An Intensive 5 Day Training Course

Understanding the Global Petrochemical Industry


This course is Designed, Developed, and will be Delivered under ISO Quality Standards.
Why Choose This Training Course?

Petrochemicals are used extensively in our daily lives from trivial plastic materials to the high range sophisticated material used in artificial body parts, and medical devices. Petrochemicals business is growing rapidly. Such a rapid growth is also adding to the environmental risks.

To an existing oil & gas producing and refining, it is very important to expand its hydrocarbon value chain by expanding into petrochemical business both to improve capital productive, by fully utilizing hydrocarbon by-products, and reduce the crude oil price risk for the integrated producing, refining and petrochemical business.

This 5-day training course has been designed to enable participants to learn more about the value of petrochemicals and the success factors that can improve financial performance and help companies to survive during low prices and thrive when prices improve.

In this PetroKnowledge training course, the participants will gain the technical knowledge and business expertise and be able to:

• Determine the basic chemicals groups, and the rearrangement of hydrocarbons chains in the process of adding economic value, and the measure of conversion and yield in a refinery
• Understand the basic refining operations and the business of petrochemicals
• Determine the project management evaluation and the key considerations in selecting proper technology, capital, and operating costs for the project
• Identify the technical and economic merits and the challenges in integrating petroleum refinery with petrochemicals.
• Differentiate the petrochemical business concepts and individual merits with examples of Strategies/ Business Models of Integrated Oil Companies, National Oil Companies and Non-Oil Companies.
• Understand the petrochemical innovations, challenges & future trends
• Recognize and effectively deal the environmental issues arising from the rapid growth in the use of plastics

What Are The Goals?

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

• Master the petrochemical value chain from the raw oil & gas to finished plastics, and other high value sophisticated material used in improving the quality of lives
• Enhance their knowledge of oil & gas production, refining, petrochemical operations, manufacturing, demand forecasting, sales contracts, prices, distribution, sales, etc.
• Evaluate the petrochemical markets, business strategies and petrochemical models
• Confidently discuss the technical terms, concepts and buzzwords in the petrochemical industry with your peers and clients

Who Is This Training Course For?

This PetroKnowledge training course is designed to train and improve the business knowledge of a wide range of professionals as follows:

• Business Development managers
• Corporate Planning professionals
• Geoscience & Engineering professionals
• Refinery professionals
• Supply Planners & Scheduling professionals
• Government regulators
• Law professionals
• Tax & Finance advisors
• Auditing personnel
• Compliance officers
• Equity analyst and Bankers
• Joint Venture officers
• Negotiators and Contracting professionals
• Trading professionals

How Will This Training Course Be Presented?

This dynamic and highly interactive training course is designed to encourage delegate participation through a combination of group discussion, practical exercises case studies, quizzes and an extensive use of short videos highlighting the petrochemical operations, environmental and safety considerations to reinforce new knowledge and skills, and discussion of practical issues in their organizations.

www.petroknowledge.com
Day One: Crude Oil Supply and Refining

Competency Description: As a manager, first and foremost, you need to understand the essential elements of Petrochemical Industry feedstock supply chain that belongs to the upstream Petroleum industry.

Key behaviours
- Appreciate the importance of origin of hydrocarbon resources
- Understand the scope of elements of upstream activities that contribute in exploring, finding and producing oil and gas
- Grasp the essential aspects of refining crude oil into its usable refined products that serve as feedstock to petrochemicals
- Understand the economics of producing oil & gas which is crucial to petrochemicals

Topics to be covered
- Introduction to Course
- Essence of International Oil Supply – Global Reserves, Production & Trade
  - Introduction to global oil business - Exploration, Refining, Marketing, Transportation
  - Global Oil Resources – World Oil and Gas Reserves, Production of Oil and Gas
  - Industry units – for the USA, Europe and Asia, Conversion factors
- Crude Oil Classifications
- Crude Oil Quality Indicators, crude oil characterization by Assays
- Crude Oil Distillation – Refined Products
- Oil Industry Units and Conversion factors
- Fundamentals of Oil Economics
  - Delivered price of crude oil – the concept GPW (Gross Product Worth)
  - Value of Crude Oil and the Determining Factors in Crude Selection
- Introduction to Crude Oil Refining - Distillation
- Refinery Configurations
  - Topping
  - Hydroskimming
  - Cracking
  - Coking

Day Two: Refinery Economics and Petrochemicals

Competency Description: As a manager of petrochemical business, you need to understand the refinery economics and its impact on petrochemicals profitability.

Key behaviours
- Appreciate the importance of refinery development and how its configuration is responsible for the efficient conversion of crude oil to refined products
- Understand the scope of refinery economics
- Grasp the essential refinery margin calculations
- Understand what constitutes petrochemicals and its basic chemistry
- Know the concept of building blocks in petrochemicals

Topics to be covered
- Refinery Development
- Refinery Economics
  - Net Refining Margin calculation
- Introduction to Petrochemical
  - What are Petrochemicals?
  - Oil & Gas Value Chain leading to Petrochemicals
  - Classification of Petrochemicals
  - How Petrochemicals are derived from Well Head to Products
- Petrochemicals History and Its Key Role
  - The Beginning of Petrochemical Industry
  - Petrochemical Applications in Daily Life
  - Petrochemical Applications in Health Care
- Basic Chemistry
  - Basic Organic Chemistry
  - Key Properties of Organic chemicals
  - Classification of Chemicals into Groups
  - The Building Blocks in Petrochemicals
  - Reactions/Process Technologies Of Petrochemical Industry

Day Three: Petrochemical Feedstocks, Processes and Equipment

Competency Description: As a manager of petrochemicals business, you need to evaluate which feedstock serve best for petrochemicals manufacturing. It is essential to understand which raw material and feedstock is the most suitable for your plant.

Key behaviours
- Be aware of the different raw material for petrochemicals and their relative merits and demerits
- Understand the scope of refinery economics
- Grasp the essential refinery margin calculations
- Understand what constitutes petrochemicals and its basic chemistry
- Know the concept of building blocks in petrochemicals
- Understand the benefits of integrating refineries with petrochemicals

Topics to be covered
- Feedstock for Petrochemicals
  - The different raw material for petrochemicals from C1 to C50
  - Different feedstock sources for petrochemicals
  - World oil refining and petrochemicals output composition
  - Difference between fuels and chemicals
  - “Alternate Value” of hydrocarbons: Gasoline Pool vs. Petrochemicals
  - World gas oil industry basic functions
- Petrochemical Processes And Equipment
  - The overview of hydrocarbons groups in crude oil
  - The basic refining operations and processes
  - The working knowledge of basic equipment used in petrochemical industry,
  - Rearrangement of Hydrocarbons chains
  - The measure of conversion and yield in refinery
- Refinery-Petrochemical Integration
  - Identify the seven basic chemicals.
  - Learn what is meant by the integration of refining and petrochemicals
  - Explore what are the benefits and challenges of integrating refinery with petrochemicals.
Day Four: Petrochemical Value Chains and Markets

**Competency Description:** To be able to continuously improving profitability, as manager of petrochemicals, you need to review supply chain and optimize with the most appropriate feed stock that is available. It is also equally essential to review the petrochemical markets and forecast the demand, supply and prices.

**Key behaviours**

- Understand and review the value chains and optimize the process
- Conduct market research and understand market demand, supply and price forecast
- Understand what are the different segments of petrochemical industry
- Be cognizant of planning and forecasting techniques

**Topics to be covered**

- Petrochemical Value Chains I
  - Understand the concept of value chain
  - Understand how series of upgrades are made from the raw material to the finished products
  - Learn how these value chain are optimized
  - Understand the chemical linkage from hydrocarbons to end uses
- Petrochemical Value Chains II
  - Exploring olefins value chain - ethylene, propylene, and polyvinyl chloride.
  - Understanding how their demand is driven.
  - Olefins product applications and manufacturing technology
- Petrochemical Markets-Mod9
  - The global chemical business.
  - Looking at the chemical industry market segments.
  - Learning basic market research.
  - Learn what is forecasting.
  - Explore the forecasting / planning techniques

Day Five: Strategies and Project Evaluation

**Competency Description:** As a manager of petrochemical project or as manager of petrochemical business, you should be ready to develop plans and apply appropriate business strategies and tactics to survive in the bad times and thrive at the good times in the industry. And, be able to enhance your capital productivity continuously.

**Key behaviours**

- Understand the participation behaviors of typical NOC’s, IOCS’s and non-Oil companies
- Understand the business models of NOC’s, IOC’s and non-oil companies, and their respective key success factors.
- Understand what are the different segments of petrochemical industry
- Be cognizant of planning and forecasting techniques of this industry

**Topics to be covered**

- Petrochemical Strategies
  - Define the petrochemical participation concept
  - With examples of Strategies/Business Models of
    - International Oil Companies
    - National Oil Companies
    - Non-Oil Companies
  - International oil Companies Key Strategies
  - National Oil Companies - Chemicals Business Structure and Key Strategies
  - Major Non-Oil Companies competitive advantage
  - Major Business Incentives - Five Categories
  - Know about the best in Class summary
  - Understand the key success factors
- Petrochemical Project Evaluation
  - What are project management, and its core activities and considerations?
  - Project Management Evaluation Steps
  - What are the considerations in selecting proper technology, capital, and operating costs for the project?
  - Capital Cost estimates accuracy
  - The different ways of conducting financial evaluation, measures for its success and adding share-holder value
  - Comparative measures of performance
  - Investment Appraisal Methods
  - Project Selection Criteria
  - Conclusions
- Petrochemical Innovations, Challenges & Future Trends
  - What are the drivers for innovations in Petrochemicals
  - Innovations in Petrochemicals – Hi Tech
  - Innovations to Meet Market Demand – MTO
  - Emergence of Bio-feedstock's
  - How the unique properties of petrochemicals cater to the different industries
  - What are the refining challenges, future trends, and risks involved in petrochemicals

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Understanding the Global Petrochemical Industry

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This fee is inclusive of Documentation, Lunch and Refreshments

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Maximize your training budget and have several members of your staff, who require specific training, to attend with the advantage of not incurring additional travel costs when attending a ‘public’ training courses & seminars.

Would you like a PetroKnowledge training course delivered at a time or location to suit you? Would you like PetroKnowledge to tailor a course from our comprehensive library of programmes? Or would you like us to create an entirely new, bespoke course to suit the exact needs of your organisation?

Working in partnership with our clients, PetroKnowledge provides an enjoyable, creative learning experience that enables participants to develop their skills and knowledge. We can deliver not only generic, off-the-shelf courses from our extensive learning portfolio, but we can provide tailored as well as bespoke learning on any aspect of skill development or knowledge. Our in-house courses are conducted by the same expert trainers who conduct PetroKnowledge public courses so you can be assured they will fulfill the learning objective of any organisation.
BOOKING TERMS & CONDITIONS

Booking
• Bookings for courses can be made via our website (petroknowledge.com) or by contacting our Registration Desk on +971 2 5577 389 or at reg@petroknowledge.com
• For on-line bookings, please select the course that you require and click on the “Register Now” button, following the instructions step by step
• Upon receipt of booking in order, enrollment on the respective training course will be confirmed by Registration Team with all necessary documentation

Invoicing and Payment
• Our fees include course presentation, relevant materials, physical & digital documentation, lunch and refreshments served during entire training. Accommodation charges are not included in the course fees
• Course fees are payable upon booking unless a valid, authorized Purchase Order is provided and accepted
• Invoices will be sent via email/courier to the ID/name and address provided
• We prefer to have the fees payment in our account before the start of training course. However, if your company has a different payment policy, the same should inform us in advance
• The currency of fees is in US Dollars (USD). Payments can be made in USD or UAE local currency AED (Arab Emirates Dirhams) either by Bank Transfer or by Credit Card. Our Bank Account details will be provided on the Invoice
• Please note that we do accept payment by cash, in USD or AED, only for the last minute bookings

Cancellation of Courses
• It may be necessary for PetroKnowledge to amend or cancel any course, course times, instructors, dates or published fees due to unforeseen circumstances and we reserve the right for such changes
• Any amendments will be advised before the course start date and any bookings already paid in full will not be subject to increased fees

Cancellation by Client
• Once you have completed your booking, received your confirmation of enrollment and a dated payment Invoice, you are deemed to have a contract with PetroKnowledge. You reserve the right to cancel this contract given the below terms
• All cancellations must be received in writing at reg@petroknowledge.com and info@petroknowledge.com at least 14 days prior to the training
• After the cancellation period has expired, consideration may be given, on a case to case basis, if a registered delegate nominates a substitute on the same course, shifts to next session of the course or moves to a new course
• For a cancellation request made on or before the statutory 14 day cancellation period, a refund may be given or a credit note issued which can be used against future course fees
• A 25% administration fee (of the total course fee at the time of booking) will be charged for any cancellations made outside of the statutory cancellation period

Attendance Certificate
• The daily course schedule should be accurately followed to ensure undeterred implementation of our training
• All delegates, who participated in their course throughout, will receive the Certificate of Completion on the last day
• Please report any foreseeable absences to a PetroKnowledge representative or to your sponsors directly
• An absence of three (3) or more sessions of the course will invalidate your eligibility for the Certificate of Completion