

**CTAG Name: Supply Chain Management**

This document contains information about three Career-Technical Articulation Numbers (CTANs) for the Supply Chain Management Career-Technical Assurance Guide (CTAG).

The CTANs are:

1. Introduction to Supply Chain Management
2. Logistics and Transportation
3. Purchasing, Sourcing, and Supplier Management

**1. Introduction to Supply Chain Management** CTAN alignment with the Supply Chain Management Pathway in the Career Field Technical Content Standards of the Ohio Department of Education.

**General Course Description:** This course provides an overview of Supply Chain Management including its role and purpose across organizations, the various strategies and techniques used to improve organizations, analysis and performance measurement tools to ensure improvement, the integration of technology into the supply chain and global and emerging issues impacting the financial, legal, environmental and security aspects of organizations.

Advising Notes:

-Student must matriculate into an institution of higher education NO LATER than 5 years after completing the tech prep program and graduating from high school/career center.

-No recommendation for credential. CETE Exam should be the only means for credit.

Semester Credit Hours: 3

Alignment:

<b>Learning Outcomes The student will be able to:</b>	<b>Competencies and/or Descriptors from the new 2014 version of Supply Chain Management Pathway, Career Field Technical Content Standards/ Courses</b>
1. Demonstrate basic understanding of the principles of Supply Chain Management (SCM) and its role and purpose within the larger business environment and define the term “supply chain management”.	2.1.11 Differentiate between operations and supply chain, and describe their components, or activities, and contributions to business.  6.1.11 Explain the role of supply chain management and its contributions to business operations; and identify its activities, measures and issues.  7.7.3 Describe supply chain’s impact on customer satisfaction and perceived value.  7.7.4 Describe supply chains, and explain their integration with and influence on business activities and functions (e.g., product development, production, marketing, finance).  2.4.2 Identify types of business processes, their purposes (e.g., added customer value, increased efficiencies), their characteristics, their components (e.g., events, activities, decision points, metrics) and their interrelationships.
2. Explain common SCM strategies, techniques and procedures and when these	7.2.1 Differentiate among purchasing, procurement and sourcing. 7.2.7 Determine organizational strategies (e.g., quality, availability,

<p>may be used within differing business environments.</p>	<p>productivity, sustainability, supply chain management, corporate social responsibility, ethical business practices) impacting expense control options, and incorporate them into expense control plans.</p> <p>7.2.9 Identify opportunities to incorporate operational objectives into the procurement process (e.g., supplier diversity initiatives, supply chain management goals, regulatory compliance).</p> <p>7.3.3 Describe the factors considered in establishing inventory thresholds (e.g., tolerance for stock-outs, supply chain process goals).</p> <p>7.6.1 Explain the elements that influence the design of transportation, distribution, and logistical strategies (e.g., geographical locations, transportation costs, storage capacities, process design, regulations).</p> <p>7.6.6 Explain the impact of packaging on achievement of organizational goals, and choose appropriate packaging materials to pack products.</p> <p>7.3.15 Describe how inventory management principles apply to intangible services (e.g., monitoring queues and capacity planning for website transactions such as insurance).</p> <p>7.3.2 Identify the advantages and disadvantages of Just-in-Time(JIT) inventory processes.</p> <p>7.6.11 Analyze reverse logistics' costs, and describe strategies used to reduce costs.</p>
<p>3. Discuss key concepts of SCM performance measurement, common metrics and analysis tools used in SCM decision-making.</p>	<p>7.3.12 Assess distribution strategies (sales or stock performance, inventory status or performance) using performance metrics.</p> <p>7.3.7 Evaluate the effectiveness and efficiency of a production schedule.</p> <p>7.6.9 Describe commonly used metrics for evaluating transportation efficiency and effectiveness.</p>
<p>4. Identify various types of SCM information systems, electronic communication and technology used within the business environment.</p>	<p>2.3.8 Describe the impact of digital communication tools (e.g., Internet, video-and computer conferencing, webcasts, email, social media, digital communications) on global business activities.</p> <p>7.7.5 Trace and track the end-to-end supply chain network.</p> <p>7.7.6 Measure supply chain effectiveness, efficiency, adaptability, and sustainability.</p>

<p>5. Explain the effects of global and emerging trends on SCM including financial, environmental, legal and security impacts.</p>	<p>1.11.4 Determine how the quality, quantity and pricing of goods and services are affected by domestic and international competition in a market economy.</p> <p>2.3.2 Describe market-entry strategies for conducting business globally (e.g., import and export, technology licensing, franchising, wholly owned branch and subsidiary operations, joint ventures, consortia) and the considerations impacting the decision to offer goods or services globally.</p> <p>2.3.5 Describe the impact of the political environment on global trade (e.g., type of government, political stability, government policies about business).</p> <p>2.3.11 Explain the nature of global legal systems (e.g., civil or code, common, statutory), their impact on global trade and the approaches and legal recourse available to resolve disputes in global markets.</p> <p>2.3.13 Describe costs associated with global business, methods used to analyze those costs and the role of outsourcing and offshoring in cost management.</p> <p>2.3.14 Describe customs regulations, their impact on global business and the government agencies that facilitate trade.</p> <p>7.2.3 Evaluate the impact of using global sources.</p> <p>7.7.10 Compare challenges in supply chain design and operations for national and multinational organizations.</p> <p>7.8.2 Identify foreign influences that increase the risk of routine and non-routine operational failures in multinational corporations.</p> <p>2.3.7 Explain the impact of a country's economic development on global trade (e.g., type of economic system, natural resources, educational level, types of industries, infrastructure, technology availability or adoption).</p> <p>2.3.6 Explain the impact of a country's or area's geography and history on global trade.</p> <p>7.7.7 Evaluate risk factors and social economic trends affecting supply chain systems and the range of decisions available to management (e.g., sustainability focus, industry self-regulatory standards, globalization).</p>
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2. Logistics and Transportation: CTAN alignment with the Tech Prep Supply Chain Management Pathway in the Career Field Technical Content Standards of the Ohio Department of Education.

Semester Credit Hours: 3

Course Description: Logistics is concerned with the design and management of systems for the movement of products from points of production to points of consumption. Such systems typically encompass activities such as areas of safety, transportation, warehousing, materials handling, inventory planning, facility location, scheduling and purchasing of transportation services.

Advising Notes: Upon completion of program, student must earn a passing grade on the end of course CETE exam

**Alignment:**

Learning Outcomes The student will be able to:	Competencies and/or Descriptors from the new 2014 version of Supply Chain Management Pathway, Career Field Technical Content Standards/Courses
1. Identify the basic modes of transportation	<p>7.6.2 Compare and contrast the transportation systems for tangible and intangible items (e.g., natural gas, electricity, telecommunications).</p> <p>7.6.3 Analyze the cost structure and advantages and disadvantages of different transportation modes.</p>
2. Explain the advantages/disadvantages of movement by various transportation modes.	<p>7.6.2 Compare and contrast the transportation systems for tangible and intangible items (e.g., natural gas, electricity, telecommunications).</p> <p>7.6.3 Analyze the cost structure and advantages and disadvantages of different transportation modes.</p> <p>7.6.9 Describe commonly used metrics for evaluating transportation efficiency and effectiveness.</p>
3. Describe the traffic/logistics management function and its role in carrier selection, delivery performance, rate determination and rate negotiation.	<p>7.6.1 Explain the elements that influence the design of transportation, distribution, and logistical strategies (e.g., geographical locations, transportation costs, storage capacities, process design, regulations).</p> <p>7.6.7 Develop and manage transportation plans or networks to meet customer requirements and to comply with domestic and international regulations.</p>

<p>4. Explain how logistics/transportation costs can impact competition, economies of scale and customer satisfaction.</p>	<p>7.2.3 Evaluate the impact of using global sources. 7.7.3 Describe supply chain's impact on customer satisfaction and perceived value.</p>
<p>5. Explain technologies used by carriers to track the movement and storage of inventory between supplier and customer. Examples include bar code, Radio Frequency Identification, and Global Positioning System.</p>	<p>7.6.10 Execute product tagging and coding to track the movement of goods</p>
<p>6. Explain how logistics warehouse management systems, distribution requirements planning and inventory management can impact cost and customer service.</p>	<p>7.3.2 Identify the advantages and disadvantages of Just-in-Time(JIT) inventory processes. 7.3.3 Describe the factors considered in establishing inventory thresholds (e.g., tolerance for stock-outs, supply chain process goals). 7.3.7 Evaluate the effectiveness and efficiency of a production schedule. 7.3.14 Determine potential inventory issues, and develop backup options to obtain needed materials and maintain operations. 7.6.4 Analyze the impact of warehouse size and space layout on inventory management options, materials handling, and logistical requirements. 7.6.11 Analyze reverse logistics' costs, and describe strategies used to reduce costs. 7.7.3 Describe supply chain's impact on customer satisfaction and perceived value. 7.3.12 Assess distribution strategies (sales or stock performance, inventory status or performance) using performance metrics. 7.3.13 Conduct inventory valuation. 7.3.15 Describe how inventory management principles apply to intangible services (e.g., monitoring queues and capacity planning for website transactions such as insurance).</p>

3. **Purchasing, Sourcing, and Supplier Management:** CTAN alignment with the Supply Chain Management Pathway in the Career Field Technical Content Standards of the Ohio Department of Education.

**General Course Description:** This course examines the role of purchasing/sourcing within an integrated supply chain and how the management of suppliers is critical to the effectiveness and efficiency of today’s organization. The course addresses issues of process, tools and techniques, metrics, laws and emerging trends.

Advising Notes:

Student would need to matriculate into institution of higher education NO LATER than 5 years after completing the tech prep program and graduating from high school/career center.

No recommendation for credential. CETE Exam should be the only means for credit.

**Semester Credit Hours:** 3

**Alignment:**

Learning Outcomes  The student will be able to:	Competencies and/or Descriptors from the new 2014 version of Supply Chain Management Pathway, Career Field Technical Content Standards/Courses
1. Define and examine the history and role of procurement, purchasing, and sourcing <del>role</del> relative to the supply chain and to the current business environment including benefits to the organization.	1.11.4 Determine how the quality, quantity and pricing of goods and services are affected by domestic and international competition in a market economy.  2.1.11 Differentiate between operations and supply chain, and describe their components, or activities, and contributions to business.  6.1.11 Explain the role of supply chain management and its contributions to business operations; and identify its activities, measures and issues.  7.1.12 Evaluate the impact of third-party (e.g., supplier, contractor, foreign joint venture) workplace incidents on business reputation, brand, and performance; and describe strategies to reduce risk.  7.2.1 Differentiate among purchasing, procurement and sourcing.
2. Explain the purchasing/sourcing process including elements of cost management, tools and techniques, contract management, laws, and ethics.	2.3.11 Explain the nature of global legal systems (e.g., civil or code, common, statutory), their impact on global trade and the approaches and legal recourse available to resolve disputes in global

	<p>markets.</p> <p>2.3.13 Describe costs associated with global business, methods used to analyze those costs and the role of outsourcing and offshoring in cost management.</p> <p>5.1.6 Explain factors affecting pricing decisions (e.g., customer value perception, brand, negotiating power, corporate policies, competitive strategy, stage of customer life cycle).</p> <p>7.2.9 Identify opportunities to incorporate operational objectives into the procurement process (e.g., supplier diversity initiatives, supply chain management goals, regulatory compliance).</p> <p>7.2.5 Negotiate vendor contracts with suppliers (e.g., service and maintenance, supplies, system development).</p> <p>7.2.6 Monitor and evaluate vendor performance and relationships (e.g., supplier visits, scorecards).</p> <p>8.4.7 Determine strategies to manage compliance of outsourced and hosted service providers.</p>
<p>3. Describe activities associated with supplier management including supplier evaluation, supplier selection, supplier quality management, and global sourcing.</p>	<p>2.3.2 Describe market-entry strategies for conducting business globally (e.g., import and export, technology licensing, franchising, wholly owned branch and subsidiary operations, joint ventures, consortia) and the considerations impacting the decision to offer goods or services globally.</p> <p>7.7.11 Select strategies for improving customer and supplier relationships to support achievement of supply chain goals.</p> <p>7.2.4 Manage the bid or contracting process (e.g., bid specification, vendor or supplier search, bid review, selection of vendor) to achieve business goals.</p> <p>7.2.2 Identify potential sources of materials or services locally, nationally, and globally, and make purchases.</p>

<p>4. Identify emerging trends associated with purchasing, supplier and sourcing management.</p>	<p>4.1.4 Identify events (e.g., disasters, cyber-attacks, product launch) and stakeholder activities (e.g., supplier bankruptcy, rogue employee, compromised personal information, competitor exit) that could facilitate or prevent an organization from achieving its objectives, i.e., risk, at the organizational level.</p> <p>6.3.2 Mine standard databases (e.g., accounting, customer, product, vendor, sales, operations, human resources, patient, supplier, procurement), apply analytical tools, and interpret the findings.</p> <p>7.2.3 Evaluate the impact of using global sources.</p> <p>7.2.10 Evaluate whether to make or buy products.</p> <p>7.2.11 Assess the impact of accepting gifts on procurement decisions, business performance, and brand image.</p> <p>7.4.3 Evaluate the impact of quality on internal and external brand experience, reputation, financial performance (e.g., healthcare reimbursement), procurement and sourcing options, and process design.</p>
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