



PE097: Chemical Process & Refining Technology



Training Description:

This intensive course shows how any crude oil is converted to products based upon the demand for premium quality gasoline, diesel, lubes, and chemical feedstock. It is useful for those new to the refining business such as new hires of any discipline, transferees from other sectors of the petroleum, upstream, mid-stream, and chemical sectors.

This course is excellent for experienced operators who want to understand the 'why' as much as the 'how' of refining. Basics of refining and its technology are stressed. Details of chemistry, process conditions, and materials are described where necessary to support the basics. The backbone of the course is to develop a refinery processing scheme through a series of simple, linked student-worked problems. This will show how a processing scheme to meet product qualities and volumes is developed.

Training Objective:

By the end of the training, participants will be able to:

- ✓ Sources of refinery feedstocks, crude or synthetic
- ✓ Composition of the feeds, their characterization, desirable properties, and selection
- ✓ How a refinery matches crude composition (assay) to product market demand by selection of process units
- ✓ Fundamentals of individual refinery processes, engineering, materials, and construction challenges
- ✓ Operational challenges
- ✓ How to improve profitability by debottlenecking, yield improvement, and blending
- ✓ Will have an understanding of the overall process operation of an integrated petroleum refinery and the extensive vocabulary unique to this industry
- ✓ Participants will also have gained knowledge of crude oil properties and fuel product specifications; and the environmental pressures on the oil industry; the results of these pressures on fuel specifications; and the changes demanded of the oil industry

Training Designed for:

This course is intended for those who have refinery-operating experience or who are involved in supporting operations. New Refinery Engineers, Product Sales personnel, Fuel Buyers, Oil-Traders, those involved in economic assessment of refining operations or financial analysis of sales / refining. In addition, personnel concerned with the sale of equipment, chemicals, supplies, or services to the refining industry should benefit from this course. As well as experienced operating personnel and engineering staff should find a great deal of beneficial information, particularly if they have worked in only one area of the refinery and have the need to gain an overview of refining operations.





Training Program:

DAY ONE:

- ❖ PRE-TEST
- ❖ Introduction
- ❖ Refining climate, background and driving forces
- ❖ Crude oil distillation processes: atmospheric and vacuum

DAY TWO:

- ❖ Straight-run naphtha processing, treating, isomerisation and reforming for gasoline production
- ❖ Distillate desulfurization for diesel and heating oil production
- ❖ Light-ends recovery and treating of liquefied petroleum gas (LPG) for gasoline blending and sales

DAY THREE:

- ❖ Vacuum gas oil conversion, catalytic feed hydrotreater (CFHT), fluidized catalytic cracking (FCC) and hydrocracking
- ❖ Light olefin streams recovery, treating and alkylation for gasoline
- ❖ Residue processing, residue fluidized catalytic cracking (RFCC), ARVDS, VRDS, residue hydrocracking, delayed and continuous coking

DAY FOUR:

- ❖ Lube oil production
- ❖ Aromatics recovery and re-arrangement to make benzene, toluene, ethyl-benzene and xylene (BTEX)

DAY FIVE:

- ❖ Product blending to make gasoline, diesel, heating oil, and fuel oil
- ❖ Refining economics
- ❖ Course Conclusion
- ❖ POST-TEST and EVALUATION

Training Requirement:

“Hand’s on practical sessions, equipment and software will be applied during the course if required and as per the client’s request”.

Training Methodology:

This interactive training course includes the following training methodologies as a percentage of the total tuition hours:-

- 30% Lectures, Concepts, Role Play
- 30% Workshops & Work Presentations, Techniques
- 20% Based on Case Studies & Practical Exercises
- 20% Videos, Software & General Discussions
- Pre and Post Test





Training Certificate(s):

Internationally recognized certificate(s) will be issued to each participant who completed the course.

Training Fees:

As per the course location - This rate includes participant's manual, hand-outs, buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

Note: The 5% VAT (Value Added Tax), will be effective starting 01st of January 2018 as per the new regulation from the UAE Government. The VAT applies for all quotation both for local and abroad.

Training Timings:

Daily Timings:

07:45 - 08:00	Morning Coffee / Tea
08:00 - 10:00	First Session
10:00 - 10:20	Recess (Coffee/Tea/Snacks)
10:20 - 12:20	Second Session
12:20 - 13:30	Recess (Prayer Break & Lunch)
13:30 - 15:00	Last Session

For training registrations or in-house enquiries, please contact:

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Training & Career Development Department

