

Introduction to Careers in Transportation, Distribution, and Logistics **Scope and Sequence**

Unit Lesson **Objectives**

TRANSPORTATION OVERVIEW

Characteristics of Each Transportation Mode

- Explain the importance of transportation and shipping in the United States.
- Compare the advantages and disadvantages of transportation by air, rail, water, road, and pipeline.
- Identify general guidelines for determining the use of various transportation methods.

Project: Create a Shipping Plan

A Brief History of Transportation, Logistics, and the Economic Environment

- Describe the changing role of the government in the transportation industry.
- List the advantages and disadvantages of regulation for the transportation industry.
- Identify the federal agencies that are responsible for regulating the transportation industry.
- Evaluate the impact that globalization has had on the transportation industry.

Careers in Transportation

- Identify career options in air, rail, water, and road transportation.
- Categorize various career options in transportation based on job responsibilities and background requirements.
- Evaluate career options in transportation based on personal goals and expectations.

Project: A Week in the Life of a Transportation Worker

Mass Transportation

- Describe the character of various mass transportation types.
- Describe the limits of the various markets served, and the nature of the various services offered.

Unit Lesson

Objectives

Explain the overall style of these different areas, including taxi and limousine services, urban mass transit, water mass transit (ferries), both commercial and private air travel, and cruise vacation travel.

Describe a variety of employment opportunities.

Project: FAA Guidelines for Pilots

The Regulatory and Competitive Environment for Transportation

Describe the regulatory environment in the United States and Europe.

Compare and contrast the regulatory structures for air, rail, and mass transit.

Analyze how government policies influence the use of rail and mass transit in the United States compared to Europe, including the tax policies on oil and gas.

Analyze how the new ride sharing services, such as Lyft and Uber, are being received in Europe and the United States and the issues confronting regulations.

Careers in Transportation That Move People

Describe transportation careers in the following sectors: individual transportation, commercial airlines, mass transit including commuter rail, the cruise industry, and government regulators.

Understand which careers need a college degree and which do not.

Project: Understanding Educational Requirements for Specific Jobs

Test

DISTRIBUTION AND WAREHOUSING

The Roles of Distribution

Describe the roles that a distribution center plays in a business that supplies goods to customers.

Identify steps that a distribution center can take to reduce transportation costs and increase customer service.

Analyze how a distribution center's geographic location can impact expenditures.

Unit Lesson

Objectives

Compare the advantages and disadvantages of private versus public warehouses.

Project: Design a Distribution Center

Warehouse Functions and Facilities
Management

List the steps that should be taken at a distribution center in order to ensure that goods are correctly received, stored, and shipped.

Describe the supplementary functions performed at a distribution center.

Identify the elements that should be considered when designing a distribution center.

Facility Layout and Equipment

Analyze financial data to develop budgets and determine profitability, cost reduction, and asset utilization.

Describe materials-handling equipment utilized in warehouses.

Identify health and safety considerations in a warehouse setting.

Project: Visit a Warehouse

Automation in Distribution

Describe the technological innovations that have allowed warehouse management to be converted from a manual to an automatic process.

Identify the ways in which barcode and radio frequency technology are currently being used in distribution centers.

Summarize how technology is being used to automate the storage and retrieval of goods in a warehouse.

Project: Create an Advertisement

Managing Distribution Operations

Distinguish between the policies and procedures used in a distribution center.

Analyze financial data to develop budgets and determine profitability, cost reduction, and asset utilization.

Describe the tools that a manager can use to assess the performance of a distribution center.

Unit Lesson

Objectives

Careers in Distribution Center Management

Identify the job requirements and aptitude needed to successfully pursue different career pathways in the TDL areas.

Define the various tasks carried out by individuals employed in a warehouse.

List the supporting roles that are necessary for the proper functioning of a warehouse.

Describe the federal agency responsible for ensuring the health and safety of the majority of workers employed in the United States.

Project: Interview a Warehouse Employee

Test

TRANSPORTATION SYSTEMS, INFRASTRUCTURE PLANNING, MANAGEMENT & REGULATION

History of Transportation Systems in the United States

Summarize the evolution of transportation systems from 1800 to present.

Describe the Pony Express and horse-drawn carriages.

Describe the development of the nationwide rail system in the United States.

Describe the development of the interstate highway system.

Project: The Pony Express

History of Transportation Systems in Europe

Summarize the evolution of transportation systems in Europe.

Identify water as the dominant inter-European transportation system.

Describe how rail developed differently in the different countries and its impact on cross-continent travel.

Project: Early Transportation Systems

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History of Transportation in Asia

Describe and summarize the history of the development of modern transportation systems in Asian nations in overview, focusing on Japan.

Describe and summarize the history of the development of modern transportation systems in Asian nations in overview, focusing on India.

Describe and summarize the history of the development of modern transportation systems in Asian nations in overview, focusing on China.

Modern Transportation Infrastructure

Characterize the state of the transportation infrastructure in the United States, China, and Europe.

Identify transportation priorities in the United States, China, and Europe.

Evaluate the impact of government attitudes in determining infrastructure spending and support.

Project: Regulated Transportation
Industries

Transportation Planning and Regulation
in the United States

Summarize the transportation planning process.

Identify transportation agencies involved in transportation planning.

Describe urban transportation planning.

Describe United States Department of Transportation (USDOT) role in transportation regulation.

Careers in Transportation Planning and
Regulation

Identify the job requirements and aptitude needed to successfully pursue different career pathways in the TDL areas.

Project: Getting Around Your Community

Test

Unit Lesson

Objectives

LOGISTICS & LOGISTICS SERVICES

Inventory Management

Discover the functions of inventory.

Examine the role of inventory management in customer service.

Identify the problems caused by having too much inventory.

Describe the basic inventory ordering methods.

Compare basic inventory ordering methods.

Identify professional organizations and certifications associated with inventory management.

Project: Design an Inventory Ordering
System for Your Household

Purchasing

Discover the role of purchasing.

Describe the basic goods requisition and purchasing process.

Evaluate supplier relationship management (SRM).

Analyze the effect of purchase discounts in purchasing.

Discover the professional organizations and certifications associated with purchasing.

Reverse Logistics

Define reverse logistics.

Describe remanufacturing.

Discover refilling.

Describe recycling.

Identify business opportunities in reverse logistics (good public relations, make money from returned items, service contracts).

Unit Lesson

Objectives

Project: Evaluate a Company's Reverse Logistics Policies

Third- and Fourth-Party Logistics

Define third-party logistics.

Define fourth-party logistics.

Evaluate the roles of 3PLs and 4PLs.

Discover the roles of 3PLs and 4PLs in customer service.

Logistics in the Military

Identify and evaluate the history of logistics in the military.

Describe the role of logistics in the military.

Describe the path of career training for logistics personnel.

Discuss the role logistics played in the first Gulf War (1990).

Project: United States Army Corps of Engineers: Their Contributions

Careers in Logistics

Describe purchasing.

Describe Third-Party Logistics Providers (3PLs) and Fourth-Party Logistics Providers (4PLs).

Describe materials and inventory management.

Describe military logistics.

Project: You: The Logistician

Test

FUTURE TRENDS IN TRANSPORTATION, DISTRIBUTION & LOGISTICS

Self-Driving Vehicles

Unit Lesson

Objectives

Explain the development and current status of the Google self-driving car.

Discuss the development of the General Motors (Cadillac) self-driving car due in 2017.

Explain the development and current status of the Mercedes-Benz self-driving trucks due in 2025.

Describe the potential impact of self-driving vehicles on train travel.

Describe the potential impact of self-driving vehicles on jobs (taxi driver, over-the-road truck driver, and the engineers needed to develop them).

Project: Getting from Here to There
without a Driver

Drones

Describe the role and function of military drones.

Describe the role and function of delivery drones.

Explain the use of drones in modern business settings, including Amazon Prime Air, UPS, FedEx, and pizza delivery.

Explain the potential effect of drone use on jobs and employment opportunity.

Robots

Describe industrial robots.

Describe fast food robots.

Evaluate the use of robots as warehouse workers.

Describe the use of robots as maids.

Discuss the potential impact of robots on jobs (supplementing/replacing workers, engineers needed to develop them, maintenance).

Project: Robotics in Our Future

Radio Frequency Identification (RFID)

Describe current implementation on toll roads.

Unit Lesson

Objectives

Define RFID in retailing (improved visibility, reduced counterfeiting, reduced/eliminated check-out clerks).

Characterize RFID in pharmaceutical distribution (improved visibility, reduced counterfeiting).

Project: The Evolution of RFID
Technology

Increased Supply Chain Visibility

Discover how the combination of GPS and RFID improves supply chain visibility during shipping.

Define how global communication through IT will improve identifying damaged goods in transit and help reduce costs associated with shipment errors.

Project: The Science Behind the
Technology

The Rebirth of Manufacturing in the USA

Distinguish between outsourcing and offshoring.

Evaluate reasons for outsourcing and offshoring.

Discover why, as costs in China and other low cost regions rise, United States firms are reshoring.

Describe how the cost advantage of manufacturing overseas is disappearing.

Analyze how automation and 3D printing are affecting reshoring decisions by companies.

Test

COURSE PROJECT, REVIEW, AND EXAM

Review

Exam