DISTILLATION & UNIT CONTROL OPERATION

COURSE TITLE

DISTILLATION & UNIT CONTROL OPERATION

COURSE DATE/ VENUE

09 – 13 November 2020

London, UK

COURSE REFERENCE

PCE256

COURSE DURATION

05 Days

DISCIPLINE

Process and Chemical Engineering

COURSE INTRODUCTION

Distillation is still the most widely used means of separating chemical species in the petroleum and chemical industries and is the first unit operation in an oil refinery. This course covers the key areas of assessing the operation of the internals through to their eventual installation but with the emphasis placed on design, operation, troubleshooting, and control. Various aspects relating to the initial design of column internals are covered, including simulation packages and VLE. Current internals are reviewed including critical design aspects of trays, packing and auxiliary equipment. Distillation column control is an essential ingredient in cost-effective operations, safety, and environmental management.

COURSE OBJECTIVE

All the essentials elements in the design, analysis, and troubleshooting of distillation processes will be covered in this course. It will provide the attendees with the tools to utilize distillation theory and apply it directly to real and practical problems. All necessary concepts for a full understanding of distillation problems will be addressed starting with

thermodynamics and VLE, continuing with process design and issues and ending with hardware consideration.

The course will also address distillation column operations and troubleshooting, and will provide the attendees with guidelines for the selection of selection of hardware. Emphasis in the latter part of the course will be on distillation control and modeling using flowsheet process simulators like HYSYS.

COURSE AUDIENCE

Professionals dealing with all aspects of the Distillation Unit. All engineers involved in the operation and design of Distillation facilities. Any technical personnel wishing to gain an insight into the practical aspects of distillation. Those who are experienced in other fields and seek a review of the fundamentals of Distillation.

COURSE CONTENT

DAY 1:

- Distillation Principles
    - Phase Equilibria
    - Stage Concepts
- Column Types and Internals
    - Continuous/Batch Operation
    - Tray and Packing Columns
- Critical Design Aspects
    - Capacity and efficiency Improvement
    - Models for Predicting Efficiencies
    - Variables Affecting Separation

DAY 2:

- Troubleshooting
    - Operating Regions
    - Operational Difficulties
    - Process Startup/Shutdown

DAY 3:

- Special Applications of Distillation
    - Crude and Vacuum Distillation
    - Extractive/Reactive distillation
    - Environmental Separations

DAY 4:

- Distillation Control & Instrumentation
    - Developing Dynamic Models
    - Cause-and-Effect Relationships
    - Control Configurations
    - Instrumentation

DAY 5:

- Case Studies
    - Simulation and Control of Multi -component Fractionators
    - Troubleshooting Problems

COURSE CERTIFICATE

TRAINIT ACADEMY will award an internationally recognized certificate(s) for each delegate on completion of training.

COURSE FEES

$6,150 per Delegate. This rate includes participant's manual, Hand-Outs, buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

COURSE METHODOLOGY

The training course will be highly participatory and the course leader will present, guide and facilitate learning, using a range of methods including formal presentation, discussions, sector-specific case studies and exercises. Above all, the course leader will make extensive use of real-life case examples in which he has been personally involved.

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.

- 30% Lectures
- 30% Workshops and work presentation
- 20% Case studies & Practical Exercises
- 10% Role Play
- 10% Videos, Software or Simulators (as applicable) & General Discussions