

# MET-1631: INDUSTRIAL SUPPLY LOGISTICS

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## Cuyahoga Community College

**Viewing: MET-1631 : Industrial Supply Logistics**

**Board of Trustees:**

January 2023

**Academic Term:**

Fall 2023

**Subject Code**

MET - Mech Eng/Manuf Ind Eng Tech

**Course Number:**

1631

**Title:**

Industrial Supply Logistics

**Catalog Description:**

An introduction to supply chain logistics and warehouse operations for manufacturing processes. Fundamentals of supply chains, transportation modes, inventory control, documentation required in warehouses, types of warehouse equipment, workplace safety, proper handling of material, quality control systems, inspection methods, specifications, ISO 9001, product handling, and print reading. Designed to prepare students to take the MSSC CLA examination.

**Credit Hour(s):**

2

**Lecture Hour(s):**

1

**Lab Hour(s):**

2

## Requisites

**Prerequisite and Corequisite**

None.

## Outcomes

**Course Outcome(s):**

Identify and discuss the various roles in the global supply chain logistics life cycle.

**Objective(s):**

1. Explain regulations, specifications and procedures that may impact storage of hazardous materials.
2. Discuss the environmental impact of logistics activities.
3. Demonstrate warehouse layout concepts to minimize handling costs.

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**Course Outcome(s):**

Describe roles and processes of the logistics environment.

**Objective(s):**

1. Describe various transportation options.
  2. Discuss the environmental impact of logistics activities.
  3. Uses established procedures to promptly document and communicate quality problems or issues.
  4. Demonstrate warehouse layout concepts to minimize handling costs.
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**Course Outcome(s):**

Operate and use equipment.

**Objective(s):**

1. Recognizes and understands uses of different types of material handling equipment.
  2. Demonstrate proper operation of material handling equipment.
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**Course Outcome(s):**

Practice safety principles in the handling of materials and operation of equipment.

**Objective(s):**

1. Explain regulations, specifications and procedures that may impact storage of hazardous materials.
  2. Discuss the environmental impact of logistics activities.
  3. Uses appropriate personal protective equipment.
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**Course Outcome(s):**

Practices quality control principles.

**Objective(s):**

1. Discuss the environmental impact of logistics activities.
  2. Explains difference between preventative and corrective maintenance actions.
  3. Uses established procedures to promptly document and communicate quality problems or issues.
  4. Demonstrate warehouse layout concepts to minimize handling costs.
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**Course Outcome(s):**

Practices teamwork and good workplace behavior to solve problems.

**Objective(s):**

1. Utilize work communication practices.
  2. Discuss examples of teamwork and good workplace behavior to solve problems.
  3. Recognizes and understands uses of different types of material handling equipment.
  4. Explains difference between preventative and corrective maintenance actions.
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**Course Outcome(s):**

Use relevant computer systems and applications to track material handling, corrective/preventative maintenance, and handling of material.

**Objective(s):**

1. Recognizes and understands uses of different types of material handling equipment.
  2. Explains difference between preventative and corrective maintenance actions.
  3. Demonstrate warehouse layout concepts to minimize handling costs.
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**Course Outcome(s):**

Review product specifications and managing products.

**Objective(s):**

1. Explain regulations, specifications and procedures that may impact storage of hazardous materials.
  2. Explains difference between preventative and corrective maintenance actions.
  3. Demonstrate warehouse layout concepts to minimize handling costs.
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**Course Outcome(s):**

Explain and discuss the different modes of transporting product and advantages and disadvantages of each.

**Objective(s):**

1. Explain regulations, specifications and procedures that may impact storage of hazardous materials.
  2. Describe various transportation options.
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**Methods of Evaluation:**

- a. Course Project
- b. Midterm Exam and Final Exam
- c. Laboratory Assignments/Reports
- d. Quizzes and Homework Assignments

**Course Content Outline:**

1. Overview of Industrial Supply Chains and Logistics
  - a. Role of Logistics in Industry
  - b. What are Supply Chains?
  - c. Introduction of typical roles in the supply chain
2. Role of Warehouses and Warehouse Management
  - a. Types of warehouse operations
  - b. Location Placement of Warehouses
  - c. Numbering of Warehouse
  - d. Introduction to the Traveling Salesperson Optimization Model
  - e. Warehouse Manager's Role
  - f. Introduction to Quality Systems
  - g. Basics of Organizational Hierarchy
  - h. Training
3. Processes in a Warehouse with regards to Inventory
  - a. Receiving
  - b. Put-Away
  - c. Recording and Documentation
  - d. Quality Control/Inspections
  - e. Pick Preparation
  - f. Pick Area Layout
  - g. Order Picking Methods and Technologies
4. Replenishment and Dispatch
  - a. Value-Adding Services
  - b. Managing Stock
  - c. Security
  - d. Returns Processing
  - e. Dispatch
5. Warehouse Management Systems
  - a. Types of Warehouse Management Software
  - b. Types of IT Systems and Services
6. Warehouse Layout
  - a. Data Collection and Analysis
  - b. Space Calculations
  - c. Layout Examples
7. Storage and Handling Equipment
  - a. Storage Equipment and Options
  - b. Handling Equipment
  - c. Automated Storage and Retrieval Systems
8. Warehouse Costs
  - a. Processing Activities

- b. Types of Costs
  - c. Return on Investment
  - d. Charging Methods
9. Performance Management and Quality Control
- a. What should be measured?
  - b. Performance Modeling
  - c. Benchmarking and Scorecards
10. Toxicology Fundamentals and Safety
- a. Acute/Chronic Exposure
  - b. IDLH and LD
  - c. MSDS Reading
  - d. Types of Safety Risks in a Warehouse
  - e. Equipment for Reducing Injuries
11. Environmental Impact
- a. Material Packaging
  - b. Introduction to Legislation
  - c. Energy and Waste Streams
  - d. Proper Disposal
  - e. Equipment Maintenance
12. Introduction to ISO 9001
- a. Types of Documentation Required
  - b. Introduction to Standards and Requirements
  - c. Examples of ISO 9001 Compliance

## Resources

Christopher, Martin. *Logistics & Supply Chain Management*. Fifth Edition. New York, NY: Prentice Hall, 2016.

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Hugos, Michael H. *Essentials of Supply Chain Management*. 4th ed. Hoboken, NJ: John Wiley & Sons, Inc., 2018.

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Reddy, Leo and Rebekah Hutton. *Supply Chain Logistics: Foundational Knowledge*. 3rd ed. Alexandria, VA: MSSC, 2013.

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Richards, Gwynne. *Warehouse Management: A complete guide to improving efficiency and minimizing costs in the modern warehouse*. 3rd ed. New York, NY: Kogan Page Limited, 2017.

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Bowersox, Donald. *Supply Chain Logistics Management*. 5th. McGraw Hill, 2019.

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