Principles of Inventory Management (PIM)

Session 1: Operation Management – Foundations

Define the science and practice of operations management (OM)
Answer the question why OM should be studied
Describe how today’s business trends are driving operations management
Discuss the role of operations management in the organization
Define the value-added activities performed by OM
Describe how OM fits into the organization
Describe the functions performed by OM
Describe how OM has changed over the decades
Outline the role of OM and business strategy
Identify how OM contributes to business strategy
Discuss how businesses can compete with OM
Detail the ten strategic decisions of OM
Identify career opportunities in the field of OM
Perform an inventory management knowledge self-assessment

Session 2: Fundamentals of Inventory Management

Define inventory management
Define inventory management objectives
Describe the different classes of inventory
Identify the different levels of inventory management
Review the characteristics of inventory in the supply chain
Detail the strategic inventory management process
Describe the elements of an effective inventory management strategy
Balance demand and supply objectives
Contrast the conflicting objectives of inventory management among marketing/sales, finance, and operations
Understand inventory trade-off decisions
Describe inventory and demand flows
Define supply chain inventory and demand flows
Describe inventory dynamics
Understand how inventory provides value
Determine whether inventory is an asset or a liability
Assess the impact of cash flow and inventory management

Session 2: Advanced Topics
- Trade-off decisions by item class
- Subclasses of inventory
- Item numbering

Session 3: Purpose and Function of Inventory
- Explain why companies carry inventory
- Define the five functions of inventory and describe their use
- Describe the purpose of decoupling inventories
- Detail the components of inventory decision making
- Use a simple formula to estimate inventory throughput and cycle and pipeline inventories
- Define the elements of inventory cost
- Understand and calculate inventory carrying costs
- Define the elements of manufacturing and purchasing costing
- Calculate the impact of stockout costs on the operation
- Discuss how excess and obsolete inventories affect inventory management
- Work with the five basic methods of inventory valuation.

Session 3: Advanced Topics
- Measuring inventory throughput
- Cost of preventing a stockout
- Capacity associated costs
- Estimating inventory values
- Calculating order costs
- Inventory valuation methods

Session 4: Inventory Replenishment Management
- Explain the basic functions of statistical inventory management
- Understand the difference between independent and dependent demand
- Define the theory of inventory replenishment management
- Describe the difference between continuous and periodic inventory review
- Describe the inventory replenishment planning process
- Define the seven inventory replenishment methods
- Work with the order point inventory ordering method
- Calculate safety stock
- Calculate the order point
- Calculate a periodic inventory order method
- Calculate the inventory order quantity
- Calculate the economic order quantity (EOQ)
- Review the inventory planning process
Session 4: Advanced Topics
   Normal distribution diagram
   Characteristics of order point management
   Periodic review exercise
   EOQ exercise

Session 5: Additional Inventory Replenishment Techniques and Inventory Performance
   Work with several advanced inventory management techniques
   Counter uncertainty in supplier delivery times
   Understand and perform planning using time-phased order point (TPOP)
   Define order quantities by item class
   Work with financial statements and inventory
   Calculate relevant inventory turnover ratios
   Define inventory performance management tools
   Understand and work with ABC inventory control
   Establish inventory accuracy tools
   Understand and establish a cycle counting program
   Identify today’s electronic inventory data collection technologies

Session 5: Advanced Topics
   Production noninstantaneous receipt
   Products orders and delivered jointly
   Quantity discount

Session 6: Mid-Term Exam

Session 7: Lean Inventory - Concept and Practice
   Define the concepts of just-in-time (JIT)/lean and how they apply to the management of inventories
   Describe the evolution of the JIT/lean philosophy and techniques
   Define the core principles of JIT/lean
   Describe in detail the three major sources of operations waste
   Describe the lean toolkit of techniques to combat waste
   Differentiate value-added work from waste
   Manage inventory effectively in a JIT/lean environment
   Determine JIT/lean lot-sizes
   Establish a pull system
   Calculate the number and work with kanbans/containers
   Describe the benefits of JIT/lean on all levels of the organization

Session 7: Advanced Topics
   JIT/lean evolution
   Ten cultural and managerial elements of JIT/lean
   Impact of lot size reduction
   Lean transformation roadmap
Session 8: Fundamentals of Purchasing

Define the purchasing function
Identify purchasing as a key business function
Describe the categories of purchasing
Detail the objectives of purchasing
Describe the responsibilities of purchasing
Understand the structure of the purchasing organization
Describe purchasing’s role with other business functions
Understand the difference between centralized and decentralized purchasing
Describe the buyer/planner concept
Manage the make or buy decision
Describe the various methods of purchase order generation
Create an effective purchasing strategy

Session 8: Advanced Topics

Purchasing Classification Exercise
Financial Impact of Purchasing

Session 9: Sourcing Strategies

Define the sourcing process
Understand the difference between tactical and strategic buying
Detail the steps in making the make or buy decision
Develop a cost avoidance analysis
Conduct an effective spend analysis
Distinguish between different types of supplier relationship
Execute a sole or a multiple supplier sourcing strategy
Effectively score capabilities and select the optimal supplier
Work with different supplier pricing alternatives
Engage in effective negotiations with a supplier
Understand the elements of supplier contract formulation
Construct a collaborative program that engages the supplier in product design
Define supplier relationship management (SRM)

Session 9: Advanced Topics

Cost avoidance analysis
Spend analysis documents
Pareto chart of percentage by category
Supplier selection comparison
Purchase quantity discount
Supplier relationship characteristics

Session 10: PO Management and Performance Measurement

Define the purchasing management process
Manage the procurement database
Detail the various purchase order methods
Trace the purchase order flow from requirements identification to purchase order close-out
Determine the timing of purchase order release
Using material requirements planning (MRP), reorder point (ROP), and kanban systems for order release
Establish a vendor managed inventory (VMI) process
Determine inbound transportation factors
Perform receiving and order closeout
Review purchase order status reporting
Review supplier and internal purchase organization performance
Work with international sourcing
Explore the impact of the Internet and computerized technologies on procurement

Session 10: Advanced Topics
  Supplier rating
  Cost of poor quality
  e-SRM services
  e-SRM processing

Session 11: Final Exam