MAWA EVENTS

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

Phone: +601116373203 | **Email:** info@mawaevents.net

PRODUCTION PLANNING AND SCHEDULING IN PETROLEUM REFINERIES

"Master the Art of Efficient Refinery Operations Through Strategic Planning, Scheduling, and Optimization"

Schedule

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

Introduction

Efficient production planning and scheduling are critical to the success and profitability of petroleum refineries. Refinery operations involve complex interactions between crude oil selection, process unit capacities, product specifications, and market demands. Effective coordination of these factors ensures that production targets are achieved, resources are optimized, and operational costs are minimized.

The Production Planning and Scheduling in Petroleum Refineries course provides participants with a deep understanding of the methods and tools used to optimize refinery operations. The training emphasizes the integration of planning, scheduling, and real-time operations to maximize refinery margins while maintaining product quality and compliance with environmental regulations.

Participants will explore how linear programming (LP), mixed-integer programming (MIP), and advanced software tools are used to plan crude purchases, manage blending operations, schedule production, and respond to market fluctuations. Real-world examples from refineries around the globe will be discussed to illustrate best practices and common challenges.

Objectives

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

- Understand the fundamentals of refinery production planning and scheduling.
- Apply optimization techniques for crude selection and product blending.
- Integrate short-term scheduling with long-term production planning.
- Utilize linear programming models for refinery optimization.
- Analyze constraints, bottlenecks, and capacity limitations in refining operations.
- Develop refinery-wide plans aligned with business and market objectives.
- Enhance decision-making using simulation and digital tools.
- Balance operational efficiency with safety, quality, and environmental standards.

MAWA EVENTS

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

Phone: +601116373203 | **Email:** info@mawaevents.net

Why Attend

This course equips participants with the technical and analytical skills required to improve refinery profitability through better coordination of planning and scheduling activities. In today's competitive environment, refining organizations must respond rapidly to changing crude prices, market conditions, and environmental constraints.

Attending this course will help participants gain a holistic view of refinery operations, from feedstock selection to product dispatch. They will learn to use advanced planning tools to make better operational and commercial decisions that maximize yields and margins.

Target Audience

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

- Production Planners and Schedulers
- Refinery Operations Engineers
- Process Engineers and Technologists
- Supply Chain and Logistics Coordinators
- Optimization and Simulation Engineers
- Production Managers and Supervisors
- Business Analysts and Economists in Oil and Gas

Individual Benefits

- Gain in-depth knowledge of refinery operations and scheduling strategies.
- Learn how to use modeling and optimization tools to maximize profitability.
- Enhance analytical and problem-solving skills.
- Improve coordination between production, maintenance, and logistics teams.
- Strengthen understanding of economic and technical trade-offs in planning decisions.
- Increase professional competence and career growth opportunities.

Organizational Benefits

- Optimize refinery operations to increase margins and reduce costs.
- Improve alignment between planning, operations, and commercial objectives.
- Reduce production delays and bottlenecks through better scheduling.
- Enhance utilization of equipment and resources.
- Strengthen data-driven decision-making and risk management.
- Increase overall refinery efficiency and competitiveness.

Instructional Methodology

The course uses a combination of lectures, discussions, case studies, and practical exercises. Participants will apply optimization principles to real-life refinery problems and learn through interactive sessions. Key methodologies include:

- Instructor-led presentations with visual process flow diagrams
- Case studies on refinery planning and scheduling
- Group problem-solving and simulation exercises
- Demonstrations of LP/MIP tools and optimization software
- Q&A and knowledge-sharing discussions
- Refinery planning simulation workshop

MAWA EVENTS

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

Phone: +601116373203 | **Email:** info@mawaevents.net

Course Outline

Module 1: Overview of Refinery Operations

- Introduction to refining processes and value chain
- Refinery configuration and product slate
- Key process units: distillation, cracking, reforming, blending

Module 2: Fundamentals of Production Planning

- Objectives and scope of refinery planning
- Crude selection, product demand forecasting, and inventory management
- Material balance and yield estimation
- Planning horizons – long-term, medium-term, and short-term

Module 3: Linear Programming (LP) and Optimization Techniques

- Introduction to LP and MIP models
- Development of refinery LP models
- Crude and product blending optimization
- Constraints, objective functions, and solution interpretation

Module 4: Scheduling in Petroleum Refineries

- Difference between planning and scheduling
- Short-term scheduling objectives and challenges
- Unit capacity and downtime management
- Batch sequencing and blending schedules

Module 5: Integration of Planning and Scheduling

- Data flow between planning and scheduling systems
- Refinery information systems and data management
- Advanced software tools for integrated optimization (e.g., Aspen PIMS, RPMS)
- Real-time optimization and dynamic scheduling

Module 6: Economic and Operational Considerations

- Impact of crude and product prices on planning
- Inventory control and logistics optimization
- Energy management and cost reduction strategies
- Balancing economic and environmental performance

Module 7: Case Studies and Best Practices

- Review of refinery planning and scheduling success stories
- Troubleshooting common issues in refinery operations
- Best practices for cross-departmental coordination
- Lessons learned from global refining operations

Module 8: Practical Workshop

- Simulation of refinery planning and scheduling scenario
- Optimization of crude blending and production sequencing
- Group exercise: developing an integrated refinery plan

Certification

Upon successful completion, participants will receive a Certificate in Production Planning and Scheduling in Petroleum Refineries, acknowledging their advanced understanding of refinery optimization.

This certification demonstrates professional expertise in aligning refinery operations with market demands and corporate goals, ensuring participants can contribute to maximizing efficiency, profitability, and sustainability in modern refining environments.

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**