Master Production Scheduling (MPS) in Manufacturing Training Course

Professional Development Training Course Outline

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

Course Introduction

Master Production Scheduling (MPS) is a critical backbone of modern manufacturing operations, enabling organizations to align demand forecasting, production planning, capacity optimization, and inventory control into a unified execution strategy. In today’s highly competitive and volatile supply chain environment, companies must adopt data-driven production scheduling, lean manufacturing principles, and advanced planning systems (APS) to ensure on-time delivery, reduced lead times, and minimized operational costs. Master Production Scheduling (MPS) in Manufacturing Training Course provides a deep dive into how MPS integrates with ERP systems, demand planning, and shop floor execution, empowering professionals to build resilient and responsive manufacturing systems.

This program is designed to equip participants with practical and strategic capabilities in production planning, capacity leveling, demand-driven scheduling, and constraint-based optimization. With increasing adoption of Industry 4.0, smart factories, AI-driven forecasting, and real-time production analytics, Master Production Scheduling has become essential for achieving operational excellence, supply chain agility, and customer satisfaction. Learners will gain hands-on exposure to real-world scenarios, enabling them to optimize production throughput, reduce bottlenecks, and enhance manufacturing efficiency using best-in-class scheduling techniques.

Programme Curriculum

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Course Duration

5 days

Course Objectives

1. Understand Master Production Scheduling (MPS) framework and lifecycle
2. Apply demand forecasting techniques for production alignment
3. Optimize capacity planning and finite scheduling models
4. Integrate MPS with ERP and APS systems
5. Improve inventory optimization and stock control strategies
6. Enhance lead time reduction and cycle time efficiency
7. Implement lean manufacturing and just-in-time (JIT) principles
8. Develop production leveling (Heijunka) techniques
9. Manage bottleneck identification and constraint resolution
10. Strengthen supply chain synchronization and responsiveness
11. Utilize data analytics for production decision-making
12. Improve shop floor control and real-time monitoring
13. Achieve cost reduction and operational efficiency through scheduling optimization

Target Audience

1. Production Managers
2. Supply Chain Managers
3. Operations Managers
4. Manufacturing Engineers
5. Planning & Scheduling Officers
6. ERP System Analysts
7. Industrial Engineers
8. Logistics and Inventory Control Specialists

Course Modules

Module 1: Fundamentals of Master Production Scheduling

- Overview of MPS in manufacturing systems
- Role of MPS in supply chain integration

- Difference between MPS, MRP, and ERP
- Demand forecasting inputs for MPS
- Case Study: Automotive assembly plant scheduling delays reduction

Module 2: Demand Planning & Forecast Integration

- Statistical forecasting techniques
- Seasonal demand adjustment methods
- Sales & Operations Planning (S&OP) alignment
- Data-driven demand prediction tools
- Case Study: FMCG demand fluctuation stabilization

Module 3: Capacity Planning & Resource Allocation

- Finite vs infinite capacity planning
- Work center balancing techniques
- Resource utilization optimization
- Constraint-based scheduling models
- Case Study: Electronics manufacturing capacity overload solution

Module 4: Inventory Optimization & Control

- Safety stock and reorder point strategies
- ABC/XYZ inventory classification
- Inventory turnover improvement methods
- MPS-driven stock reduction techniques
- Case Study: Retail supply chain excess inventory reduction

Module 5: Lean Manufacturing & Production Flow

- Lean principles in scheduling
- Waste elimination in production flow
- Just-in-Time (JIT) implementation
- Value stream mapping integration
- Case Study: Lean transformation in packaging industry

Module 6: ERP & Advanced Planning Systems Integration

- ERP modules for production planning
- APS system functionalities
- Real-time production tracking
- Data synchronization across systems
- Case Study: ERP-driven scheduling improvement in textile factory

Module 7: Shop Floor Execution & Control

- Production order management
- Real-time monitoring dashboards
- Bottleneck detection techniques
- Downtime reduction strategies
- Case Study: Machine utilization improvement in metal fabrication plant

Module 8: Advanced Analytics & AI in MPS

- Predictive analytics in production scheduling
- AI-based demand forecasting
- Digital twin simulation models
- KPI tracking and performance metrics
- Case Study: Smart factory optimization using AI scheduling tools

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
21 Sep 2026	25 Sep 2026	Online	$1,000
21 Sep 2026	25 Sep 2026	Physical	$1,500
21 Sep 2026	25 Sep 2026	Physical	$0
21 Sep 2026	25 Sep 2026	Physical	$0
21 Sep 2026	25 Sep 2026	Physical	$0
21 Sep 2026	25 Sep 2026	Physical	$0
21 Sep 2026	25 Sep 2026	Physical	$0
21 Sep 2026	25 Sep 2026	Physical	$0

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

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