

Technology of Refining Processes



Focus on: **The Manager** ☒ **The Specialist** ☒ **Spotlight Programme** ☐ **Hands-on Skills** ☐

Course Overview

Petroleum Refining Technology provides comprehensive training on all aspects of the refining process. It begins with an in-depth exploration of crude oil chemistry, examining the complex mixture of hydrocarbons and chemical compounds that make up crude oil. Participants will then gain a detailed understanding of the refining processes used to separate crude oil into its various components and finished products.

The course focuses on current commercial refining technologies, licensing structures, and industry best practices. It includes real-world examples and case studies, ensuring participants develop a practical and theoretical understanding of refining operations.

Designed as an introductory course, this program is ideal for industry professionals seeking to familiarize themselves with the key refining processes and gain insights into the production of petroleum-based products. It equips attendees with essential knowledge and skills to navigate the refining sector effectively.

Course Objectives		This Course is Ideal For:	
1	Comprehensive Understanding of Crude Oil Chemistry – Learn about the complex mixture of hydrocarbons and chemical compounds that make up crude oil.	✓	Refining Technologists
2	Detailed Refining Process Insights – Explore the techniques used to separate crude oil into valuable products such as gasoline, diesel, and petrochemicals.	✓	Chemical Engineers
3	Focus on Commercial Refining Technologies – Gain knowledge of current industry technologies, licensing structures, and operational best practices.	✓	Refinery operations personnel, shift supervisors and refinery operatives will also find the content of this course very valuable and beneficial.
4	Real-World Applications and Case Studies – Analyse practical examples to enhance understanding and apply theoretical concepts to real-life scenarios.	✓	Managers in the oil and gas energy sector
5	Introduction to Petroleum Economics – Understand the economic factors influencing refining operations, product pricing, and market trends.	✓	Corporate Planners, Investment Analysts, Oil and Gas Directors who would appreciate a better understanding of the refining Business

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6	Gain Industry-Relevant Skills Development – Build expertise in refining operations, risk management, and decision-making within the petroleum sector.	✓ ✓	Managers in industries and professions supplying or serving the industry who would like a deeper understanding of the Refining Business e.g. bankers, lawyers, analysts, service majors etc. Project managers, Engineers, Supply Planners & Scheduling Professionals
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Course Content

Day	Theme	Coverage
1	Refinery Technology	<ul style="list-style-type: none"> • Introduction • Crude Oil Origins & Characteristics • Crude oil Assay and properties • Crude oil products • Product specifications • Gasoline • Kerosene/ Jet Fuel • Fuel Oil/ Diesel Fuels • Petrochemical Feedstocks • Refineries Complexity • Overall refinery flow: Interrelationship of processes
2	Petroleum Refinery Processes	<ul style="list-style-type: none"> • Crude Processing • Desalting • Atmospheric distillation • Vacuum distillation • Heavy Oils Processing – Coking and Thermal Processes • Delayed Coking • Fluid Coking • Flexicoking • Visbreaking • Case study – example
3	Motor Fuel Production	<ul style="list-style-type: none"> • Process for Motor Fuel Production • Fluid catalytic cracking • Hydrocracking • Cat Cracking • Isomerization • Alkylation • Hydrotreating

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		<ul style="list-style-type: none"> • Catalytic Reforming • Case study – example
4	Supporting Operations	<ul style="list-style-type: none"> • Supporting Operations • Blending for Product Specifications • Hydrogen production • Refinery Gas Plants • Acid Gas Treating • Sulfur Recovery Plants • Case study – example
5	Refining Economics	<ul style="list-style-type: none"> • Refinery Economics • Residue Reduction • Asphalt and Residual Fuel • Cost Estimation • Economic Evaluation • Case Studies • Group Discussions • Course Evaluation & Course Summary

Course Assessment	Certification
Participants will be assessed on: Participation in sessions Completion of exercises & case studies Performance in assessments	Upon successful completion of the course, participants will receive a Certificate of Successful Completion , along with a Transcript of Marks showing the performance by grade in each element of assessment and overall.

Course Instructor
<p>With BSc and PhD degrees from the UK, and with over 30 years of refinery technology, operations, and management expertise for several famous-name oil companies, this speaker is now an internationally-famous chemical engineering consultant.</p> <p>As a Chartered Chemist, a Member of the Royal Society of Chemistry and a Member of the American Institute of Chemical Engineers, he holds honorary appointments at a number of European universities and conducts cutting-edge research into vacuum distillation, gas recovery, absorption and pyrolysis.</p>