



Refinery Units (Operations and Engineering) - Basics

Course Introduction:

Refinery units are the backbone of the petroleum industry, transforming crude oil into valuable products such as gasoline, diesel, jet fuel, and various petrochemicals. Understanding the basic operations and engineering principles behind these units is essential for professionals in the field. This 5-day theoretical training course, "Refinery Units (Operations and Engineering) - Basics," is designed to provide participants with a foundational understanding of the key processes, equipment, and engineering concepts involved in refinery operations.

Throughout the course, participants will explore the various types of refinery units, their functions, and the interrelationships between them. The training will cover essential topics such as distillation, cracking, reforming, and treating processes, along with the engineering principles that govern these operations. By examining industry practices and case studies, attendees will gain valuable insights into how refinery units operate, the challenges they face, and the strategies used to optimize performance and ensure safety.

Course Objectives:

By the end of the program, participants will be able to:

- Understand the fundamental concepts of refinery operations and engineering.
- Learn about the different types of refinery units and their specific functions.
- Explore key processes such as distillation, cracking, reforming, and treating.
- Analyze the interrelationships between various refinery units.
- Familiarize participants with industry practices and safety considerations in refinery operations.

Who Should Attend?

This course is intended for Engineers and technicians working in the petroleum refining industry, Operations personnel involved in refinery management, Safety and compliance officers in industrial settings and Project managers overseeing refinery projects.

Course Outline:

Day 1: Introduction to Refinery Operations

- Overview of the petroleum refining industry and its importance
- Key definitions and concepts in refinery operations
- Types of crude oil and their characteristics

Day 2: Distillation Processes

- Fundamentals of distillation: principles and equipment
- Types of distillation units: atmospheric and vacuum distillation
- Case studies on distillation efficiency and optimization

Day 3: Cracking Processes

- Introduction to cracking: purpose and mechanisms
- Types of cracking: thermal cracking, catalytic cracking, and hydrocracking
- Engineering considerations in cracking unit design and operation

Day 4: Reforming and Treatment Processes

- Overview of reforming processes: catalytic reforming and isomerization
- Importance of treatment processes: hydrotreating and desulfurization
- Equipment used in reforming and treatment units

Day 5: Integration and Safety in Refinery Operations

- Understanding the interrelationships between refinery units
- Best practices for ensuring safety in refinery operations
- Future trends and technological advancements in refinery engineering

Course Methodology:

A variety of methodologies will be used during the course that includes:

- (30%) Based on Case Studies
- (30%) Techniques
- (30%) Role Play
- (10%) Concepts
- Pre-test and Post-test
- Variety of Learning Methods
- Lectures
- Case Studies and Self Questionnaires
- Group Work

Course Fees:

To be advice as per course location. This rate includes participant's manual, Hands-Outs, buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

Course Certificate:

International Center for Training & Development (ICTD) will award an internationally recognized certificate(s) for each delegate on completion of training.

Course Timings:

Daily Course Timings:

08:00 - 08:20	Morning Coffee / Tea
08:20 - 10:00	First Session
10:00 - 10:20	Coffee / Tea / Snacks
10:20 - 12:20	Second Session
12:20 - 13:30	Lunch Break & Prayer Break
13:30 - 15:00	Last Session