# Refinery and Chemical Plant Basics Training Course for Business Leaders

25 – 29 January 2027
Dubai - Marriott Hotel Al Jaddaf, Dubai

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**Ref:** 624_31676 **Date:** 25 – 29 January 2027 **Location:** Dubai - Marriott Hotel Al Jaddaf, Dubai **Fees:** 4000 GBP

## Programme Summary

Refinery and chemical plant basics are the subject of this one-week training course for finance, commercial, legal and government managers without an engineering background, ending in a value map of one refinery and chemical site. Decisions on contracts, budgets and supply depend on how crude oil becomes fuels and chemicals, yet the process is often explained only in engineering terms. The programme follows a barrel from crude through separation, conversion and blending to chemical feedstocks, and links each step to cost, margin and risk. Mars Training Centre UK delivers this programme on refinery and chemical plant basics to mixed-organisation cohorts.

## The Business Case

Managers who deal with refiners and chemical producers sign contracts, review budgets and set policy on products they cannot picture. Gaps in process knowledge lead to weak questions and missed risks.

- Contract and Pricing Quality: Rises as product specifications and feedstock links are read correctly.
- Margin Understanding: Rises as crude cost, yields and product prices are tied to the refining margin.
- Risk Awareness: Rises as safety, environmental and supply risks are traced to specific units.

## Principles and Evidence Base

- Crack Spread: The price gap between crude and refined products frames the margin discussion in Sessions 1 and 4.
- Nelson Complexity Index: The measure of refinery conversion capability supports the comparison of site configurations in Session 3.
- ASTM Fuel Specifications: The recognised product quality standards guide the reading of specifications and blending in Session 2.
- Mass Balance: The principle that what enters a unit must leave it underlies the yield and feedstock tracing in Sessions 2 and 3.

## Intended Participants

- Finance managers who budget, cost and review refining and chemical operations.
- Commercial managers who buy crude, sell products or negotiate supply terms.
- Legal advisers who draft and review contracts, licences and disputes.
- Government officials who oversee energy projects and industry policy.

Typical sectors include oil and gas operators, chemical producers, energy ministries and banks.

## Learning Outcomes

1. Participants will be able to trace the path of crude oil through a refinery to its main products.
2. Participants will be able to interpret crude quality and product specifications in supply terms.
3. Participants will be able to compare refinery configurations by conversion capability and product mix.
4. Participants will be able to evaluate how crude cost, yields and prices shape refining margin.
5. Participants will be able to diagnose where chemical plants depend on refinery feedstocks.
6. Participants will be able to justify the questions they put to technical teams on risk, cost and contracts.

## Programme Structure

## Day 1: From Crude Oil to Fuels and Chemicals

What happens to a barrel of crude, and where does it earn or lose value?

- Crude to Products Flow Map
- Refinery Block Diagram Reading
- Crack Spread Margin Sketch
- Plain-Language Process Glossary
- Site Tour Question List

## Day 2: Separation, Conversion and Product Quality

How do distillation, cracking and treating create products that meet specifications?

- Distillation Cut Table
- Conversion Unit Yield Comparison
- Hydrotreating and Sulphur Removal Review
- ASTM Fuel Specification Reading Sheet
- Blending Recipe Exercise

## Day 3: Refinery Configurations and Chemical Plants

How do simple and complex sites differ, and where do petrochemicals fit?

- Nelson Complexity Index Comparison
- Mass Balance Tracing Sheet
- Naphtha and Ethane Feedstock Map
- Olefins and Aromatics Product Tree
- Integrated Site Layout Review

## Day 4: Economics, Contracts and Risk

What drives margin, and which clauses and risks matter to non-engineers?

- Crude Slate Cost Comparison
- Margin Driver Walk
- Supply Contract Clause Checklist
- Safety and Environmental Risk Register
- Outage and Supply Disruption Scenario

## Day 5: Applying the Tools to One Site

Do the process, quality, configuration and margin tools explain one refinery and chemical site?

- Applying the Session 1 Crude to Products Flow Map
- Testing the Session 2 Conversion Unit Yield Comparison
- Checking the Session 3 Feedstock Map
- Reviewing Risks with the Session 4 Risk Register
- Completing the Refinery and Chemical Site Value Map

## Methodology

The programme uses a case analysis method built on simplified site diagrams, anonymised crude and product price tables, sample supply clauses and incident summaries. Participants work in mixed finance, commercial and legal teams on one shared site, and receive written facilitator feedback on each exercise.

- Suggested activity: Tracing one barrel of crude through a site diagram to its products.
- Suggested activity: Estimating margin change when crude cost and product prices move.
- Suggested activity: Marking the risks in a sample supply clause.

## Capstone Output

Each participant completes a value map of one refinery and chemical site. It holds a flow diagram of crude to products, a feedstock map, a margin driver sheet, a clause and risk list, and questions for technical teams. The map is used at work to prepare reviews and negotiations.

## Frequently Asked Questions

### Is refinery and chemical plant basics training suitable for managers without an engineering background?

Yes. Refinery and chemical plant basics are taught with diagrams, plain language and cases, so the programme assumes business, legal or policy experience but no chemistry.

## Which standards and measures does refinery and chemical plant basics training draw on?

Refinery and chemical plant basics training draws on the crack spread, the Nelson Complexity Index, ASTM fuel specifications and mass balance to explain margin, configuration and product quality.

## How is the value map from refinery and chemical plant basics training used at work?

You use the refinery and chemical site value map to prepare contract reviews, budget questions and briefings.

## How does refinery and chemical plant basics differ from refinery operations management training?

Refinery and chemical plant basics gives non-engineers a picture of the process and economics, while refinery operations management training centres on running units and leading plant teams.