



Principles of Operations Management: Concepts and Applications – Topic Outline

Principles of Distribution and Logistics (PDL)

Session 1: Operations 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 a distribution and logistics self-assessment review

Session 2: Introduction to Distribution and Logistics

- Define distribution management
- Demonstrate the components of the supply and distribution channel
- Detail a channel design tree structure
- Describe the various types of channel intermediaries
- Identify the need for distribution channels
- Detail the roles performed by the distribution function
- Define logistics management
- Describe the functions of logistics management
- Explain the components of logistics operations
- Understand the concept and practice of reverse logistics
- Detail the components of an effective logistics strategy
- Explore the guidelines for creating a logistics strategy
- Understand the role of the logistics function in supply chain management

Advanced Topics

- The organization of logistics
- The distribution sorting process
- Value-added role of logistics
- Reverse logistics financial worksheet

Session 3: Channel Network Design

- Define the activities involved in channel network design
- Explain the reasons for supply and distribution channels
- Detail critical channel network design considerations
- Understand channel network design factors
- Outline levels of channel network dependency
- Work with the channel configuration attribute matrix
- Describe several different channel network design options
- Compare distribution network design option performance
- Deploy a framework for channel network design
- Discuss the micro decisions influencing distribution channel design
- Use the factor-rating method for channel network design
- Use the center-of-gravity method for channel network design
- Detail channel demand and capacity.

Advanced Topics

- Global channel facilities
- Delivery network facilitators
- Location break-even analysis

Session 4: Inventory Management

- Define the inventory management function
- Identify the functions of inventory
- Outline the strategic inventory management process
- Understand the characteristics of inventory in the distribution channel
- Trace channel inventory and demand flows
- Identify the components of inventory replenishment
- Describe replenishment ordering techniques
- Understand the order point model
- Calculate order point safety stock
- Determine the replenishment order quantity
- Identify the components of inventory carrying cost
- Calculate the EOQ
- Work with minimum/maximum inventory controls
- Detail the replenishment planning process

Advance Topics

- The periodic review system
- Normal distribution diagram
- Measuring inventory performance
- Calculation order points with supplier lead time uncertainty

Cycle counting processing

Session 5: Distribution Requirements Planning (DRP)

- Describe distribution channel dependencies
- Detail “Push” system functions
- Detail “Pull” system functions
- Decide what to choose: reorder points or DRP?
- Define distribution requirements planning (DRP)
- Explore time phasing – the heart of DRP
- Understand the DRP planning grid
- Calculate the projected available balance (PAB) and the DRP grid
- Calculate net requirements and the DRP grid
- Review the DRP planned order generation
- Perform PAB and net requirements recalculation
- Explore DRP and the bill of distribution (BOD)
- Outline the DRP planning process
- Perform a full DRP calculation

Advanced Topics

- Fair share allocation
- Using safety stock in DRP
- Using DRP for logistics capacity planning
- Developing a warehouse capacity plan
- Exploring distribution resources planning (DRP II)

Session 6: Mid-Term Exam

Session 7: Warehouse Management

- Define warehouse management
- Detail warehouse functions – material handling, product storage, order management, and information transfer
- Describe the different types of warehouse – private, public, contract, and intransit
- Explore the basic objectives of warehousing
- Review warehousing strategic decision components
- Use of third party logistics (3PL) service providers in warehousing strategy
- Detail the warehouse operational management process
- Discuss the importance of warehouse work standards
- Describe the warehouse receiving flow
- Examine the functions of warehouse stocking activities
- Illustrating the components of successful warehouse inventory transaction management
- Outline the order picking and shipping flow
- Emphasize the importance of warehouse performance measurements

Advanced Topics

- Specialized warehousing services

- Warehouse strategy steps
- Developing warehouse time standards
- Annual physical inventory and cycle counting
- Approaches to measuring logistics performance

Session 8: Packaging and Material Handling

- Define warehouse design and layout objectives
- Determine warehouse size and capacity
- Describe basic warehouse layouts
- Understand warehouse layout development
- Detail warehouse design layout principles
- List the key principles of materials handling
- Classify the types of storage systems
- Outline large-item or large-volume product storage
- Review small-item or low-volume product storage
- Review automated storage systems
- Discuss stocking inventory in warehouse locations
- Describe dock materials handling equipment
- Describe mobile materials handling equipment
- Define the role of packaging and unitization
- List the key drivers of warehouse automation
- Detail the components of warehouse automation

Advanced Topics

- Cube utilization and accessibility
- The cross-docking warehouse
- Advanced dock door management
- Warehouse space calculation
- Shipping containers
- Environmental impact of packaging

Session 9: Transportation Management

- Define transportation management
- Understand the fundamental principles of transportation
- Detail the principles of transportation operations
- Describe transportation participants
- Outline the load transport aspects of transportation services
- Outline the product storage aspects of transportation services
- Explain the relationship of transportation to other business functions
- Classify the modes of transportation: motor railroad, air, water, pipelines, and intermodal
- Describe the types of transportation carriers
- Define the functions and impact on transportation of third-party logistics (3PLs)
- Outline the various forms of logistics outsourcing models
- Detail the challenges facing today's transportation industry

Advanced Topics

- Private fleet management
- Choosing a logistics service provider (LSP)
- Advantages and risks of a logistics service provider (LSP)

Session 10: Transportation Operations

- Describe the principles of transportation operations
- Review the role of transportation administration
- Detail the types of transportation risk
- Outline the components of the transportation management process
- Classify the elements of transportation cost
- Review the detail components of transportation cost
- Understanding transportation rates and pricing
- Explain domestic transportation terms of sale
- Detail the steps in transportation mode selection
- Detail the steps in transportation carrier selection
- Review transportation routing and scheduling functions
- Review transportation documentation and post-shipment processing
- Outline transportation performance management
- Define transportation management technologies

Advanced Topics

- Transportation risk mitigation - methodology
- Transportation rates and pricing
- Transportation rate negotiation
- Transportation contract estimating
- International terms of sale

Session 11: Final Exam