Production Planning in Chemical Manufacturing Training Course

Professional Development Training Course Outline

Category	General Training	**Duration**	5 Days
Base Fee	$1,500 USD	**Delivery Mode**	Online / On-site Hybrid

Course Introduction

Production Planning in Chemical Manufacturing Training Course is designed to equip professionals with advanced knowledge and practical skills required to optimize production processes, improve operational efficiency, and achieve sustainable manufacturing excellence in modern chemical industries. As chemical manufacturers face increasing pressure from global competition, supply chain disruptions, digital transformation, regulatory compliance, and sustainability requirements, effective production planning has become a critical business function. This course integrates Advanced Production Planning (APP), Manufacturing Resource Planning (MRP II), Capacity Planning, Demand Forecasting, Lean Manufacturing, Industry 4.0, Digital Manufacturing, Process Optimization, and Supply Chain Integration to help organizations maximize productivity and profitability.

Participants will learn how to develop robust production schedules, balance plant capacities, optimize inventory levels, manage raw material availability, reduce operational bottlenecks, and improve manufacturing responsiveness. Through practical exercises, industry benchmarks, real-world case studies, and best-practice frameworks, learners will gain actionable insights into Smart Manufacturing, AI-Driven Production Planning, Predictive Analytics, Digital Twin Applications, Sustainable Operations, Process Safety Management, and Operational Excellence. The course enables professionals to align production strategies with business goals while ensuring quality, compliance, cost efficiency, and customer satisfaction.

Programme Curriculum

Production Planning in Chemical Manufacturing Training Course

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Course Duration

5 days

Course Objectives

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

1. Apply Advanced Production Planning (APP) techniques in chemical manufacturing environments.
2. Develop accurate Demand Forecasting and Sales & Operations Planning (S&OP) strategies.
3. Optimize production schedules using AI-Driven Scheduling Tools.
4. Implement Lean Manufacturing and Continuous Improvement methodologies.
5. Improve plant utilization through effective Capacity Planning and Resource Optimization.
6. Integrate Supply Chain Visibility and Digital Manufacturing Systems.
7. Utilize Industry 4.0 Technologies for production planning excellence.
8. Reduce inventory costs through Inventory Optimization and Materials Management.
9. Manage production risks using Predictive Analytics and Risk Management Frameworks.
10. Enhance operational efficiency through Process Optimization Techniques.
11. Improve decision-making using Manufacturing KPIs and Data Analytics Dashboards.
12. Support sustainability goals through Green Manufacturing and ESG Practices.
13. Develop integrated production plans aligned with Operational Excellence and Business Strategy.

Target Audience

1. Production Managers
2. Manufacturing Managers
3. Operations Managers
4. Chemical Plant Supervisors
5. Supply Chain and Logistics Professionals
6. Production Planners and Schedulers
7. Process Engineers and Manufacturing Engineers
8. Continuous Improvement and Operational Excellence Professionals

Course Modules

Module 1: Fundamentals of Production Planning in Chemical Manufacturing

- Principles of chemical production systems
- Production planning hierarchy and framework
- Process manufacturing versus discrete manufacturing
- Production planning challenges in chemical industries
- Key production performance indicators (KPIs)
- **Case Study:** Optimizing production planning in a specialty chemicals manufacturing facility.

Module 2: Demand Forecasting and Sales & Operations Planning (S&OP)

- Market demand analysis techniques
- Forecasting models and predictive analytics
- Demand variability management
- Integrated S&OP processes
- Aligning production with customer requirements
- **Case Study:** Improving forecast accuracy in a multinational chemical company.

Module 3: Capacity Planning and Resource Optimization

- Plant capacity analysis
- Equipment utilization optimization
- Workforce planning strategies
- Bottleneck identification and elimination
- Production constraint management
- **Case Study:** Capacity expansion planning in a petrochemical manufacturing plant.

Module 4: Production Scheduling and Advanced Planning Systems

- Master Production Scheduling (MPS)
- Finite and infinite scheduling methods
- Advanced Planning and Scheduling (APS) systems
- Real-time production monitoring
- Digital scheduling tools and automation
- **Case Study:** Implementing APS software to improve production efficiency.

Module 5: Inventory Management and Supply Chain Integration

- Raw material planning strategies
- Inventory optimization models
- Warehouse and storage planning
- Supply chain synchronization
- Supplier collaboration and risk mitigation
- **Case Study:** Reducing inventory carrying costs through integrated planning.

Module 6: Lean Manufacturing and Process Optimization

- Lean principles for chemical manufacturing
- Waste reduction strategies
- Value stream mapping

- Continuous improvement methodologies
- Operational excellence frameworks
- **Case Study:** Lean transformation in a chemical processing facility.

Module 7: Industry 4.0 and Digital Production Planning

- Smart manufacturing concepts
- Industrial Internet of Things (IIoT)
- AI and machine learning applications
- Predictive maintenance integration
- Digital twins and real-time analytics
- **Case Study:** Industry 4.0 implementation in a smart chemical plant.

Module 8: Risk Management, Sustainability, and Operational Excellence

- Production risk assessment frameworks
- Process safety and regulatory compliance
- Business continuity planning
- Sustainable manufacturing practices
- ESG and carbon footprint reduction initiatives
- **Case Study:** Building resilient and sustainable production operations in a global chemical company.

Training Methodology

This course employs a participatory and hands-on approach to ensure practical learning, including:

- Interactive lectures and presentations.
- Group discussions and brainstorming sessions.
- Hands-on exercises using real-world datasets.
- Role-playing and scenario-based simulations.
- Analysis of case studies to bridge theory and practice.
- Peer-to-peer learning and networking.
- Expert-led Q&A sessions.
- Continuous feedback and personalized guidance.

Register as a group from 3 participants for a Discount

Send us an email: info@fineskilltrainingcenter.org or call *+254769199797*

Certification

Upon successful completion of this training, participants will be issued with a globally- recognized certificate.

Tailor-Made Course

We also offer tailor-made courses based on your needs.

Key Notes

a. The participant must be conversant with English.

b. Upon completion of training the participant will be issued with an Authorized Training Certificate

c. Course duration is flexible and the contents can be modified to fit any number of days.

d. The course fee includes facilitation training materials, 2 coffee breaks, buffet lunch and A Certificate upon successful completion of Training.

e. One-year post-training support Consultation and Coaching provided after the course.

f. Payment should be done at least a week before commence of the training, to Fineskill Training Center account, as indicated in the invoice so as to enable us prepare better for you.

Upcoming Scheduled Sessions

Start Date	End Date	Location	Price
23 Nov 2026	27 Nov 2026	Online	$1,000
23 Nov 2026	27 Nov 2026	Physical	$1,500
23 Nov 2026	27 Nov 2026	Physical	$3,000
23 Nov 2026	27 Nov 2026	Physical	$3,000
23 Nov 2026	27 Nov 2026	Physical	$6,000
23 Nov 2026	27 Nov 2026	Physical	$4,500
23 Nov 2026	27 Nov 2026	Physical	$6,000
23 Nov 2026	27 Nov 2026	Physical	$6,000

Ready to enroll or request a customized program? Book online or contact us:

Register Online Now

Email: info@fineskilltrainingcenter.com | Website: www.fineskilltrainingcenter.com