-D (Vertical Vessel)
- Foundation Design for Production Separator 31-MDB-101 (Horizontal Vessel)
- Foundation Design for Methanol Distillation Column 6160C1