

Master Planning of Resources (MPR) Curriculum

Version 4.1

Session 1—Master Planning of Resources

The Manufacturing Planning and Control System

- Manufacturing and Service Industry Objectives
- Role of Manufacturing Planning and Control
- Manufacturing Planning Hierarchy
- Role of Planning Software in MPC
- Factors Affecting MPR System Design

Master Planning of Resources

- Direction Setting: Strategic and Business Planning
- Demand Management
- Sales and Operations Planning
- Master Scheduling
- Distribution Planning

Session 2—Forecasting Demand

Demand Forecasting Concepts

- Forecasting Framework
- Managing the Forecast

Forecasting Techniques

- Factors Affecting the Forecast
- Qualitative Forecasting Techniques
- Quantitative Intrinsic Techniques
- Quantitative Casual Techniques
- Collaborative Planning, Forecasting, and Replenishment

Session 3—Demand Management and Customer Service

Evaluating Forecast Performance

- Guidelines for Evaluating Forecasts
- Outcomes of Forecast Evaluation
- Determining Forecast Error
- Standard Deviation

Customer Relationship and Order Management

- Customer Relationship Management (CRM)
- Customer Order Management
- Effective Customer and Internal Communication
- Order Delivery Performance Measurement

Customer Service and Safety Stock

- Purpose of Safety Stock
- Customer Service Levels



- Calculation of Safety Stock
- Customer Service Policy and Performance Targets

Session 4—Distribution Planning

Distribution Network Planning

- Distribution Channel Design Considerations
- Network Configuration
- Transportation and Distribution Center Site Decisions

Distribution Replenishment Planning

- Product Forecasting
- Replenishment Planning Approaches
- Replenishment Planning Linkages to S&OP and Master Scheduling

Measuring Performance

- Distribution System Performance Measures

Session 5—Sales and Operations Planning

S&OP Introduction

- Major Attributes
- S&OP Relationships
- S&OP Fundamentals

Management Considerations

- Guiding the Business
- Roles and Responsibilities
- Key Planning Factors

The S&OP Process

- S&OP Process Outcomes
- Monthly Executive S&OP Process Steps

Developing and Validating the Production Plan

- Production Planning Methods
- Make-to-Stock S&OP Plan
- Developing a Make-to-Stock S&OP Grid
- Financial Evaluation of Level and Chase
- Developing a Make-to-Order S&OP Grid
- Resource Planning

Session 6—S&OP and Master Scheduling

Introduction

- Transition from Sales and Operations Planning
- Master Scheduling Objectives
- Role in Manufacturing Planning and Control
- Maintaining the Master Schedule

Major Influences on Master Scheduling

- Business Environment



Master Scheduling Process

- Introduction
- Maintaining the Stability of MPS

Session 7—Managing the Master Schedule

Management Considerations

- The Balancing Act
- The Role of the Master Scheduler
- The Role of the Senior Executive
- Planning and Coordinating Changes
- Maintaining the Integrity of the Master Schedule

Assemble-to-Order Master Scheduling

- Bills of Material
- Planning Bills of Material
- Two-Level Master Scheduling Demonstration and Problems

Reviewing Capacity Requirements

- Rough-Cut Capacity planning
- RCCP Process
- Possible Solutions
- Overload and Underload
- Revised MPS and RCCP Report

Advanced Planning and Scheduling (APS)

- Approach to Capacity Planning
- APS Process

Measuring Master Scheduling Performance

- Policies and Methods
- Problem Indicators
- Performance Measures

Session 8—Case Studies

Case Studies

- Production Planning Methods
- Master Scheduling in a Make-to-Order Environment
- Master Scheduling in a Make-to-Stock Environment