

# Supply Chain Management I: Foundations & Principles

<b>Primary Career Cluster:</b>	Marketing, Distribution & Logistics
<b>Course Contact:</b>	<a href="mailto:CTE.Standards@tn.gov">CTE.Standards@tn.gov</a>
<b>Course Code(s):</b>	C31H24
<b>Prerequisite(s):</b>	None
<b>Credit:</b>	1
<b>Grade Level:</b>	9-10
<b>Focused Elective Graduation Requirements:</b>	This course satisfies one of three credits required for an elective focus when taken in conjunction with other <i>Marketing</i> courses.
<b>POS Concentrator:</b>	This course satisfies one out of two required courses to meet the Perkins V concentrator definition, when taken in sequence in an approved program of study.
<b>Programs of Study and Sequence:</b>	This is the second course in the <i>Supply Chain Management</i> program of study.
<b>Aligned Student Organization(s):</b>	DECA: <a href="http://www.decatn.org">http://www.decatn.org</a> FBLA: <a href="http://www.fblatn.org">http://www.fblatn.org</a>
<b>Coordinating Work-Based Learning:</b>	Teachers who hold an active WBL certificate may offer placement for credit when the requirements of the state board's WBL Framework and the Department's WBL Policy Guide are met. For information, visit <a href="https://www.tn.gov/education/educators/career-and-technical-education/work-based-learning.html">https://www.tn.gov/education/educators/career-and-technical-education/work-based-learning.html</a> .
<b>Promoted Tennessee Student Industry Credentials:</b>	Credentials are aligned with postsecondary and employment opportunities and with the competencies and skills that students acquire through their selected program of study. For a listing of promoted student industry credentials, visit <a href="https://www.tn.gov/education/educators/career-and-technical-education/student-industry-certification.html">https://www.tn.gov/education/educators/career-and-technical-education/student-industry-certification.html</a> .
<b>Teacher Endorsement(s):</b>	030, 035, 039, 052 054, 152, 153, 158, 202, 204, 311, 430, 435, 436, 471, 472, 474, 475, 476, 503, 776, 952, 953, 958
<b>Required Teacher Certifications/Training:</b>	None
<b>Teacher Resources:</b>	<a href="https://www.tn.gov/education/educators/career-and-technical-education/career-clusters/cte-cluster-marketing.html">https://www.tn.gov/education/educators/career-and-technical-education/career-clusters/cte-cluster-marketing.html</a>  Best for All Central: <a href="https://bestforall.tnedu.gov/">https://bestforall.tnedu.gov/</a>

## Course at a Glance

CTE courses provide students with an opportunity to develop specific academic, technical, and 21st century skills necessary to be successful in career and in life. In pursuit of ensuring every student in Tennessee achieves this level of success, we begin with rigorous course standards which feed into intentionally designed programs of study.

Students engage in industry relevant content through general education integration and experiences such as career and technical student organizations (CTSO) and work-based learning (WBL). Through these experiences, students are immersed with industry standard content and technology, solve industry-based problems, meaningfully interact with industry professionals and use/produce industry specific, informational texts.

### Using a Career and Technical Student Organization (CTSO) in Your Classroom

CTSOs are a great resource to put classroom learning into real-life experiences for your students through classroom, regional, state, and national competitions, and leadership opportunities. Below are CTSO connections for this course, note this is not an exhaustive list.

- Participate in CTSO Fall Leadership Conference, DECA and FBLA Fall Leadership Camps, FBLA Regional and State Leadership Conferences, and DECA Emerging Leader Summit.
- Participate in conferences that promote career development such as DECA Career Pathways and Career Development Conferences.
- Participate in FBLA career competitive events that highlight career development, including developing an electronic career portfolio, interviewing skills, and career exploration.
- Participate in DECA competitive events such as Integrated Marketing Campaign-Event, Product, and/or Service, and Marketing Management Team Decision Making.
- Participate in FBLA competitive events such as Management Information Systems, Management Decision Making, Critical Thinking, Organizational Leadership, Spreadsheet Applications, and Supply Chain Management.

For more ideas and information, visit Tennessee DECA at <http://www.decatn.org/> and Tennessee FLBA at <https://www.fblatn.org/>.

### Using Work-Based Learning (WBL) in Your Classroom

Sustained and coordinated activities that relate to the course content are the key to successful work-based learning. Possible activities for this course include the following. This is not an exhaustive list.

- **Standards 2.1-2.2** | Guest speakers from the supply chain industry to discuss various career opportunities, requirements, and skills within the industry.
- **Standards 3.1-3.2** | Job shadowing and industry tours for students to learn about supply chain processes, including product development, supply chain flow, and operations.
- **Standards 5.1-5.5** | Virtual exchanges with supply chain industry professionals for students to learn about the various components of supply chain management.
- **Standard 6.2** | Job shadowing professionals to gain exposure to the various tools and processes companies use to manage supply chain flow.
- **Standard 6.5** | Information interviews with professionals to gather information on problem-solving and decision-making strategies used by supply chain managers.
- **Standard 7.1** | Integrated project with multiple interactions with professionals from the supply chain industry.

## Course Description

*Supply Chain Management I: Foundations & Principles* exposes students to careers and businesses involved in the planning, management, and movement of people, materials, and products by road, air, rail, pipeline, and water. As an introduction to this important and globally evolving field, this course covers the basic principles of logistics, reviews the history and development of distribution networks, and examines how they function within the dynamics of the supply chain. Upon completion of this course, proficient students will explore career options; demonstrate an understanding of the historical, current, and future significance of supply chain industries; and plan for the effective and efficient flow of goods and services. This course will require extensive Microsoft Office applications including but not limited to PowerPoint creation; use of templates; spreadsheet manipulations; and designing of charts, graphs, formulas, and tables.

## Course Standards

### 1. Occupational Safety

- 1.1 Supply Chain Safety Practices: Examine **personal and environmental safety practices** associated with the appropriate handling, storage, and distribution of materials in accordance with local, state, and federal safety and environmental regulations. Identify **safe operating procedures** used in manufacturing facilities, office buildings, warehouses, and transportation areas, including personal protective equipment requirements.
- 1.2 Government Agencies and Supply Chain: Research the **role of government agencies** in the supply chain and transportation industries, particularly the Occupational Safety & Health Administration (OSHA) and the Federal Motor Carrier Safety Administration (FMCSA). Examine the **procedures and regulations** set by these agencies, weighing their **benefits and restrictions**. Identify the procedure for obtaining the OSHA 10 General Industry Certification.

### 2. Career Investigation

- 2.1 Career Pathways and Aptitudes: Identify and analyze **career pathways** within the supply chain industry and summarize the **essential knowledge and skills** required for these careers. Complete a **career aptitude survey** and analyze the results to assess the relationships between personal career aptitudes and careers in Supply Chain.
- 2.2 Labor Opportunities and Trends: Compile and analyze **real-time and projected labor market data** from public sources to investigate **local and regional occupational opportunities and trends** in the field of supply chain. Compare occupations by education requirements, job availability, job projections, salaries, and benefits for the local community, the state, and the nation.

### 3. Supply Chain Functions

- 3.1 Supply Chain Terminology: Define **common terminology in supply chain**, including: supply chain, logistics, distribution, supply chain planning (SCP), supply chain visibility (SCV), inventory management, marketing, and channel management. Use the **APICS Industry**

**Dictionary** to help create a glossary of terms related to supply chains and their management. Add new terms to the glossary as needed.

- 3.2 Supply Chain Goals and Benefits: Explain the **goals and benefits** of supply chain and reasons why it is **essential in today's economy**. Analyze how using logistics to distribute products and services provides companies a **competitive advantage** and improves their operations.
- 3.3 Five Major Supply Chain Flows: Research the **five major supply chain flows**—product flow, information flow, financial flow, value flow, and risk flow. Analyze **each flow's impact** on the supply chain as a whole and the interactions that must occur between each. Create the following documents used in the five major flows:
- request for proposal (RFP) or request for quotation (RFQ),
  - purchase order,
  - invoice,
  - inventory counts,
  - delivery schedules, and
  - payment schedules.
- 3.4 Internal vs. External Supply Chains: Differentiate between an organization's **internal and external supply chain**, including internal and external customers. Identify the **three tiers of suppliers and consumers** in supply chain.
- 3.5 Supply Chain Sustainability: Define supply chain sustainability (SCS) and related terms (e.g., lean, green, and sustainable) and identify **supply chain sustainability's core objectives**. Outline and analyze the most common **supply chain sustainability practices**, determining the advantages and disadvantages of each.
- 3.6 Product and Service Delivery: Determine the role supply chain management decisions have on the **cost-effective delivery** of a product or service to consumers. Identify the **supply chain processes** required to fulfill a customer request, including but not limited to: new product development, planning, buying, manufacturing operations, marketing, distribution, and customer service. Select a product and map the movement of primary inputs and outputs (or inbound and outbound) on a global or local scale.
- 3.7 Supply Chain Functions: Analyze each of the following functions to determine their **role in supporting the customer's receipt of the final product/service at an optimal price point**:
- purchasing,
  - manufacturing,
  - inventory management,
  - demand planning,
  - warehousing,
  - transportation, and
  - customer service.

## 4. Supply Chain as a Component of Marketing

- 4.1 Marketing Strategies: Examine **marketing's role in ensuring supply chains operate at peak performance**, identifying key marketing strategies used to support supply chains.
- 4.2 Marketing Mix: Examine the **marketing mix**, or 4Ps, (product, place, price, and promotion). Describe **supply chain management's relation to the 4Ps** and analyze supply and demand's **influence on marketing strategies**, specifically product and price decisions.

## 5. Components of Supply Chain Management

- 5.1 Supply Chain Network: Research the **components of supply chain planning**. Identify the major **nodes and links in a product network**.
- 5.2 SOCR Model Plan: Identify and explain the **stages of the SOCR Model Plan** (Plan, Source, Make, Deliver, and Return).
- 5.3 Modes of Transportation: Explore the **five modes of transportation** (i.e. truck, train, plane, ship, pipeline) to move materials by land, air, or sea and identify at least one carrier or service provider from each. Identify criteria used (i.e. weighted selection/performance criteria) to evaluate the modes and justify the use of a weighted criteria evaluation to select the most **efficient and cost-effective mode**.
- 5.4 Supply Chain Facilities: Examine the **seven primary layout types** for facilities involved in supply chain. Describe how **materials and information feed into and flow** in each type of layout.
- Office layout
  - Retail layout
  - Warehouse layout
  - Fixed-position layout
  - Process-oriented layout
  - Work cell layout
  - Product-oriented layout
- 5.5 Product Movement and Management: Illustrate the **movement and management of a product** through each node/component and the issues of communication related to the **bullwhip effect** and **bottlenecking**.

## 6. Management and Information Technology

- 6.1 Microsoft Excel and Information Management: Demonstrate **proficiency with Microsoft Excel** to manage and analyze data, keep records, and solve problems.
- 6.2 Supply Chain Tools and Processes: Investigate the tools and processes companies use to **manage the flow of inputs and outputs** within a supply chain. Determine the use of barcodes, radio frequency identification (RFID), unique identification (UID), and tagging methods (active and passive) in the **tracking and distribution of product flow**.

- 6.3 Computers and Information Technology: Determine the use of computers and other information technologies in a supply chain. List **relevant technologies/software** and describe how they **improve supply chain function**.
- 6.4 Product Pricing and Profitability: Establish supply chain's contributions to a consumer's price for a product and a company's profit/loss potential and depict how changes in supply chain costs affect final **product pricing** and **company profitability**.
- 6.5 Supply Chain Disruption and Risks: Outline the effects of supply chain disruption and its related risks. Analyze the **importance of distribution and logistics** in a global society. Investigate the **influences** of customer demands, ordering and managing inventory, forecasting, controlling inbound and outbound shipments, reducing costs, and saving time in **product and service flow** and analyze how **international trade agreements** affect each.

## 7. Case Study

- 7.1 Global Supply Chain Network: Synthesize information from industry, scholarly, and popular media sources outlining how a top 20 retailer has used supply chain management to become one of the largest retailers in the world. Analyze the following areas of the **retailer's global supply chain network**:
- a. customer service,
  - b. distribution costing,
  - c. distribution planning,
  - d. information technology,
  - e. materials and purchasing management,
  - f. order processing systems, and
  - g. transport and inventory management.

## Standards Alignment Notes

\*References to other standards include:

- P21: Partnership for 21st Century Skills [Framework for 21st Century Learning](#)
  - Note: While not all standards are specifically aligned, teachers will find the framework helpful for setting expectations for student behavior in their classroom and practicing specific career readiness skills.