This course is available in face-to-face mode

Refining Processes & Manufacturing Flowsheet - Remote training

5 days **BRP-EN-D**

Overview

LEVEL

Knowledge

PURPOSE

This course provides a broad technical information on refining processes and units.

LEARNING OBJECTIVES

Upon completion of the course, participants will be able to:

explain the role of various processing units in a refinery,

describe the main manufacturing schemes encountered in oil refining,

WAYS AND MEANS

This training offers a new training solution that integrates not only a virtual classroom but also a complete environment to support the trainees in the acquisition of the proposed contents.

Pre-workshop
: this sequence immerses the participants in the training, a few days before the virtual class, through introductive contents on our LMS.

Live session
: virtual classroom (
20 hours in 5 days
): the virtual classroom allows a face-to-face meeting with the participants. It begins with interactions with the participants in order to assess the understanding of the contents delivered in the "Pre-workshop" sequence, continues with the development of the whole targeted technical program and ends with an assessment of the acquired knowledge.

Post-workshop: it provides a post event support to the participants, through additional content allowing those who wish to deepen the topics covered. The support will also be complemented by a question-and-answer forum, accessible during the week following the virtual class.

Detailed course material with a glossary of the main technical terms used in the refining industry.

Active participation of trainees through interactive games and quizzes to grasp the key points of the course.

A summary per unit is built to highlight key process variables.

LEARNING ASSESSMENT

Multiple-choice questionnaire.

PREREQUISITES

To fulfill at least one of the following criteria:

to have a 3 months of proven professional experience in the refining or petrochemical industry,

or to have followed a training course orientated to introduction to the refining environment.

REFINING PROCESSES

20

Crude oil fractionation:
Origin, overall characteristics and classification of crude oils.
Yields and properties of straight-run cuts obtained by distillation, potential destinations.
Industrial units: atmospheric distillation, vacuum distillation, light-ends fractionation.
Typical process scheme, operating conditions, energy consumption.
Catalytic reforming and isomerization:
Octane improvement of virgin naphthas.
Basics of processes, types of catalyst, product yields and hydrogen production.
Industrial units: process flowsheets, operating conditions, equipment, low pressure processes.
Hydrorefining processes:
Main features of impurities removal by catalytic hydrogen treatment.
Main refining applications.
Example of ULSD hydrotreatment unit: operating principles, operating conditions.
Scrubbing treatments: amine washing, sulfur production, treatment of residual gases from Claus units.
Conversion units:
Outline of conversion and various cracking processes.
Characteristics and origin of feeds for cracking.
Conversion by means of thermal cracking: visbreaker, various cokers.
Conversion by means of catalytic cracking: FCC and related units, gasoline sweetening and desulfurization, alkylation, production of MTBE, ETBE and propylene, hydrocracker and related units, hydrogen production (SMR, POX).
Recent developments in hydrotreatment and hydroconversion of heavy residues.
Hydrogen balance in the refinery, energy consumption per unit, CO_2 emissions at the outlet of the refinery.
Manufacturing flowsheets.