Advanced Demand Planning in Manufacturing Training Course

Professional Development Training Course Outline

Category	Manufacturing	**Duration**	10 Days
Base Fee	$3,000 USD	**Delivery Mode**	Online / On-site Hybrid

Course Introduction

Advanced Demand Planning in Manufacturing is a strategic, data-driven training program designed to equip professionals with cutting-edge capabilities in forecasting accuracy, supply chain optimization, and production planning excellence. In today's volatile, uncertain, complex, and ambiguous (VUCA) manufacturing environment, organizations must leverage AI-driven demand forecasting, predictive analytics, S&OP integration, and real-time inventory optimization to stay competitive. Advanced Demand Planning in Manufacturing Training Course provides a deep dive into modern demand planning frameworks that align customer demand with manufacturing capacity, procurement cycles, and logistics efficiency.

The training emphasizes the transformation from traditional spreadsheet-based forecasting to intelligent, automated planning ecosystems powered by machine learning demand models, ERP integration, advanced statistical forecasting, and digital supply chain twins. Participants will gain hands-on expertise in reducing forecast error, improving service levels, minimizing stockouts, and optimizing working capital. By integrating global best practices such as Lean Manufacturing, Just-in-Time (JIT), Sales & Operations Planning (S&OP), and Integrated Business Planning (IBP), this course prepares professionals to lead high-performance demand planning functions in modern manufacturing enterprises.

Programme Curriculum

Advanced Demand Planning in Manufacturing Training Course

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Course Duration

10 days

Course Objectives

1. Master AI-powered demand forecasting techniques in manufacturing
2. Apply predictive analytics for supply chain optimization
3. Design robust Sales & Operations Planning (S&OP) frameworks
4. Implement Integrated Business Planning (IBP) systems
5. Reduce forecast error using machine learning models
6. Optimize inventory using multi-echelon inventory optimization (MEIO)
7. Enhance production alignment through demand-supply synchronization
8. Improve agility with real-time demand sensing tools
9. Apply statistical forecasting methods (ARIMA, exponential smoothing)
10. Integrate ERP systems with advanced planning systems (APS)
11. Strengthen decision-making using data-driven demand intelligence
12. Manage volatility with scenario planning and what-if analysis
13. Achieve cost reduction via lean demand planning strategies

Target Audience

1. Demand Planning Managers
2. Supply Chain Analysts
3. Production Planning Engineers
4. Inventory Control Managers
5. Procurement Specialists
6. Operations Managers
7. Manufacturing Executives
8. ERP / Supply Chain System Consultants

Course Modules

Module 1: Fundamentals of Advanced Demand Planning

- Evolution of demand planning systems
- Role in modern manufacturing ecosystems
- Key KPIs: forecast accuracy, bias, MAPE
- Traditional vs AI-driven forecasting

- Demand planning maturity models
- **Case Study:** Transition from Excel-based forecasting to SAP IBP in a FMCG company

Module 2: Statistical Forecasting Techniques

- Moving averages and exponential smoothing
- Seasonal decomposition methods
- ARIMA modeling basics
- Trend analysis techniques
- Error measurement methods
- **Case Study:** Seasonal demand forecasting for automotive spare parts

Module 3: AI & Machine Learning in Demand Planning

- Supervised learning models for forecasting
- Neural networks in demand prediction
- Feature engineering for demand signals
- Model training and validation
- Automation of forecasting cycles
- **Case Study:** AI-based demand forecasting in electronics manufacturing

Module 4: Sales & Operations Planning (S&OP)

- S&OP process framework
- Cross-functional alignment
- Demand vs supply balancing
- Executive decision-making dashboards
- KPI governance
- **Case Study:** S&OP implementation in a global beverage company

Module 5: Integrated Business Planning (IBP)

- IBP vs traditional S&OP
- Financial integration in planning
- Scenario simulation
- Strategic demand alignment
- End-to-end visibility
- **Case Study:** IBP transformation in a pharmaceutical manufacturer

Module 6: Demand Sensing & Real-Time Analytics

- Short-term demand detection
- POS and IoT data integration
- Real-time dashboards
- Signal vs noise analysis
- Agile response systems
- **Case Study:** Retail demand sensing in a consumer goods chain

Module 7: Inventory Optimization Strategies

- Safety stock optimization
- Multi-echelon inventory planning

- Service level optimization
- ABC/XYZ classification
- Stockout prevention techniques
- **Case Study:** Inventory reduction in an automotive OEM

Module 8: Supply Chain Risk & Volatility Management

- Demand volatility analysis
- Risk mitigation strategies
- Scenario-based planning
- Buffer strategies
- Disruption management
- **Case Study:** Managing demand disruption during global semiconductor shortage

Module 9: ERP & APS Integration

- ERP data synchronization
- Advanced Planning Systems (APS)
- Master data management
- System interoperability
- Automation workflows
- **Case Study:** SAP APO integration in industrial manufacturing

Module 10: Forecast Accuracy Improvement Techniques

- Bias correction methods
- Forecast reconciliation
- Collaborative forecasting
- Data cleansing techniques
- Continuous improvement loops
- **Case Study:** Reducing forecast error in textile manufacturing

Module 11: Demand Planning KPIs & Analytics

- KPI framework design
- Dashboard creation
- Data visualization tools
- Root cause analysis
- Performance benchmarking
- **Case Study:** KPI redesign in a global electronics firm

Module 12: Collaborative Planning Across Supply Chain

- Supplier collaboration models
- Demand sharing systems
- CPFR (Collaborative Planning Forecasting Replenishment)
- Cross-functional integration
- Communication frameworks
- **Case Study:** CPFR implementation in retail-manufacturing partnership

Module 13: Lean Demand Planning

- Waste elimination in planning
- Lean forecasting principles
- Continuous improvement (Kaizen)
- Value stream mapping
- Agile planning systems
- **Case Study:** Lean transformation in food manufacturing

Module 14: Scenario Planning & Simulation

- What-if analysis
- Monte Carlo simulation
- Demand shock modeling
- Capacity planning scenarios
- Decision tree analysis
- **Case Study:** Scenario planning in aerospace manufacturing

Module 15: Digital Transformation in Demand Planning

- Industry 4.0 integration
- Digital twins in supply chain
- Cloud-based planning systems
- Automation and RPA
- Future of demand planning
- **Case Study:** Digital twin implementation in smart factory ecosystem

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	04 Dec 2026	Online	$2,000
23 Nov 2026	04 Dec 2026	Physical	$3,000
23 Nov 2026	04 Dec 2026	Physical	$6,000
23 Nov 2026	04 Dec 2026	Physical	$6,000
23 Nov 2026	04 Dec 2026	Physical	$12,000
23 Nov 2026	04 Dec 2026	Physical	$9,000
23 Nov 2026	04 Dec 2026	Physical	$12,000
23 Nov 2026	04 Dec 2026	Physical	$12,000

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

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