

# STRANDS AND STANDARDS

## SUPPLY CHAINS, INTRO



### Course Description

This introductory course is the first in a series designed to explore transportation, distribution, and logistics careers. This course provides a foundational understanding of warehouse and terminal management, logistics and supply chains, safety, industrial hygiene, risk management, and workplace skills.

<b>Intended Grade Level</b>	9-12
Units of Credit	0.5
Core Code	40.11.00.00.105
Concurrent Enrollment Core Code	N/A
Prerequisite	N/A
Skill Certification Test Number	N/A
<b>Skill Certification Cut Score</b>	<b>N/A</b>
Test Weight	0.5
<b>License Area of Concentration</b>	CTE and/or Secondary Education 6-12
<b>Required Endorsement(s)</b>	
Endorsement 1	N/A
Endorsement 2	N/A

## STRAND 1: WAREHOUSE & TERMINAL MANAGEMENT

Students will demonstrate an understanding of basic warehouse and terminal operations.

### Standard 1

Recognize key terms related to warehouse & terminal management and operations.

- Shipping manifest
- Warehouse cataloging
- Transload, load, receive
- Warehouse
- Terminal
- Receiving area
- Loading area
- Forklift
- Conveyor belts
- Radio Frequency Identification (RFID) Tag
- Storage area
- Safety Data Sheets (SDS)
- Warehouse layout
- Material handling
- Inventory
- Personal Protective Equipment (PPE)
- Freight
- Supply Chain
- Milestones

### Standard 2

Explore warehouse & terminal management job opportunities and their requirements.

- Knowledge
- Skills
- Training
- Certifications/Recertifications

### Standard 3

Illustrate how resources are deployed within a warehouse.

- Inventory
- Equipment Acquisition
- Equipment Maintenance
- Schedule
- Personnel
- Equipment Safety Procedures

### Standard 4

Compare warehouse and terminal operations.

- Receiving
- Storage (warehousing)
- Material handling / transload
- Tracking
- Retrieval
- Loading / Shipping

**Standard 5**

Identify goals, expected outcomes, and task management of a given project.

- Timelines
- Costs
- Deliverables
- Graphical Management Tools (Gantt & PERT charts)
- Project team roles and responsibilities
- Milestones

**Performance Skills**

- Catalog the contents of a shipping manifest.
- Given a scenario, develop a resource implementation schedule.
- Create a Gantt or PERT chart for a given project.

## STRAND 2: LOGISTICS & SUPPLY CHAINS

Students will demonstrate an understanding of the sourcing and distribution of products and services.

### Standard 1

Identify components of supply chains.

- Raw Materials
- Modes of Transportation
- Links in Supply Chains
- Distribution Networks
- Manufacturing
- Transportation Infrastructure
- Personnel
- Producers
- Retailers

### Standard 2

Demonstrate how various products are moved from source to final destination across multiple modes of transportation.

- Rail
- Truck
- Ship
- Plane
- Pipeline
- Transload terminals

### Standard 3

Relate global economies to supply chain issues.

- Supply & demand
- Global markets & trade routes
- Impacts of supply chain disruptions
- Innovations for overcoming challenges
- Societal and governmental regulations

### Standard 4

Compare various equipment/fleet technologies and their uses in supply chains.

- Automated vehicles
- Drones
- Internet of Things (IoT)
- Tracking
- Safety Applications of Technology

**Standard 5**

Describe the role of Geographic Information Systems (GIS) in transportation and supply chains.

- Flow of goods
- Transportation routes
- Inventory levels
- Operation optimization
- Cost reduction
- Risk monitoring & mitigation

**Performance Skills**

- Research how a given product is sourced from raw materials to a finished, manufactured product.
- Illustrate the supply chain of a given product (from manufacturing to consumer).

## STRAND 3: SAFETY, INDUSTRIAL HYGIENE, & RISK MANAGEMENT

Students will apply concepts of safety, health, and environmental stewardship.

### Standard 1

Interpret regulation placards.

- Explosives
- Gasses
- Flammable or combustible liquids
- Flammable solids, spontaneously combustible and dangerous when wet
- Oxidizer and organic peroxide
- Poison (toxic) and Poison inhalation hazard
- Radioactive
- Corrosive
- Miscellaneous
- Dangerous

### Standard 2

Identify governing standards, bodies, rules, and regulations.

- Basics of Occupational Exposure Limits (OEL)
- Basics of Enterprise Risk Management (ERM)
- OSHA, MSHA, DOT, EPA, etc.
- Federal, state, local, societal, and ethical

### Standard 3

Identify related occupational hazards.

- Health: solvents, adhesives, paints, dusts, etc.
- Physical: noise, radiation, heat, fire, electrical, mechanical, etc.
- Biological: infectious diseases, poisons, molds, toxic vegetation, animal materials, etc.
- Ergonomical: heavy lifting, repetitive motions, vibration, etc.

### Standard 4

Identify procedures for minimizing and mitigating risks for a given hazard.

- PPE types and uses
- Situational awareness
- Safety Data Sheets (SDS)
- Emergency response plans
- Hazard management planning
- Hierarchy of Controls (elimination, substitution, engineering, administrative, PPE)

### Performance Skills

- Complete a Job Hazard Analysis (JHA) for a workplace environment.
- Perform a qualitative risk assessment of health-related hazards in a workplace environment.

## STRAND 4: WORKPLACE SKILLS

Students will demonstrate workplace and career readiness skills related to the supply chain and transportation industry. These standards will not appear on state skill certification exams, but should be taught throughout the duration of the course.

### Standard 1

Students will display personal skills related to the essential values, personality traits, and personal characteristics for success in the industry and life.

- **Integrity** - demonstrate honesty and personal responsibility.
- **Work ethic** - demonstrate tenacity, hard work, excellence, punctuality, meet deadlines; and be self-directed when completing tasks.
- **Professionalism** - demonstrate maturity, self-confidence; and a positive image when working with teammates or clients on jobs/projects.
- **Responsibility** - demonstrate dependability, consistency, and personal well-being when safely completing tasks.
- **Adaptability/Flexibility** - Foster creativity, new ideas, and resilience when working to solve problems.
- **Self-motivated** - demonstrate a willingness to learn, independence, initiative, and a positive attitude when approaching new information

### Standard 2

Students will display workplace skills related to the essential attitudes and abilities for success.

- **Communication** – Demonstrates skills in listening, writing, and speaking; communicates professionally with teammates, supervisors, and customers.
- **Decision making** – Analyzes key facts, data, and situations to employ reasoning skills.
- **Teamwork** – Builds trusting relationships, works cooperatively with others and utilizes individual strengths of team members.
- **Planning, organizing, and management** – Designs, prepares, and implements tasks within a desired timeframe; Sets priorities and responds to changing priorities.
- **Leadership** – Builds positive relationships and mitigates conflict.

### Standard 3

Students will display technical skills that are grounded in transportation and supply chains that deliver essential knowledge and competencies for success in the industry.

- **Computer and technology literacy**
- **Job specific skills**
- **Safety and health**
- **Service orientation** – responds to internal and external customers; demonstrates focus and presence; attends to personal matters away from the classroom.
- **Professional development** – demonstrates openness to learn, grow, and change.

Skill Certification Test Points by Strand

Test Name	Test #	Number of Test Points by Strand										Total Points	Total Questions
		1	2	3	4	5	6	7	8	9	10		
Supply Chains, Intro													