Training - Light Cuts Processing

REF1-EN-P | Face-to-face only | 5 days

This course provides a thorough knowledge of operation and refining processes involved in gasoline and diesel production

Level
Knowledge

Public
Engineers and supervisors involved in light and middle distillates processing units

Objectives
Attendees will be able to implement the following skills:

- Link processing units operation to various constraints set by product specifications
- Analyze operating parameters and their impacts
- Acquire the basics for operating processing units
- Know about the latest developments in these processes

Pedagogical & technical resources
Numerous exercises and case studies based on real industrial situations

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

PETROLEUM PRODUCTS — 0.25 day

Origin and characteristics of naphtha cuts.
Octane properties and hydrocarbon (HC) families. Quality requirements.
Gasoil and Diesel oil: cetane, cold flow and other properties.

CATALYTIC REFORMING — 1.25 days

Refinery octane pool: processes for octane improvement-gasoline sources.
Process basics: thermodynamics and kinetics of chemical reactions. Hydrogen production.
Role and types of catalysts - Activation, ageing, poisoning.

Industrial units: process flow scheme of SR and CCR, operating conditions, performances.
Operating variables (WABT, WHSV, H2/HC ratio, recycle gas composition, pressure).
Management of hydrogen production, impact of feed properties and operating conditions.
Shutdown, regeneration and startup.
Catalyst regeneration steps and control.

ISOMERIZATION OF LIGHT GASOLINES — 0.5 day

Integration in the gasoline production scheme. Isomerization reaction characteristics.
Different types of catalysts: properties, activation, poisons, operating conditions.
Industrial process: principle and specific constraints.
Downstream separation main types and impact of recycling.

HYDROREFINING PROCESSES — 2 days

Removal of impurities, hydrogenation of unsaturated compounds: chemical reactions characteristics.
Role and types of catalysts in relation with feeds, hydrogen consumption and required results.
Operating conditions and main variables (temperature, WHSV, H2/HC ratio, PPH2, etc.).
Catalyst loading map; cycle length optimization.
Main refining applications and specific operating features, example of gasolines and middle distillates desulfurization.

SWEETENING OF LIGHT CUTS — 0.25 day

Role of sweetening process, basic chemical reactions, nature and efficiency of the catalyst.
Main applications for LPG's, naphtha's and kerosene cuts.
Operating conditions: temperature, caustic concentration, mixing efficiency, air injection, etc.

SULFUR RECOVERY — 0.75 day

Refinery sulfur balance. Importance of sulfur recovery chain processes.
Amine scrubbing chemical reactions and operating parameters.
Industrial process and operating parameters as air/H2S ratio, steam production.
Claus chemical reactions.
Process control and impact on environment: causes for sulfur emission increase.
Tail gas treatments: process principles, operating conditions.

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