Advanced Materials Management and Production Planning Training Course

Ref: #PSC5070

Course Introduction / Overview:

This comprehensive course provides an in-depth exploration of the critical functions of materials management and production planning, two pillars of modern operational excellence. In today's competitive global market, the ability to synchronize material flow with production schedules is paramount for minimizing costs, improving customer satisfaction, and maximizing profitability. This program is designed to equip participants with the advanced techniques and strategic insights needed to master this synergy. Drawing upon foundational principles and contemporary best practices, the curriculum delves into everything from demand forecasting and master scheduling to Material Requirements Planning (MRP) and shop floor control. We will explore concepts championed by pioneers like Joseph Orlicky, whose work revolutionized manufacturing planning, and discuss frameworks presented in influential texts such as "Factory Physics". BIG BEN Training Center has developed this course to bridge the gap between theoretical knowledge and practical application, ensuring that delegates can implement effective inventory control systems, optimize production capacity, and drive continuous improvement within their organizations. Participants will leave with a holistic understanding of how to build a resilient and efficient supply chain core.

Target Audience / This training course is suitable for:

- Production Planners and Schedulers.
- Materials Managers and Controllers.
- Supply Chain and Logistics Professionals.
- Operations Managers and Supervisors.
- Inventory Analysts and Specialists.
- Procurement and Purchasing Managers.
- Manufacturing Engineers.
- ERP System Consultants and Users.
- Warehouse and Distribution Managers.

Target Sectors and Industries:

- Manufacturing and Assembly.
- Automotive and Aerospace.
- Pharmaceuticals and Healthcare.
- Fast-Moving Consumer Goods (FMCG).
- Electronics and High-Tech.
- Food and Beverage Production.
- Governmental bodies and public sector organizations.
- Textiles and Apparel.
- Construction and Engineering.

Target Organizations Departments:

- Supply Chain Management.
- Production and Operations.
- Planning and Scheduling.
- Procurement and Purchasing.
- Logistics and Distribution.
- Warehouse and Inventory Management.
- Quality Assurance and Control.
- Finance and Cost Accounting.

Course Offerings:

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

- Develop accurate demand forecasts to drive production planning.
- Create and manage a robust Master Production Schedule (MPS).
- Master the logic and application of Material Requirements Planning (MRP).
- Implement effective inventory control techniques like ABC analysis and safety stock calculation.
- Conduct capacity requirements planning to balance load and capacity.
- Optimize shop floor activities through effective scheduling and control.
- Apply lean manufacturing and Just-In-Time (JIT) principles to reduce waste.
- Analyze and improve the performance of materials and production systems using key metrics.
- Integrate production planning with broader supply chain strategies.
- Leverage Enterprise Resource Planning (ERP) systems for enhanced control.

Course Methodology:

The training methodology at BIG BEN Training Center is designed to be highly interactive, engaging, and practical, ensuring that participants can translate learned concepts into tangible workplace skills. We move beyond traditional lectures by incorporating a blended learning approach that includes expert-led presentations, dynamic group discussions, and collaborative problem-solving sessions. A significant portion of the course is dedicated to hands-on exercises and simulations that mirror real-world materials management and production planning challenges. Participants will work with detailed case studies from various industries to analyze complex scenarios, evaluate different strategies, and propose data-driven solutions. This immersive approach fosters critical thinking and decision-making abilities. Team-based activities encourage the sharing of diverse experiences and perspectives, enriching the learning environment for all. Continuous feedback is provided by the instructor to guide participants' development and ensure a thorough understanding of advanced topics like MRP logic, capacity planning, and lean implementation. The focus is on practical application, empowering attendees to return to their organizations with the confidence and competence to drive immediate operational improvements.

Course Agenda (Course Units):

Unit One: Foundations of Integrated Production and Materials Management

- Introduction to Operations and Supply Chain Management.
- The Strategic Role of Production and Materials Management.
- Understanding the Production Planning and Control Framework.
- Key Performance Indicators (KPIs) for Operations.
- Exploring Different Manufacturing Environments (MTS, MTO, ATO).
- The Structure of Bills of Materials (BOM).
- Introduction to Enterprise Resource Planning (ERP) Systems.

Unit Two: Demand Management and Master Production Scheduling

- The Role of Forecasting in Production Planning.
- Qualitative and Quantitative Forecasting Techniques.
- Measuring Forecast Accuracy and Error.
- Developing the Aggregate Production Plan (APP).
- Creating the Master Production Schedule (MPS).
- Rough-Cut Capacity Planning (RCCP).
- Managing the MPS and Available-to-Promise (ATP) Logic.

Unit Three: Material Requirements Planning and Inventory Systems

- The Logic and Mechanics of Material Requirements Planning (MRP).
- Inputs to the MRP System (MPS, BOM, Inventory Records).
- MRP Outputs and Reports.
- Lot Sizing Techniques in MRP.
- Managing Engineering Changes and MRP Updates.
- Independent vs. Dependent Demand Inventory Systems.
- Classic Inventory Models (EOQ, ROP).

Unit Four: Detailed Capacity Planning and Shop Floor Control

- Capacity Management Strategies.
- Capacity Requirements Planning (CRP) Process.
- Input/Output Control for Monitoring Capacity.
- Principles of Production Activity Control (PAC).
- Scheduling and Sequencing Operations.
- Theory of Constraints (TOC) and Drum-Buffer-Rope.
- Dispatching Rules and Priority Control.

Unit Five: Advanced Strategies and Continuous Improvement

- Just-In-Time (JIT) and Lean Manufacturing Principles.
- Kanban Systems for Production Control.
- Total Quality Management (TQM) in Operations.
- Distribution Requirements Planning (DRP).
- Integrating Planning Systems Across the Supply Chain.
- The Future of Production Planning with Industry 4.0.
- Developing a Roadmap for Operational Excellence.

FAQ:

Qualifications required for registering to this course?

There are no requirements.

How long is each daily session, and what is the total number of training hours for the course?

This training course spans five days, with daily sessions ranging between 4 to 5 hours, including breaks and interactive activities, bringing the total duration to 20 - 25 training hours.

Something to think about:

How might the principles of the circular economy challenge and reshape traditional linear models of materials planning and inventory management in the coming years?

What unique qualities does this course offer compared to other courses?

This course distinguishes itself by its holistic and integrated approach, treating materials management and production planning not as separate silos but as a deeply interconnected system essential for operational success. While many programs focus narrowly on one aspect, we emphasize the critical synergy between forecasting, master scheduling, material requirements planning, and shop floor execution. The curriculum is built around a strategic framework, moving beyond the mere mechanics of ERP software to cultivate the analytical and decision-making skills needed to design and manage resilient production systems. We place a strong emphasis on practical application through realistic case studies and simulations that challenge participants to solve complex, multi-faceted problems. The content is rigorously updated to reflect contemporary challenges and opportunities, including the impact of lean principles, supply chain volatility, and emerging digital technologies. The course fosters a deeper, more strategic understanding, enabling participants to not only execute plans but to critically evaluate and continuously improve the entire planning and control cycle within their organizations, ensuring long-term competitive advantage.