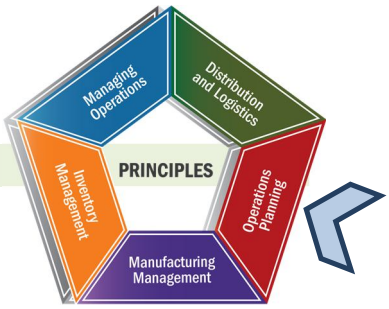

Principles of Operations Planning (POP)

Session 1: Operation Management Foundations

Describe how today's business trends are driving operations management
Define the science of operations management
Identify the decisions made by operations managers
Explain how operations management is important to both manufacturing and service functions
Discuss the role of operations management in the organization
Describe operations management's role in supply chain management
Provide examples of how operations management is a competitive weapon
Identify career opportunities in the field of operations management
Perform an operations planning self-assessment review

Session 2: Planning Foundations

Understand the basics of business planning
Describe the dynamics of business planning
Understand the different levels of planning that occurs with a business
Understand the planning and control process model
Describe the features of a business plan
Understand how the different levels of business planning work with each other
Work with a business planning process model
Develop a business mission/vision
Perform investment planning
Perform profit planning
Perform asset and capital planning
Develop business unit strategies
Describe the components of a planning architecture model

Session 2: Advanced Topics

Generic competitive values
Enterprise investment plan
Profit planning
Asset/capital planning

Session 3: Forecasting

Define the forecasting function
Review of the three levels of forecasting

Define demand
Explore the universal principles of forecast management
Understand forecast design and parameter issues
Detail the forecasting process
Detail the benefits of forecast accuracy
Describe the general forecasting techniques and data sources
Review qualitative, quantitative, and causal forecasting techniques
Discuss why forecasts fail

Session 3: Advanced Topics

Selection of forecasting models
Pyramid forecasting
Deseasonalized forecast
Forecast trend with exponential smoothing (Holt's model)
Forecast trend extrapolation

Session 4: Demand Management

Define demand management
Review the components of demand management
Place demand management in the MPC system
Evaluate forecast performance
Use the measures of forecast error
Calculate forecast error
Determine the MAD and standard deviation of forecast error
Calculate forecast bias and tracking errors
Define customer relationship management
Work with customer order management
Define customer service management
Explore demand management technology tools
Define demand management performance

Session 4: Advanced Topics

Tracking signal
Forecast error exercise
Safety stock calculation
Customer service gap analysis

Session 5: Sales and Operations Planning (S&OP)

Define sales and operations planning (S&OP)
S&OP in the MPC system
S&OP detailed planning process
Determine product families
S&OP planning inputs
S&OP historical input data
Summary of S&OP outputs
Understand the S&OP grid

Work with the make-to-stock (MTS) S&OP grid
Work with the make-to-order (MTO) S&OP grid
Implement the monthly S&OP planning meeting
Define the benefits of S&OP

Session 5: Advanced Topics

Executing a S&OP level strategy
S&OP production resource planning

Session 6: Mid-Term Exam

Session 7: Aggregate Operations Planning

Review the detailed S&OP process
Understand the sales and marketing planning processes
Work with product life cycles and delivery network structures
Calculate a S&OP product family forecast disaggregation
Understand the production planning process
Determine production planning strategies
Calculate the financial impact of the production plan
Define resource requirements planning
Develop capacity and load profiles
Generate a resource requirements plan
Understand the inventory planning process
Calculate a production plan using an inventory target
Develop the distribution plan
Determine transportation, warehouse, and equipment and labor requirements

Session 7: Advanced Topics

Financial decision – workforce costs
Financial decision – inventory costs
Financial decision – total costs

Session 8: Master Scheduling Foundations

Define master scheduling – principles and concepts
Understand the role of master scheduling in the MPC system
Detail the objectives of master scheduling
Understand master scheduling and the manufacturing environment
Work with master scheduling approaches
Detail the inputs to master scheduling
Review the interaction between sales and operations planning (S&OP) and master scheduling
Establish planning bills of material
Understand the master schedule grid
Work with the master schedule grid and demand management
Calculate the projected available balance (PAB) in the master schedule grid
Calculate net requirements in the master schedule grid

Generate MPS orders
Calculate available-to-promise in the master schedule grid
Work with MPS time fences and zones

Session 8: Advanced Topics

Managing the rolling master schedule
Cumulative "look ahead" ATP

Session 9: Master Scheduling Processes

Define the role of the master scheduler
Review the causes of master schedule change
Work with the master scheduling management process
Work with the forecast
Manage order requests
Understand the use of time fences
Understand types of master schedule orders
Work with action messages
Work with safety stock
Discuss capacity planning methods
Define the rough-cut capacity planning process
Calculate the rough-cut capacity plan
Detail the performance elements of a successful master schedule.

Session 9: Advanced Topics

Environmental characteristics
What is advanced planning and scheduling (APS)?
Assemble-to-order (ATO) master scheduling

Session 10: Operations Systems

Explore the importance of information technology
Detail the role of information technology
Analyze the technology strategic triangle
Explore technology organization framework assumptions
Outline operations planning system assumptions
Explore how system technology benefits planning
Define enterprise resources planning
Trace the evolution of ERP systems
Analyze the components of today's ERP system
Compare ERP and "best of breed" software solutions
Detail the requirements for ERP and system thinking
Outline the ERP organizational maturity model
Review ERP and enterprise competitive development
Detail the benefits of applying ERP systems to the management of the business.

Session 11: Final Exam