



APICS PRINCIPLES OF OPERATIONS MANAGEMENT TOPIC OUTLINE

CONCEPTS AND APPLICATIONS

About this Topic Outline

This outline details the concepts and applications covered in all five of the APICS Principles of Operations Management courses. Professionals interested in Principles will find this is a helpful reference and may use it to identify the course details and topics for each of the five Principles courses. If you have any questions, please contact APICS Customer Service at service@apics.org.

IV. 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