MBA Essentials of Petrochemicals in a Circular & Low-Carbon Economy

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

This NTUITIV MBA Essentials Course focuses on strategies for petrochemicals in a circular and low-carbon economy, and aims to equip executives with a comprehensive understanding of the petrochemical value chain — from feedstock selection to specialty materials — integrated with sustainability strategy, innovation pathways, and modern financial evaluation frameworks. The petrochemical industry is entering a new strategic era. While petrochemicals remain essential to modern life — from medical devices and lightweight automotive components to packaging, electronics, and infrastructure — the industry is now being reshaped by:

- Energy transition and decarbonisation targets
- Circular economy policies and plastic regulation
- ESG-driven capital allocation
- Feedstock diversification and bio-based materials
- Vision 2030 industrial transformation agendas

For oil & gas producers, refiners, and emerging industrial economies, petrochemicals represent:

- A pathway to diversify revenue beyond fuels
- A hedge against crude price volatility
- A driver of downstream value capture
- A catalyst for industrialisation and job creation

Global refining margins are under structural pressure as transport fuels face long-term demand uncertainty, meanwhile:

- Petrochemical demand continues to grow in emerging markets
- Plastics recycling mandates are expanding
- Bio-feedstocks and chemical recycling technologies are scaling
- Integrated refinery-petrochemical complexes are accelerating
- Carbon intensity disclosure is reshaping project approvals

Executives must now think beyond traditional refinery economics. This programme provides the strategic lens required to reposition petrochemicals within a decarbonising global economy.

Course Objectives		This Course is Ideal For:	
1	Understand the full petrochemical value chain from crude to advanced materials	✓	Refinery and petrochemical senior managers
2	Evaluate refinery-to-chemicals integration strategies	✓	Corporate strategy and planning professionals
3	Assess petrochemical project economics using modern financial tools	✓	Business development leaders and Commercial and trading professionals
4	Analyse global petrochemical demand drivers and market cycles	✓	Government industrial policy advisors

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5	Compare NOC, IOC, and independent chemical company strategies	✓	Energy transition and sustainability executives
6	Incorporate sustainability and circular economy metrics into decision-making	✓	Investment and project finance professionals
7	Identify innovation pathways including bio-feedstocks and chemical recycling	✓	Engineers transitioning into leadership roles

Course Content

Day	Theme	Coverage
1	From Crude Barrel to Chemical Building Blocks	• Global crude supply, refining fundamentals and economics • Crude selection and Gross Product Worth (GPW) • Refinery configurations and conversion technologies • The shift from fuels to chemicals • Strategic importance of refinery upgrading
2	Petrochemicals Fundamentals & Industrial Transformation	• Petrochemical origins and evolution • Hydrocarbon chemistry simplified for business leaders • Primary building blocks: olefins, aromatics and derivatives • From wellhead to polymers and specialty materials • The role of petrochemicals in modern industrial ecosystems • Petrochemicals within Vision 2030 diversification strategies
3	Feedstocks, Processes & Integration Strategy	• Feedstock options: naphtha, ethane, LPG, condensate • Oil to Chemicals • Steam cracking and conversion technologies • Measuring yield and conversion efficiency • Refinery–petrochemical integration models • Economics of alternate hydrocarbon value (fuel vs chemicals) • Operational excellence and capital productivity
4	Value Chains, Markets & Circular Economy	• Petrochemical Value Chain Optimisation - From feedstock to polymer to end-user industries - Olefins and aromatics value chains - Demand drivers in packaging, construction, healthcare, automotive • Market Analysis & Forecasting - Global petrochemical demand outlook - Market segmentation and competitive positioning - Forecasting methodologies - Risk exposure in volatile cycles • Sustainability & Circular Strategy - Plastic waste management challenges

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		- Mechanical and chemical recycling - Bio-feedstocks and green chemistry - ESG and carbon intensity benchmarking
5	Strategy, Investment & Future-Proofing Petrochemicals	• Competitive Business Models - National Oil Companies (NOCs) - International Oil Companies (IOCs) - Independent chemical producers - Non-oil integrated industrial players • Project Evaluation & Capital Allocation - Investment appraisal tools (NPV, IRR, payback, sensitivity) - Capital cost estimation and accuracy - Technology selection criteria - Risk management in petrochemical projects • Innovation & Future Trends - Methanol-to-olefins (MTO) developments - Advanced materials and specialty chemicals - Bio-based polymers - Carbon capture in chemical complexes - Low-carbon and circular petrochemical ecosystems

Course Assessment

Participants will be assessed on:
Participation in sessions
Completion of exercises & case studies
Performance in assessments

Certification

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

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.
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.