

# APICS—The Educational Society for Resource Management

**Review Dates:** April 2001

**Effective Dates:** See specific examinations.

**Organization Description:** Organized in 1957, APICS—The Educational Society for Resource Management (officially, the American Production and Inventory Control Society) supplies professionals with the right tool for the job—in this case, a solid educational program. APICS offers its nearly 70,000 members and nonmembers a full range of courses, from basic and introductory materials and programs to comprehensive educational conferences addressing total integrated manufacturing. These educational programs, courses, and materials are developed under the direction of top professionals in their respective fields—experts who understand manufacturing professionals' needs and have the solutions necessary to achieve total manufacturing performance.

Today, the society's activities and offerings include: programs delivered through the regular meetings of more than 270 local chapters and 14 regions throughout the United States, Canada, and Mexico; workshops, seminars, and conferences dealing with such cutting-edge topics as supply chain management and integrated resource management; development of educational materials and programs for use as in-house training programs; specific industry groups focusing on specialized industries or cutting across industry and organizational lines to share common interests in areas such as repetitive manufacturing and process industries; a computerized Industrial Inquiry Service giving immediate access to current information in a variety of areas; the APICS Online Bookstore, which includes timely professional literature such as periodicals, conference proceedings, and an educational materials catalog of more than 800 titles; the monthly trade magazine, *APICS—The Performance Advantage*; the APICS Training Center for Manufacturing Excellence, a national center for APICS training programs, seminars, and meetings; and a continuing commitment to work with colleges and universities to develop and improve programs in resource manage-

ment, including supplying texts and other materials for classroom use.

To fulfill its mission of educational and professional development, APICS explores and develops theories, systems, and philosophies to increase productivity while maintaining and improving quality. APICS established production and inventory management as a recognized profession by forming the Curricula and Certification Council (C&C Council) to define the body of knowledge and develop a voluntary certification program, Certified in Production and Inventory Management (CPIM). The objectives of the program are to recognize individuals who demonstrate a thorough understanding of production and inventory management (P&IM) principles and to raise the professional standards of people working in the P&IM fields.

The C&C Council defined the following five examination modules for CPIM: Basics of Supply Chain Management, Master Planning of Resources, Detailed Scheduling and Planning, Execution and Control of Operations, and Strategic Management of Resources. A candidate must pass all five examinations to receive the CPIM designation.

Seeing the need for broad-based knowledge of the interrelationships of business functions, APICS and the C&C Council developed a second certification program, Certified in Integrated Resource Management (CIRM). The objectives of the program are to transform professionals from functional specialists to organization leaders, to develop an understanding of multiple business functions, and to help people from varied disciplines work together to establish and achieve common goals.

The C&C Council defined the following five examination modules for CIRM: Enterprise Concepts and Fundamentals, Identifying and Creating Demand, Designing Products and Processes, Delivering Products and Services, and Integrated Enterprise Management. A candidate must pass the first four examinations to be eligible to take the Integrated Enterprise Management examination. A candidate must pass all five examinations to receive the CIRM designation.

**Organization Contact:** APICS Customer Service, 5301 Shawnee Road, Alexandria, VA 22312-2317, (703) 354-8851, Fax: (703) 354-8794, [www.apics.org](http://www.apics.org).

**Source of Official Student Records:** APICS Customer Service, 5301 Shawnee

Road, Alexandria, VA 22312-2317, (703) 354-8851, Fax: (703) 354-8794, [www.apics.org](http://www.apics.org), or contact the College Credit Recommendation Service, One Dupont Circle NW, Suite 250, Washington, DC 20036-1193, e-mail: [credit@ace.nche.edu](mailto:credit@ace.nche.edu).

**How Examination Results Are Reported:** The examinations are administered for APICS by Assessment Systems, Inc. (ASI). ASI provides technical advice on test development and administers, scores, and interprets the test results. Before completing the final scoring of the test, ASI performs an analysis to determine the performance of each question in the test and verifies the scoring key. If they detect any errors or ambiguities, they rescore the test to eliminate such factors from consideration in the development of final scores. The scores determine those persons qualified to be recognized as Certified in Production and Inventory Management or Certified in Integrated Resource Management.

Under the guidance of the C&C Council's volunteer experts, APICS-certified volunteer members develop test questions across the country. Each test question goes through a series of reviews by the committee content experts, who ultimately determine whether a test question is to be retained in the examination item pool or is to be reworked or rejected. The life cycle of each examination is approximately five years before a revised test specification is developed. Each examination has at least three different forms, which encourages the candidate to study to the body of knowledge, not to the examination.

The examinations are offered via computer-based testing and paper and pencil. The CPIM examinations are available throughout the year. The CIRM exams are offered three times a year in four-week windows. APICS Headquarters maintains all candidate scores in a secured, confidential automated file. A certified individual or a candidate for certification may obtain a transcript of scores from APICS Headquarters. All test scoring/grading is reported to APICS, 5301 Shawnee Road, Alexandria, VA 22312-2317.

**Summary of the ACE Review:** The five CPIM examinations and the five CIRM examinations were found worthy of college-level credit recommendations.

**Content Validity:** Topics are well structured, current, and clearly presented, with

emphasis placed on critical issues without ambiguity or bias and in the body of knowledge found in many colleges and universities. The five CPIM examinations were found to contain material that: explores the basic concepts in managing the flow of materials in a supply chain; explores processes used to develop sales and operations plans; identifies and assesses internal and external demand and forecasting requirements; examines the various techniques for material and capacity scheduling; explores the areas of prioritizing and sequencing work, executing work plans and implementing controls, reporting activity results, and providing feedback on performance; and examines the relationship of existing and emerging processes and technologies to manufacturing strategy and supply chain-related functions. The five CIRM examinations contained material that examines: an understanding of the strategy and role of the value-driven enterprise, its integrated organizational functions, and the four basic support areas of quality, human resources, finance and accounting, and information systems; the strategies and tactics that identify, define, and quantify customer wants and needs, and translate those into requirements for value-added products and services to be delivered by an organization; methods used to convert a market need or innovation into a product, process, or service that meets the expectations of both the enterprise and the customer; the systems, approaches, and strategies used by an enterprise to make the transition between concept and product and between customer expectation and product delivery; and the business strategies, aids in assessing strategic decisions, management practices, and effects of new technologies that enable a greater understanding of the importance of the team perspective in today's organization.

**Technical Adequacy:** The domains to be measured appear to be adequate and clearly defined. Items are developed and reviewed by an external group of content expert specialists. Items are re-reviewed after preliminary and final analysis, and appropriate procedures are followed. Procedures for test reliability meet industry standards. In addition, item bias is unlikely due to the technical nature of the test. However, data are collected by gender, ethnicity, and educational background, which could be analyzed to identify any potential bias problems.

Most items tend to discriminate fairly well between high and low performers. One aspect of the tests, especially with the CIRM modules, is the overemphasis on “logic” formatted items (use of Roman numerals, I & II, I, III, & IV, etc.). Four of the five CIRM tests reviewed contained more than 30 percent logic items, when industry standards usually recommend 10 percent or less.

### **CIRM—Enterprise Concepts and Fundamentals**

**Dates:** April 1991–Present

**Credit Recommendation:** In the lower division baccalaureate/associate or upper division baccalaureate degree level, 3 semester hours in Inventory Management or Logistics (4/01). [NOTE: In order for credit to be awarded, the following examinations must be taken and passed: Enterprise Concepts and Fundamentals, and Identifying and Creating Demand.]

**Description:** This 3-hour, 125-item examination addresses the strategies and roles of the cross-functional enterprise, the management concepts of organizational design and structure, and the basic business process.

**Skills Measured** (Examination by Content Area):

**Strategic Fundamentals**—the value-driven enterprise, the nature of the enterprise, vision and mission, strategic goals and objectives, core competencies, the value-added enterprise, planning, and measurement of success

**Management Concepts**—organizational design factors, organizational structures, and managerial functions

**Business Processes**—identifying and creating demand, designing products and processes, and delivering products and services

**Support Functions**—quality, human resources, finance and accounting, and information systems

### **CIRM—Identifying and Creating Demand**

**Dates:** April 1991–Present

**Credit Recommendation:** In the lower division baccalaureate/associate or upper division baccalaureate degree category, 3 semester hours in Inventory Management or Logistics (4/01). [NOTE: In order for credit to be awarded, the following examinations must be taken and passed: Enterprise Concepts and Fundamentals, and Identifying and Creating Demand.]

**Description:** This 3-hour, 125-item examination covers the strategies and tactics that identify, define, and quantify customer wants and needs, and teaches students how to translate these strategies and tactics into requirements for value-added products and services that an organization can deliver.

**Skills Measured** (Examination by Content Area):

**Business planning and customer demand**—environment, competition, customers, and business planning

**Marketing**—market analysis, setting strategy and the market plan, marketing the organization, and executing the market plan

**Sales**—sales strategy, sales forecasting, sales relationship management, and sales process

**Customer ordering and service**—order entry, order status information, sales order changes, and electronic commerce

**Performance measurement**—enterprise level, marketing, and sales

### **CIRM—Designing Products and Processes**

**Dates:** April 1991–Present

**Credit Recommendation:** In the upper division baccalaureate degree category, 3 semester hours in Product and Process Design, Manufacturing Processes, or Operations Management (4/01). [NOTE: In order for credit to be awarded, the following examinations must be taken and passed: Designing Products and Processes, and Delivering Products and Services.]

**Description:** This 3-hour, 125-item examination covers how to convert market need or innovation into a product, process, or service that meets the expectations of both the enterprise and the customer.

**Skills Measured** (Examination by Content Area):

**Comprehension and translation of requirements**—enterprise strategy and mission, product and service strategy, customer requirements and perception of value, competitive factors, and external considerations

**Work structure**—planning and implementing a design project—organization, resources, and design activity outputs

**Performance assessment of the design process**—measurement issues, criteria, and data; process testing; and verification

**Continuous improvement and innovation**—reengineering, concurrent engineering,

continuous improvement, communication technologies, customer involvement, design simulation, rapid prototyping, environmentally sensitive engineering, and mass customization

### **CIRM—Delivering Products and Services**

**Dates:** April 1991–Present

**Credit Recommendation:** In the upper division baccalaureate degree category, 3 semester hours in Product and Process Design, Manufacturing Processes, or Operations Management (4/01). [NOTE: In order for credit to be awarded, the following examinations must be taken and passed: Designing Products and Processes, and Delivering Products and Services.]

**Description:** This 3-hour, 125-item examination addresses how to integrate systems, approaches, and strategies to make the transition from concept to product and from customer expectation to product delivery.

**Skills Measured** (Examination by Content Area):

**Identification of the delivery strategy**—components of customer satisfaction, recognition of constraints, strategic implications, and desired results

**Execution and assessment**—resource planning, operations, and post-sales support

**Continuous improvement and innovation**—providing feedback; recognizing gaps between capabilities for delivering products and services and meeting the needs of customers; improving processes, support systems and measurements, and post-sales support; and managing dynamics

### **CIRM—Integrated Enterprise Management**

**Dates:** April 1991–Present

**Credit Recommendation:** In the upper division baccalaureate degree category, 3 semester hours in Business Strategic Planning and Management (4/01). Prerequisites: Identifying and Creating Demand, Delivering Products and Services, Designing Products and Processes, and Enterprise Concepts and Fundamentals.

**Description:** This 3-hour capstone examination involves multiple-choice items and cases covering the relationship and interactions of functional groups working toward a common goal.

**Skills Measured** (Examination by Content Area):

**Personal skills necessary for the individual to succeed in an integrated enterprise**—per-

sonal characteristics, communication skills, and familiarity with information technology

**Teamwork skills and making change happen**—leadership, operation, team as an organization, accomplishing change, and project management

**Functions and their integration within the enterprise**—understanding business processes that require interaction and integration, identifying appropriate interactions that relate to the business processes and activities, understanding another function's perspective, and recognizing integration mechanisms

**Enterprise**—vision and mission, strategic goals and critical success factors, strategic decisions, issues that affect strategy, and measurement of success

**Enterprise in the environment**—global, domestic, environmental, and stakeholder influences, and competition

**Enterprise through time**—operation within each phase (start-up, growth, maturity, and decline); transition between phases; and demand and technology changes

### **CPIM—Basics of Supply Chain Management**

**Dates:** September 2000–Present

**Credit Recommendation:** In the lower division baccalaureate/associate degree category, 3 semester hours in Introduction to Materials Management, Introduction to Procurement, or Purchasing Management (4/01).

**Description:** This 3-hour, 105-item examination provides basic definitions and concepts for planning and controlling the flow of materials into, through, and out of an organization and explains fundamental relationships among the activities that occur in the supply chain from suppliers to customers.

**Skills Measured** (Examination by Content Area):

**Businesswide concepts**—organization fundamentals, operating environments, financial fundamentals, manufacturing resource planning (MRP II), just-in-time (JIT), and total quality management (TQM)

**Demand planning**—marketplace-driven customer expectations and definitions of value, customer relationships, and demand management

**Transformation of demand into supply**—design, capacity management, planning (purposes, inputs, and outputs), execution and control, and performance measurements

**Supply**—inventory, purchasing, and physical distribution system

### **CPIM—Master Planning of Resources**

**Dates:** September 2000–Present

**Credit Recommendation:** In the lower division baccalaureate/associate or upper division baccalaureate degree category, 3 semester hours in Production Planning and Control, Inventory Management, or Logistics (4/01). [NOTE: In order for credit to be awarded, the following examinations must be taken and passed: Master Planning of Resources, Detailed Scheduling and Planning, and Execution and Control of Operations.]

**Description:** This 3-hour, 75-item examination explores processes used to develop sales and operations plans; identify and assess internal and external demand and forecasting requirements; and gain an understanding of the importance of producing achievable master schedules consistent with business policies, objectives, and resource constraints.

**Skills Measured** (Examination by Content Area):

**Demand management**—relating demand management to the distribution environment, forecasting demand, and recognizing and processing actual demand

**Sales and operations planning**—relating the planning processes to the environment, understanding business choices that affect the aggregate planning process, developing and validating the sales and operations plan

**Master scheduling**—relating the master scheduling process to the business environment, understanding the business choices that affect the master scheduling process, constructing and implementing the master schedule, and measuring the business planning processes

### **CPIM—Detailed Scheduling and Planning**

**Dates:** September 2000–Present

**Credit Recommendation:** In the lower division baccalaureate/associate or upper division baccalaureate degree category, 3 semester hours in Production Planning and Control, Inventory Management, or Logistics (4/01). [NOTE: In order for credit to be awarded, the following examinations must be taken and passed: Detailed Scheduling and Planning, Master Planning of Resources, and Execution and Control of Operations.]

**Description:** This 3-hour, 75-item examination focuses on the various techniques for material and capacity scheduling, including detailed descriptions of material requirements planning (MRP), capacity requirements planning (CPR), inventory management practices, and procurement and supplier planning.

**Skills Measured** (Examination by Content Area):

**Planning material requirements to support the master schedule**—recognizing techniques and practices of inventory management, identifying information used in the material planning process, identifying the desirable characteristics of the detailed material planning process, mechanics of the detailed material planning process, maintaining the validity of the material plan, and interactions with other systems (i.e., closing the loop)

**Planning operations to support the priority plan**—recognizing the characteristics and techniques of the detailed capacity planning process, identifying information used in the detailed capacity planning process, identifying desirable characteristics of the detailed capacity planning process, uses of the detailed capacity planning process, measuring the performance of the detailed capacity planning process, and interactions with other systems

**Planning procurement and external sources of supply**—establishing relationships with suppliers, techniques and concepts for supplier partnerships, and implementing the new relationship to support the company's operational objectives

### **CPIM—Execution and Control of Operations**

**Dates:** September 2000–Present

**Credit Recommendation:** In the lower division baccalaureate/associate or upper division baccalaureate degree category, 3 semester hours in Production Planning and Control, Inventory Management, or Logistics (4/01). [NOTE: In order for credit to be awarded, the following examinations must be taken and passed: Execution and Control of Operations, Master Planning of Resources, and Detailed Scheduling and Planning.]

**Description:** This 3-hour, 75-item examination focuses on techniques for scheduling and controlling production and process operations and addresses the execution of quality initiatives and continuous improvement plans, as well as the control and handling of inventories.

**Skills Measured** (Examination by Content Area):

**Prioritizing and sequencing work to be performed**—interfaces, production environment, scheduling production and process operations

**Executing the plans, implementing physical controls, and reporting results of activities performed**—authorizing and reporting activities for push systems, authorizing and reporting activities for pull systems, production status reports, communicating both internal and external customer-supplier information, controlling resources, executing quality initiatives, eliminating waste, and implementing continuous improvement plans

**Evaluating performance and providing feedback**—evaluating quality management processes, monitoring supplier performance, evaluating the performance of production operations, and cost management process

### **CPIM—Strategic Management of Resources**

**Dates:** September 2000–Present

**Credit Recommendation:** In the upper division baccalaureate degree category, 3 semester hours in Production/Operations Management, Logistics Management, or Production and Inventory Management (4/01).

**Description:** This 3-hour, 75-item examination explores the relationship of existing and emerging processes and technologies to manufacturing strategy and supply chain-related functions.

**Skills Measured** (Examination by Content Area):

**Aligning the resources with the strategic plan**—competitive market issues; and choices affecting facilities, the supply chain, information technology, and organizational design

**Configuring and integrating the operating processes to support the strategic plan**—configuring and integrating the priority planning processes, the capacity planning processes, the design and development processes, and the cost management processes

**Implementing change**—evaluating and managing projects, measuring organizational performance, and managing change in an organization