MAWA EVENTS

Address: No. 857, Block A2. Leisure Commerce Square - No 9., 46150 Petaling Jaya, Selangor, Malaysia

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PETROLEUM REFINING - PRODUCTION PLANNING, SCHEDULING AND YIELD OPTIMIZATION

"Maximize Refinery Efficiency, Optimize Yields, and Enhance Profitability Through Smart Planning and Scheduling"

Schedule

Venue (InHouse)	Fees
At Your Organization Premises	Ask For The Quotation

► **Available delivery methods:** In-House Training

Introduction

In today's competitive and dynamic energy market, refineries must operate at peak efficiency to maximize profits, meet market demands, and ensure product quality. Effective production planning, scheduling, and yield optimization are essential for achieving these goals.

The Petroleum Refining – Production Planning, Scheduling and Yield Optimization course provides a comprehensive understanding of how refineries can integrate process optimization, economic evaluation, and real-time scheduling to improve operational performance. Participants will gain in-depth knowledge of refinery configuration, process units, product blending, and yield management techniques.

This course blends the technical and economic aspects of refining operations, focusing on how to develop and execute production plans that minimize costs, maximize throughput, and align with market requirements—all while maintaining safety and environmental compliance.

Objectives

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

- Understand the structure and functions of modern petroleum refineries.
- Develop effective production plans and short-term operating schedules.
- Optimize refinery yields using process and blending models.
- Apply linear programming and simulation techniques for planning and scheduling.
- Evaluate refining margins and economics under varying market conditions.
- Coordinate production with logistics, maintenance, and marketing teams.
- Implement yield improvement strategies without compromising quality or safety.

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Why Attend

Refineries face increasing pressure to improve profitability while adapting to fluctuating crude quality, changing product specifications, and volatile markets. This course equips participants with the tools and techniques to balance production efficiency with economic performance.

By attending, you will learn how to plan and schedule refinery operations effectively, manage constraints, and identify opportunities for yield optimization. This knowledge is vital for ensuring sustainable and profitable refining operations in an increasingly complex energy environment.

Target Audience

This course is designed for professionals involved in refinery operations, planning, and optimization, including:

- Refinery Planners and Schedulers
- Process and Operations Engineers
- Production and Planning Managers
- Refinery Economists and Analysts
- Process Optimization Specialists
- Supply Chain and Logistics Coordinators
- Maintenance and Reliability Engineers
- Energy and Production Consultants

Individual Benefits

- Gain a strong understanding of refinery planning and optimization principles.
- Learn to develop and manage efficient refinery schedules.
- Improve decision-making with data-driven and model-based approaches.
- Enhance skills in economic evaluation and yield management.
- Strengthen your ability to coordinate production with commercial targets.
- Build technical and strategic competence for refinery leadership roles.

Organizational Benefits

- Increase refinery profitability through optimized production planning.
- Improve coordination between operations, planning, and marketing teams.
- Reduce operational bottlenecks and downtime.
- Enhance yield and product quality management.
- Support continuous improvement in energy efficiency and environmental compliance.
- Build in-house expertise in planning and scheduling technologies.

Instructional Methodology

This course adopts a practical, hands-on approach that combines technical concepts with real-world refinery applications. It uses:

- Interactive lectures and guided discussions
- Refinery case studies and operational examples
- Hands-on exercises using planning and scheduling models
- Group workshops and problem-solving simulations
- Video demonstrations and process flow analysis
- Continuous feedback and expert guidance

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Course Outline

Module 1: Overview of Petroleum Refining

- Refinery configurations and process units
- Crude oil types and product yields
- Refinery flow schemes (hydroskimming, conversion, deep conversion)

Module 2: Refinery Processes and Operations

- Overview of distillation, cracking, reforming, hydrotreating, and blending
- Integration of process units and material balance
- Key performance indicators for refinery operations

Module 3: Production Planning Fundamentals

- Objectives and hierarchy of refinery planning
- Short-, medium-, and long-term planning horizons
- Data requirements and constraints in planning models
- Crude selection and product slate optimization

Module 4: Refinery Scheduling Techniques

- Scheduling tools and methods
- Tank farm and product movement management
- Maintenance, turnaround, and blending schedule coordination
- Real-time operations monitoring and adjustment

Module 5: Yield Optimization Strategies

- Understanding yield patterns and limitations
- Process optimization and bottleneck analysis
- Blending optimization and product quality control
- Linear and nonlinear programming for yield improvement

Module 6: Refinery Economics and Margins

- Economic evaluation and cost allocation
- Refining margin analysis (GRM and NRM)
- Price forecasting and market-based decision-making
- Sensitivity analysis and profitability scenarios

Module 7: Integration of Planning, Scheduling, and Control

- Role of digital tools and advanced process control (APC)
- Integration of ERP, MES, and LIMS systems
- Coordinating operations, logistics, and supply chain functions

Module 8: Risk Management and Sustainability

- Managing uncertainty in crude and product prices
- Energy efficiency and emission reduction strategies
- Environmental and safety considerations in refinery operations
- Sustainable refining and renewable fuel integration

Module 9: Case Studies and Best Practices

- Successful refinery optimization case studies
- Common challenges in planning and scheduling
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Global trends in refinery management and digital transformation

Module 10: Capstone Exercise – Refinery Planning Simulation

- Developing a complete production plan and schedule
- Analyzing yield, cost, and margin outcomes
- Group discussion and instructor evaluation

Certification

Upon successful completion, participants will receive a Certificate in Petroleum Refining – Production Planning, Scheduling and Yield Optimization, recognizing their expertise in optimizing refinery performance through advanced planning and operational techniques.

This certification demonstrates the participant's ability to effectively manage refinery operations, improve production efficiency, and drive profitability—key competencies for professionals in modern refinery management.

Why Choose MAWA Events

- **Global Expertise:** More than 17 years of experience in professional training and consulting.
- **Industry-Leading Faculty:** Courses delivered by seasoned professionals with hands-on experience.
- **Practical Insights:** Learn to turn theory into actionable strategies for real-world business impact.
- **Client-Focused Solutions:** Customized programs designed to achieve your organisation's unique goals.

In-House / Customized Training Interested in running this course for your team? Please contact us:	TEL: **+601116373203**	EMAIL: **info@mawaevents.net**