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REFINING PROCESSES AND PETROLEUM PRODUCTS

▲ Who should attend?

Anyone working in the oil and gas and related sectors whose activity, whether technical, commercial, legal, financial, or human resources, is in some way connected with oil refining.

▲ Duration

5 days

▲ Dates & Location

March 2-6, 2009
Rueil-Malmaison

September 7-11, 2009
Rueil-Malmaison

▲ Tuition Fees

€ excl. tax 1,990

▲ Lecturers from

• IFP Training

Ref. **RPC / RPPP**

OBJECTIVES

To bring broad technical information on refining processes and schemes, and on petroleum products.

At the end of the session, the participants know:

- the composition, the main characteristics and new trends of petroleum products
- the roles of the different refining units and their process characteristics
- the main manufacturing schemes encountered in the oil refining field
- the economic context of this industry.

COURSE CONTENT

PETROLEUM PRODUCTS — 1.25 days

Energy and non-energy products and their main uses.

Principal components of petroleum products; general hydrocarbon classification and main impurities.

Quality requirements imposed on petroleum products in view of their utilization: quality **specifications** measured by **standard tests**, characteristics related to the product composition, origin and processing routes.

New trends in market structure and product characteristics, biofuels.

REFINING PROCESSES — 2.75 days

Crude oil fractionation

Origin, overall characteristics and classification of **crude oils.**
Yields and properties of straight-run cuts obtained by distillation.
Industrial units: **atmospheric distillation**, **vacuum distillation**, **light-ends fractionation**.
Various process schemes, 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 schemes, operating conditions, equipment, new trends.

Hydrorefining processes

Main features of impurities removal by catalytic hydrogen treatment.
Main refining applications.
Example of ULSD hydrotreatment unit: functioning, operating conditions.

Conversion units

Outline of conversion and various cracking processes.
Characteristics and origin of feeds to be cracked.
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.

Scrubbing treatments: **amine** washing, **sulfur** production, treatment of residual gases from Claus units.

Other processes for production of petroleum products: GTL, synthetic crude oils.

MANUFACTURING SCHEMES — 0.5 day

Main routes to major products.
Base lube oil manufacturing.

MAIN ECONOMIC FEATURES OF REFINERY OPERATIONS — 0.5 day

Prices of crude oils and products, operating costs, economic margin of a refinery.
Examples of flexibility in operation and its economic consequences.

The lecture is backed up by a specific course manual, easy to consult after the course.
A glossary of the main technical terms used in the refining industry is given to the participants.
Also scheduled on 4 days at Energy Institute, London (UK) from May 12 to 15, 2009.

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