Training - Economic Framework of Refining

CER-EN-P | Face-to-face only | 5 days

This course provides a complete view of all the fundamental aspects and challenges of the economic framework in which the refining industry is evolving

Level

Knowledge

Public

Technical, operating and engineering personnel working in the refining industry, trading and commercial specialists, independent consultants, process licensors, catalyst manufacturers and refining subcontractors

Objectives

Attendees will be able to implement the following skills:

- Calculate product marginal value, refinery margins and process unit margins
- Simulate refinery operations and product blending
- Analyze the result of a linear programming model optimization
- Evaluate project profitability

Pedagogical & technical resources

- Case studies and exercises derived from present refinery situations
- Economic optimization using Excel
- Quiz

Assessment of achievements

- Trainees are assessed throughout the training through practical application phases and interactions with the trainer
- A final on-the-spot evaluation may also be carried out at the end of the course and/or at the end of each module using tests designed to verify the learners' understanding and assimilation of the knowledge linked to the training objectives

Prerequisites

No prerequisites are necessary to follow this course

Responsable

IFP Training instructors, with expertise in the field and trained in modern teaching methods adapted to the specific needs of learners from the professional world

Program

TECHNICAL OVERVIEW — 0.25 day

Brief technical presentation of the main refining units: distillation, conversion, blending, etc.
Refinery scheme evolution.

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OIL MARKETS & TRADING — 0.75 day

Oil supply and demand fundamentals and evolution.
Petroleum physical trading (spot, forward).
Crude oil and petroleum product pricing: benchmark, quality differential, etc.
Financial trading (futures) and hedging strategies for a refiner.

REFINING CONTEXT — 1 day

World petroleum product demand.
Refining supply: overcapacity, types and quantity.
Main challenges: deep conversion, new product specifications, petrochemical integration, environment, etc.
Projects and perspectives.

REFINING MARGINS & COSTS — 0.75 day

Refinery margins and costs: definitions and evolution worldwide.
Unit margins and intermediate product valuation.
Case studies: crude oil arbitrage, Fluid Catalytic Cracking (FCC) unit margin.

REFINERY BLENDING SIMULATION — 0.25 day

Case study: managing the blending operation of a refinery taking into account the economic and technical (product specifications, capacities, etc.) constraints.

OPTIMIZATION OF REFINING OPERATIONS - LINEAR PROGRAMMING — 1 day

Linear programming (LP) principles: linear equation, objective function, profit maximization or cost minimization, Simplex method, graphic interpretation, etc.
Analysis of the LP results: optimum properties, marginal costs, domain of validity of the results, etc.
Case study on Excel: explanation of a refinery model matrix (material balances, product specifications, utilities consumption, objective function, etc.); team work on the optimization of a cracking refinery and on the result analysis.
Principles of refining management: constraints, operational organization.
Monthly program to daily operations.

INVESTMENT PROFITABILITY STUDIES — 1 day

Value creation and capital cost, cash flows, discounting principle and inflation impact.
Standard global profitability analysis: cash flow schedule, economic criteria (net present value, internal rate of return, etc.).
Introduction to risk analysis.
Exercises on various investment profitability studies for refineries and petrochemical plants.

To French entities : IFP Training is referenced to DataDock ; you may contact your OPCO about potential funding.
Please contact our disabled persons referent to check the accessibility of this training program : referent.handicap@ifptraining.com

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