DEFINE™
MANAGEMENT CONSULTANCY & TRAINING

**Training Title**
**CRUDE & VACUUM PROCESS TECHNOLOGY**

**Training Duration**
**5 days**

**Training Venue and Dates**

| | | | | | |
|---|---|---|---|---|---|
| **LM143** | Crude & Vacuum Process Technology | **5** | **13-17 February, 2023** | **$4,500** | **Dubai, UAE** |

**In any of the 5 star hotels. The exact venue will be informed once finalized.**

**Training Fees**

- US$4,500 per participant for Public Training includes Materials/Handouts, tea/coffee breaks, refreshments & Buffet Lunch.

**Training Certificate**

Define Management Consultancy & Training Certificate of course completion will be issued to all attendees.

## TRAINING DESCRIPTION

Crude distillation is the first process in the refining sequence and is vital to the profitability of refinery operations. This importance has grown with the advent of cleaner fuels. This program has been developed to provide an in-depth yet practical review of the art and science of crude distillation. Consistently maintaining smooth operation, capacity and product quality are critically important goals that can be difficult to achieve. Many complex process, equipment, and reliability issues have to be balanced to optimize run-length, capacity, and quality. With the many variables involved, constant adjustments are required.

## TRAINING OBJECTIVES

The program's content is both comprehensive and wide-ranging. Sessions begin with a discussion of fundamentals, including process objectives, crude oil characterization, products, process flow sequences, heat integration, desalting, and major equipment design. Attendees will gain an understanding of how process requirements, equipment operation, and economic objectives interact. Once the fundamentals are established, the session moves into the topics of operation, control, troubleshooting, and revamps

## WHO SHOULD ATTEND?

Program participants will have ample opportunity to obtain a broad working knowledge of crude unit operations, to gain insight into current technology and trends, and to interact with others working in this area. The program is ideal for personnel involved in refinery process



P.O BOX 45304
ABU DHABI, U.A.E
T +971 2 6264455
F +971 2 6275344
www.definetraining.com

engineering, plant operations, troubleshooting, and technical services. Process engineers from design and construction companies as well as those providing services to the petroleum refining industry should also find this program beneficial.

**TRAINING METHODOLOGY:**

A highly interactive combination of lectures and discussion sessions will be managed to maximize the amount and quality of information and knowledge transfer. The sessions will start by raising the most relevant questions, and motivate everybody find the right answers. You will also be encouraged to raise your own questions and to share in the development of the right answers using your own analysis and experiences. Tests of multiple-choice type will be made available on daily basis to examine the effectiveness of delivering the course.
Very useful Course Materials will be given.

- 30% Lectures
- 30% Workshops and work presentation
- 20% Group Work& Practical Exercises
- 20% Videos& General Discussions

**DAILY OUTLINE**

**Day -1**

**1. Introduction and Process Objectives**

• Feed and Products, Importance to Refinery Operations, General Process Sequences, Major Equipment, Heat Integration

**2. Crude Properties**

• Crude Types, Crude Oil Characterization, Heavy Oil Fractions

**3. Crude Unit Products**

• Lights Ends

• Naphthas

• Kerosene and Jet Fuel

• Diesel

• Gas Oils

• Residues

**Day - 2**

**4 . Process Flow Sequences**

• Topping and Simple Units

- Conventional Atmospheric-Vacuum
- Preflash Columns and Drums
- Gas Oil Columns
- Vacuum Columns
- Diesel Recovery Options
  - Naphtha-Kerosene Recovery Options

**5. Heat Integration and Exchangers**

- Heat Exchanger Networks
- Heat Train Limitations
- Cold Versus Hot Train Duties
- Split Trains
- Pinch Analysis
- Crude Types
- Exchanger Design

**Day - 3**

**6. Desalting**

- Corrosion, Fouling, Contaminants
- Single Versus Two-Stage
- Operation
- Salt Content and Removal Efficiency

**7. Fired Heaters**

- Heater Types
- Operating Limits
- Heat Flux
- Steam Injection

**8. Atmospheric Distillation**

- Process
- Equipment
- Overhead Systems



P.O BOX 45304
ABU DHABI, U.A.E
T +971 2 6264455
F +971 2 6275344
www.definetraining.com

- Metallurgy

**Day - 4**

**9. Vacuum Distillation**

- Process
- Equipment
- Vacuum Systems
- Metallurgy

**10. Control, Monitoring, Troubleshooting**

- Daily Monitoring
- Control Options
- Troubleshooting Common Problems

- Poor Separations
- Heat Removal and Heat Input
- Entrainment – Black Products
- Foaming
- Hydraulics

**Day - 5**

**11. Revamps**

- Revamp Strategies
- Defining Unit Performance
- Discovering Opportunities
- Future Directions: Energy Efficiency and Climate Change

**12. Current Topics**

- Light Crudes and Tight Oils
- Diesel Recovery
- Condensate Splitting



P.O BOX 45304
ABU DHABI, U.A.E
T +971 2 6264455
F +971 2 6275344
www.definetraining.com

**NOTE:**

**<u>Pre & Post Tests will be conducted</u>**

**<u>Case Studies, Group Exercises, Group Discussions, Last Day Review & Assessments will be carried out.</u>**

**……**

P.O BOX 45304
ABU DHABI, U.A.E
T +971 2 6264455
F +971 2 6275344
www.definetraining.com