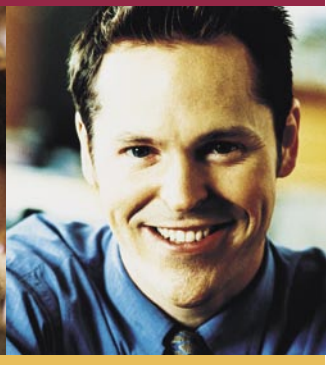
Fundamentals of

Materials and Operations Management



PROGRAM OVERVIEW

APICS
The Association for Operations Management

PROGRAM OVERVIEW INTRODUCTION

Fundamentals of Materials and Operations Management

Fundamentals of Materials and Operations Management (Fundamentals) education offers an exciting classroom-based, instructor-led educational opportunity for individuals new to materials and operations management—or professionals working in positions that interact with this field. Fundamentals introduces essential manufacturing terminology, skills, and principles for more effective planning, inventory control, material requirements planning, and strategic decision making.

Who should participate?

Professionals who are new to materials and operations management or need to understand how their job affects the production and on-time delivery of products to customers. Participants in the Fundamentals program are typically involved in one or more of the following areas: inventory control, planning, manufacturing control, and operations management.

Contact APICS Customer Support at (800) 444-APICS (2742) or (703) 354-8851 to purchase your Fundamentals Instructor Kit and Participant Guides. APICS Chapters must call Customer Support for pricing.

FUNDAMENTALS OF MATERIALS AND OPERATIONS MANAGEMENT

This program is designed for people working in the field of materials and operations management or people working in positions that interact with this field who need to learn the basic concepts, techniques, and terminology.

The course material has been prepared for APICS by professional course writers, with the assistance of subject-matter experts. It is based on a solid body of knowledge that has evolved over the past half-century. Completion of this program will strengthen the participants' knowledge of materials and operations management and will provide knowledge that can be used in the work environment.

These modules are not intended to directly prepare participants to take the APICS professional certification exams for Certified in Production and Inventory Management (CPIM) and Certified in Integrated Resource Management (CIRM). Rather, the Fundamentals program will open the door to entry-level knowledge of materials and operations management—a suitable academic background for those who wish to continue their studies toward CPIM or CIRM.

FUNDAMENTALS OF INVENTORY CONTROL

This course introduces essential vocabulary and skills in identifying and applying the basic principles of inventory management. Basic methods of planning and controlling inventory in manufacturing, institutional, distribution and retail environments are covered. The questions of what to stock are addressed through an examination of current and evolving technologies of inventory management.

FUNDAMENTALS OF PLANNING

This course introduces participants to the principles of effective planning. The course presents the concepts of planning at each level, from strategic to tactical. Participants work together to solve problems, develop plans, build teams, and present solutions.

FUNDAMENTALS OF MANUFACTURING CONTROL

This course deals with priority and capacity management through the use of material requirements planning (MRP), capacity management, capacity requirements planning (CRP), production activity control (PAC), and Just-in-Time (JIT). This course explores the execution of the production plan and master production schedule, reactions to capacity constraints, and maintenance of individual order control.

FUNDAMENTALS OF OPERATIONS MANAGEMENT

This course is concerned with the design of systems to produce goods and services and the operation of those systems. It discusses relationships within the company environment, particularly with marketing and product design. Topics covered include facilities planning, total quality management (TQM), cost analysis, project planning, and operations resource management.

SUPPLEMENTAL REFERENCES FOR FUNDAMENTALS

Fundamentals of Inventory Control
Introduction to Materials Management (Fourth Edition)
J.R. Tony Arnold, CFPIM, CIRM, and Stephen N. Chapman, Ph.D., CFPIM

APICS Dictionary (Tenth Edition)
James F. Cox III, Ph.D., CFPIM, CIRM, and John H. Blackstone Jr., Ph.D., CFPIM

Fundamentals of Manufacturing Control
Introduction to Materials Management (Fourth Edition)
J.R. Tony Arnold, CFPIM, CIRM, and Stephen N. Chapman, CFPIM

APICS Dictionary (Tenth Edition)
James F. Cox III, Ph.D., CFPIM, CIRM, and John H. Blackstone Jr., Ph.D., CFPIM

Fundamentals of Planning
Business Plans for Dummies
Paul Tiffany, Ph.D., and Steven D. Peterson, Ph.D.

Sales and Operations Planning: The How-To Handbook
Thomas F. Wallace

APICS Dictionary (Tenth Edition)
James F. Cox III, Ph.D., CFPIM, CIRM, and John H. Blackstone Jr., Ph.D., CFPIM

Fundamentals of Operations Management
Fundamentals of Operations Management
Mark M. Davis, Nicholas J. Amuilano, and Richard B. Chase

APICS Dictionary (Tenth Edition)
James F. Cox III, Ph.D., CFPIM, CIRM, and John H. Blackstone Jr., Ph.D., CFPIM

General Information

While there are no prerequisites for these courses, APICS recognizes that some formal educational background will enhance the participants' studies. These courses do involve some quantitative content, so knowledge of basic formulae and their manipulation will be an asset.

Participant evaluation includes weekly performance checks of class work, readings, and homework; a mid-term examination; a final examination; and case studies. Participants should be prepared to undertake at least three hours of homework a week—to review session material, prepare for weekly performance checks, and complete assignments and readings.

Course Duration

Each course consists of 36 hours of classroom time: 12 three-hour sessions.

COURSE OUTLINES

Fundamentals of Inventory Control

OBJECTIVE

To impart a fundamental knowledge and understanding of inventory management principles and techniques, providing participants with a greater understanding of their roles and responsibilities in the control of inventory and the impact that inventory can have on a business.

SUMMARY

Participants are introduced to essential vocabulary and skills in identifying and applying the basic principles of inventory management. Basic methods of planning and controlling inventory in manufacturing, institutional, distribution, and retail environments are covered. The questions of what to stock are addressed through an examination of current and evolving technologies of inventory management.

SESSION 1: FUNDAMENTALS of INVENTORY MANAGEMENT

- ❍ Identify the objectives of an organization and explain why these objectives are in conflict.
- ❍ Identify the purposes of inventory.
- ❍ Define inventory.
- ❍ Explain why businesses try to manage inventory.
- ❍ Define inventory turnover ratio.
- ❍ Define last in, first out (LIFO), first in, first out (FIFO), weighted average, and standard cost.

SESSION 2: INVENTORY FUNCTIONS

- ❍ Identify the purposes of inventory.
- ❍ Define the five functions of inventory and describe where they would be used.
- ❍ Identify the classes of inventory and describe the characteristics of each according to its condition during processing.
- ❍ Discuss how and where classes of inventory are used.
- ❍ Outline inventory problems common to many organizations.
- ❍ Discuss how excess and obsolete inventories affect the operation.
- ❍ Identify, define, and calculate the costs of inventory, focusing on carrying and ordering costs.
- ❍ Explain the purpose of, use of, and steps involved in ABC analysis, using examples to demonstrate.

SESSION 3: ORDER QUANTITIES

- ❍ Define and recognize a stockkeeping unit (SKU).
- ❍ Define and identify items having dependent and independent demand.
- ❍ Explain three basic lot-sizing methods for determining order quantity; apply these methods in practical examples.
- ❍ Explain the concepts underlying the economic order quantity (EOQ) principles.
- ❍ Review problem-solving, using EOQ calculations.
- ❍ Explain the effects and benefits of period order quantity (POQ) in association with EOQ.
- ❍ Explain why and how practical considerations may affect the order quantity.
- ❍ State and demonstrate the effect on EOQ of changing the variables within the total cost equation.
- ❍ Develop the concept of order point.

SESSION 4: PERPETUAL INVENTORY SYSTEMS

- ❍ Distinguish between perpetual and periodic inventory systems.
- ❍ Develop the min-max system.
- ❍ Develop the two-bin system.
- ❍ Develop the kanban concept.
- ❍ Demonstrate examples of min-max, two-bin, and kanban systems.
- ❍ Discuss safety stock as it pertains to perpetual inventory systems.
- ❍ Determine mean absolute deviation (MAD).
- ❍ Apply MAD and safety factor to determine safety stock.
- ❍ Discuss and determine service levels.
- ❍ Introduce practical applications (problem solving).

SESSION 5: PERIODIC INVENTORY SYSTEMS

- ❍ Develop the characteristics and application of a periodic review system.
- ❍ Discuss safety stock as it pertains to periodic inventory systems.
- ❍ Develop a target inventory level.
- ❍ Develop a time-phased order point (TPOP).
- ❍ Review TPOP examples.
- ❍ Discuss replenishment timing (dependent demand).
- ❍ Introduce material requirements planning (MRP).
- ❍ Review practical MRP applications.

SESSION 6: FORECASTING

- ❍ Explain why an organization requires a forecast.
- ❍ Identify what should be forecast and who in the organization should do the forecasting.
- ❍ State the common characteristics of forecasts.
- ❍ Discuss trends, seasonality, and random variation.
- ❍ Develop simple product forecasts using trends and seasonality.
- ❍ Discuss the effects of random variation on forecasts.
- ❍ Review the difference between independent and dependent demand.
- ❍ Discuss qualitative and quantitative forecasting techniques.
- ❍ Discuss extrinsic and intrinsic information sources.
- ❍ Using extrinsic and/or intrinsic information, develop simple forecasts.

SESSION 7: MIDTERM EXAMINATION and CASE STUDY PRESENTATION

- ❍ Complete the examination (duration: one hour).
- ❍ Present the case study.

SESSION 8: WAREHOUSING MANAGEMENT and DISTRIBUTION REQUIREMENTS PLANNING

- ❍ Review midterm examination.
- ❍ Identify the kinds and roles of warehousing.
- ❍ Explain the objectives of warehousing management and operations that must be performed.
- ❍ Explain the trade-off between warehousing and transportation costs as it relates to customer service levels versus lowest total cost.
- ❍ Perform calculations required to replenish inventory, using distribution requirements planning (DRP).
- ❍ Explain the elements needed for good physical control and security.
- ❍ Discuss cube utilization and accessibility.

SESSION 9:
INVENTORY RECORD ACCURACY, SUPPLY CHAIN MANAGEMENT, AGGREGATE INVENTORY, and PURCHASING

- ❍ Review inventory record accuracy.
  - Explain the need for and methods of maintaining inventory record accuracy.
  - Explain the concepts of auditing inventory records to maintain inventory record accuracy.
  - Introduce the concepts of automatic and electronic data collection.
- ❍ Outline supply chain management.
  - Discuss the latest concepts of supply chain management.
- ❍ Review aggregate inventory management.
  - Determine the appropriate level of aggregate inventory.
- ❍ Discuss purchasing.
  - Define purchasing and outline purchasing objectives.
  - Outline the purchasing cycle, including receiving and accounts payable.
  - Describe how to establish specifications.
  - Outline how suppliers are selected.
  - Explain the process and importance of vendor partnering.

SESSION 10:
JUST-in-TIME (JIT) and TOTAL QUALITY MANAGEMENT (TQM)—TRENDS in INVENTORY MANAGEMENT

- ❍ Explain the need for waste elimination and the meaning of value.
- ❍ Explain the process of continuous improvement.
- ❍ Explain the concepts of people empowerment and team dynamics.
- ❍ Discuss the impacts of JIT and TQM on inventories, using practical examples.
- ❍ Discuss the ISO 9000 series of standards and its effects on inventory.
- ❍ Describe the implications of changing technologies—such as electronic data interchange (EDI), computer-integrated manufacturing (CIM), focused factories, and quick response—as they apply to inventory management today and in the future.

SESSION 11: CASE STUDY and FINAL EXAMINATION REVIEW

- ❍ Present the case study.
- ❍ Complete a review for the final examination.

SESSION 12: FINAL EXAMINATION

- ❍ Complete the examination (duration: two hours).

INSTRUCTOR KIT
Stock #01801

$725.00 nonmember
$471.25 APICS member

PARTICIPANT WORKBOOK
Stock #01802

$90.00 nonmember
$58.50 APICS member

The Instructor Kit includes an instructor guide with transparency masters and a PowerPoint CD-ROM. The contents of the participant workbook are included in the instructor guide.

Fundamentals of Planning

OBJECTIVES

To impart a fundamental knowledge and understanding of basic planning principles and techniques that are used at each level in the planning process. To provide practical examples and exercises, giving participants an opportunity to improve their planning, teamwork, and presentation skills.

SUMMARY

This course introduces participants to the principles of effective planning. The course presents the concepts of planning at each level, from strategic to tactical. Participants work together to solve problems, develop plans, build teams, and present solutions. Through this course, they learn the essential ingredients of effective planning and have an opportunity to practice and enhance their own planning skills.

SESSION 1: PLANNING FOUNDATIONS (I)

- ❍ Identify the need for planning.
- ❍ Describe what is included in resource management.
- ❍ Describe the hierarchy of planning.
- ❍ Identify basic business functions.

SESSION 2: PLANNING FOUNDATIONS (II)

- ❍ Identify who/what a customer is.
- ❍ Describe the supply chain.
- ❍ Develop the lead-time concept.
- ❍ Introduce the concept of demand management.
- ❍ Understand the skills required for effective teamwork.

SESSION 3: LONG-RANGE PLANNING

- ❍ Understand the basics of strategic planning.
- ❍ Facilitate team development of strategic and business plans.
- ❍ Develop the basic concepts of business planning.

SESSION 4: FORECASTING

- ❍ Develop forecasting techniques.

SESSION 5: SALES and OPERATIONS PLANNING

- ❍ Develop the basics of sales and operations planning.
- ❍ Identify how the theory of constraints affects sales and operations planning.
- ❍ Present the case study.

SESSION 6: CONTROLLING THE SALES and OPERATIONS PLAN

- ❍ Present the case study.

SESSION 7: MIDTERM EXAMINATION and MAKING EFFECTIVE PRESENTATIONS

- ❍ Complete the examination (duration: one hour).
- ❍ Review basic skills required for making effective presentations.
- ❍ Present the case study.

SESSION 8: MASTER SCHEDULING (I)

- ❍ Identify the components necessary to develop a master production schedule (MPS).
- ❍ Describe and develop the master schedule (MS).

SESSION 9: MASTER SCHEDULING (II)

- ❍ Describe what is included in an MS, by operation type.
- ❍ Develop the concept of available-to-promise.
- ❍ Identify the master scheduler's functions.
- ❍ Develop MPS hedging strategies.
- ❍ Describe how the MPS is rolled into the next time period.

SESSION 10: MASTER SCHEDULING (III)

- ❍ Describe the costs of poor planning.
- ❍ Develop the MPS replanning process/cycle.
- ❍ Describe the role of the MPS in reducing MRP system nervousness.
- ❍ Describe the process of level loading and its benefits.
- ❍ Describe how to control the MPS (closing the loop).
- ❍ Outline ways to determine when the MPS is right.
- ❍ Define the various methods of measuring the MPS.
- ❍ Present the case study.

SESSION 11: FUTURE PLANNING TOPICS

- ❍ Identify and discuss emerging topics in planning.

SESSION 12: FINAL EXAMINATION

- ❍ Complete the examination (duration: two hours).

INSTRUCTOR KIT
Stock #01803

$725.00 nonmember
$471.25 APICS member

PARTICIPANT WORKBOOK
Stock #01804

$90.00 nonmember
$58.50 APICS member

The Instructor Kit includes an instructor guide with transparency masters and a PowerPoint CD-ROM. The contents of the participant workbook are included in the instructor guide.

Fundamentals of Manufacturing Control

OBJECTIVE

To impart a fundamental knowledge and understanding of priority and capacity management.

SUMMARY

This course deals with priority and capacity management through the use of material requirements planning (MRP), capacity management, capacity requirements planning (CRP), production activity control (PAC), and Just-in-Time (JIT). This course explores the execution of the production plan and master production schedule, reactions to capacity constraints, and maintenance of individual order control.

SESSION 1: INTRODUCTION to MATERIAL REQUIREMENTS PLANNING and PRODUCTION ACTIVITY CONTROL

- Review manufacturing objectives and requirements.
- Describe the differences among the five planning levels in a manufacturing planning and control system.
- Review the role of MRP and PAC in the planning hierarchy.
- Illustrate what is meant by closing the loop and by MRP II.
- Describe the nature of demand.
- Explain the concept of MRP.
- Identify the prerequisites and assumptions for using MRP.
- Illustrate why companies use the informal system.
- Identify the benefits of using a formal system.

SESSION 2: BILLS of MATERIAL

- Define a bill of material.
- Describe the various uses of bills of material and their different forms.
- Describe various bills of material.
- Explain the use of pegging and where-used reports.
- Explain the need for accuracy in bills.
- Illustrate engineering change and effectivity dates.
- Review the purpose and content of item master files and product structure files.

SESSION 3: MRP BASICS

- Understand time phasing and its benefits.
- Given the planned order receipts, bill of material, and lead times, calculate the planned order releases by offsetting and exploding.
- Given appropriate data, calculate gross and net requirements, scheduled receipts, planned orders, and projected available balance.
- Understand how planned orders of the parent generate gross requirements for the component.
- Explain how planned orders become scheduled receipts.
- Given appropriate data, calculate the material requirements plan for a multilevel bill.

SESSION 4: MANAGING with MATERIAL REQUIREMENTS PLANNING AND CLOSING the LOOP

- ❍ Review the purpose and process of low-level coding; apply low-level coding to a simple product.
- ❍ Describe the process of using low-level codes with multiple bills of material; given two simple bills, develop a material requirements plan.
- ❍ Discuss the use of safety stock and safety lead time in MRP.
- ❍ Explain what effect quality control requirements may have on lot sizes and safety stocks.
- ❍ Understand the responsibilities of a materials planner; replan after a change in input data.

SESSION 5: ADVANCED MRP TECHNIQUES

- ❍ Identify lot-size rules and modifiers.
- ❍ Apply EOQ logic to determine order quantities in an MRP environment.
- ❍ Apply POQ logic to determine order quantities in an MRP environment.
- ❍ Explain the basic steps and prerequisites for system implementation.
- ❍ Identify the key factors in successful system selection and implementation.
- ❍ Introduce a large problem to wrap up the work done on MRP.
- ❍ Present the case study

SESSION 6: INTRODUCTION to CAPACITY MANAGEMENT

- ❍ Define capacity management and understand its relationship to the priority plan.
- ❍ Describe the difference between available capacity and required capacity.
- ❍ Given appropriate data, calculate available capacity (capability).

SESSION 7: MIDTERM EXAMINATION AND CAPACITY MANAGEMENT

- ❍ Complete the examination (duration: one hour).
- ❍ Illustrate machine loading and how to use it.
- ❍ Define CRP and describe its inputs.
- ❍ Given appropriate data, calculate a backward schedule to determine the required capacity at a work center.
- ❍ Given appropriate data, calculate a load profile for a work center.
- ❍ Through a simple CRP example, discuss the effect that constraining resources have on MRP.

SESSION 8: PRODUCTION ACTIVITY CONTROL (PAC) (I)

- ❍ Define the purpose and activities of PAC.
- ❍ Identify the data requirements of PAC.
- ❍ Review the concept of scheduling and the data needed for operation scheduling.
- ❍ Describe the four basic techniques of scheduling; given simple data, calculate a backward schedule.
- ❍ Discuss the use of operation overlapping.
- ❍ Discuss the use of operation splitting.
- ❍ Understand the difference between scheduling in intermittent manufacturing and continuous-flow manufacturing.

SESSION 9: PAC (II)

- Discuss the scheduling of bottlenecks; briefly touch on the theory of constraints.
- Review the importance of controlling queue and the principle of input/output control; given appropriate data, develop an input/output report.
- Explain the need for meeting schedules and the meaning of priority control.
- Review various priority dispatching rules; given appropriate data, calculate a sequence of orders using first come, first served (FCFS), earliest due date (EDD), earliest operation date (EDD), shortest processing time (SPT), and critical ratio (CR)
- Discuss the concept and purpose of control and feedback.
- Review the principles of data collection and monitoring.
- Discuss the purpose and characteristics of good performance measurements.

SESSION 10: JUST-in-TIME (JIT) in MANUFACTURING

- Explain the JIT philosophy, including the concept of waste and its causes.
- Describe the environment that can be used to support JIT.
- Discuss the philosophy of group technology and its application to cellular manufacturing.
- Provide an example of the use of kanban.
- Explain how forecasting, production planning, MPS, MRP, and inventory management are affected in a JIT environment
- Review the first half of the course.
- Begin the case study.

SESSION 11: CASE STUDY AND COURSE REVIEW

- Review the case study.
- Review the second half of the course.
- Prepare for the final examination.

SESSION 12: FINAL EXAMINATION

- Complete the examination (duration: two hours).

INSTRUCTOR KIT
Stock #01805

$725.00 nonmember
$471.25 APICS member

PARTICIPANT WORKBOOK
Stock #01806

$90.00 nonmember
$58.50 APICS member

The Instructor Kit includes an instructor guide with transparency masters and a PowerPoint CD-ROM.
The contents of the participant workbook are included in the instructor guide.

Fundamentals of Operations Management

OBJECTIVE

To impart a fundamental knowledge and understanding of operations resource management and the factors involved in designing and operating a production process.

SUMMARY

This course is concerned with the design of systems to produce goods and services and the operation of those systems. It discusses relationships within the company environment, particularly with ordering and distribution systems. Topics covered include cost analysis, project planning, facilities planning, total quality management (TQM), and operations resource management.

SESSION 1: OPERATIONS MANAGEMENT OVERVIEW

- Describe why organizations exist, the types of organizations, their ownership and purpose.
- Explain how operations management impacts the success of a business.
- Show the broad relevance of operations management within the different organizations.
- Identify why organizations use performance measures and have goals.
- Introduce the concept of a customer who has a need.
- Describe the types of product that can be developed to meet the customer's need.

SESSION 2: TRANSFORMING CUSTOMER NEEDS

- Describe how a customer's need is turned into a product or service.
- Recognize ways to evaluate new product opportunities.
- Perform simple investment decision evaluations.
- Define research and development and the product design process.
- Identify the techniques of quality function deployment.
- Explain the concepts of project planning and project management.
- Demonstrate project management planning skills and how to apply project planning techniques.

SESSION 3: DESIGN AND SELECTION OF PROCESSES

- Describe project management tools and techniques.
- Explain how a product or service is turned into a process.
- Describe processes by the type of transformation performed.
- Identify the criteria for selecting a process.
- Describe the different types of process equipment.

SESSION 4: DESIGN AND SELECTION OF PROCESSES (CONTINUED)

- Identify and demonstrate selection criteria for product/process mix.
- Describe the benefits of concurrent engineering.
- Describe the criteria used for make versus buy decisions.
- Given basic data, prepare and present a project management case.

SESSION 5: FACILITY SELECTION AND LAYOUT

- Explain the needs of facility selection, layout and product flow.
- Identify the criteria for site selection and, using the criteria developed, select a site.
- Develop the criteria for the physical arrangement of resources.
- Perform a simple layout exercise for a process layout environment.
- Develop criteria for equipment layout.
- Describe the ergonomic considerations for equipment layout.

SESSION 6: FACILITY SELECTION AND LAYOUT (CONTINUED)

- Describe the concept of work and the use of time standards.
- Perform simple line balancing for an assembly line operation.
- Discuss the concept of bottleneck management.

SESSION 7: MIDTERM EXAMINATION AND ORDERING SYSTEMS

- Complete the examination.
- Explain the basic concepts of ordering systems and their relationship to operations management.
- Describe the basic process of order processing.
- Discuss the benefits of improved visibility of the customer's MPS on order delivery performance.
- Explain the characteristics and benefits of vendor-managed inventory.
- Discuss the basic concepts of a distribution delivery system.
- Describe the role of distribution systems in the sales order fulfillment.

SESSION 8: CASE STUDY AND DISTRIBUTION SYSTEMS

- Explain the basic concepts of a distribution system.
- Describe how goods and services reach the end customer.
- Identify the components of a distribution system.
- Describe the different warehousing functions.
- Discuss the role of materials handling in the warehouse operation.
- Identify the role of packaging and unitization in distribution and delivery systems.
- Identify the modes of transportation.
- Discuss the issues involved in international transportation.

SESSION 9: PROCESS IMPROVEMENT AND OPTIMIZATION

- Discuss product and process improvement and optimization.
- Describe the need for product/process change.
- Discuss measurement and evaluation tools for process improvement.
- Demonstrate the use of Pareto analysis and cause and effect diagrams for process improvement.
- Discuss project management feedback tools.
- Identify the elements of Total Quality Management.

SESSION 10: TQM AND THE SUPPLY CHAIN

- ❍ Apply the concepts of total quality management to the supply chain.
- ❍ Identify how JIT aligns with the concept of TQM.
- ❍ Understand the concepts of JIT and its links to order fulfillment.
- ❍ Define the roles of management and employees in a culture of employee involvement.
- ❍ Identify the principles of preventive maintenance.
- ❍ Explain the division of employee responsibilities with Total Productive Maintenance.

SESSION 11: ORGANIZATIONAL IMPROVEMENT AND PERFORMANCE MEASURES

- ❍ Discuss organizational performance improvement from an external perspective.
- ❍ Understand the opportunities provided by business-to-business use of eCommerce.
- ❍ Describe the benefits of qualified suppliers.
- ❍ Discuss vendor validation approaches.
- ❍ Discuss some of the various certification programs available.
- ❍ Explain ISO 9000 registration.
- ❍ Describe measures of performance throughout the supply chain.

SESSION 12: FINAL EXAMINATION

- ❍ Complete the examination.

INSTRUCTOR KIT
Stock #01807

$725.00 nonmember
$520.00 APICS member

PARTICIPANT WORKBOOK
Stock #01808

$90.00 nonmember
$58.50 APICS member

The Instructor Kit includes an instructor guide with transparency masters and a PowerPoint CD-ROM. The contents of the participant workbook are included in the instructor guide.

The APICS Advantage

APICS—The Educational Society for Resource Management is an international not-for-profit educational organization with a worldwide reputation for achieving the highest standards in educational programs and professional certification. APICS is a recognized business education leader, providing knowledge and expertise for manufacturing and service industries across the entire supply chain. This includes such areas as materials management, information services, purchasing, and quality assurance.

Since 1957, APICS has offered a full range of cutting-edge programs and materials on the latest operations management concepts and techniques. APICS led the way in establishing business breakthroughs such as material requirements
planning (MRP), Just-in-Time delivery, and the introduction of numerous dynamic business philosophies affecting all areas of operations management. When business practices evolved to cross-functional, team-based practice, APICS was there to deliver enterprisewide management education techniques.

Educational materials are developed under the direction of management and education experts and are available on local, regional, and national levels. APICS offers a wide range of cost-effective, results-driven educational options, including programs, publications, and professional certification in conjunction with more than 270 chapters in North America and around the world. Additionally, APICS meetings and educational seminars offer participants the opportunity to interact with their peers, learning from the experiences of others in similar professional environments.

The APICS Certified in Production and Inventory Management (CPIM) professional designation is an internationally recognized standard by which companies gauge individual knowledge and understanding of production and inventory control concepts and methods. APICS administers more than 35,000 CPIM exams around the world each year.

Answering the need for the formation of a more cross-functional, integrated workforce, APICS developed the Certified in Integrated Resource Management (CIRM) program. In conjunction with the CIRM program, APICS offers a variety of educational programs and services that provide information regarding the interdependencies of all business disciplines.

APICS has earned the respect and reliance of more than 65,000 individuals as a primary source for management education products and services. For more information about APICS products or services or to become a member, call APICS Customer Support at (800) 444-APICS (2742) or (703) 354-8851.

5301 Shawnee Road
Alexandria, VA 22312-2317
USA

P 703.354.8851
TF 800.444.2742
F 703.354.8106
www.apics.org

Stock #04091

Advancing Productivity, Innovation, and Competitive Success