Transportation, Distribution and Logistics
Materials Management
Course Number 47.47210

Course Description:

Materials Management is the third course in the Distribution and Logistics pathway. Materials Management is concerned with planning, organizing, and control flow of materials from their initial purchase to destination. Topics include product receiving, proper materials storage, order processing in relation to warehouse operations, packaging materials, inventory control, safe handling of hazardous materials, transportation modes, dispatch, routing and tracking operations.

Students will be instructed through the use of lectures, guided inquiry, project-based learning, interviews with industry professionals, job shadowing, teamwork, problem solving, simulations, and /or school based enterprise. Students should also participate in leadership development activities with a Career Technical Student Organizations (CTSOs). Successful completion of this course will prepare students for the Certified Logistics Technician (CLT) exam. Students must complete Logistics Fundamentals, Logistics Operations, Certified Logistics Associate (CLA) exam, and Materials Management in order to be eligible to take the CLT exam. The prerequisite for this course is Logistics Operations.

Course Standard 1

TDL-MM-1

The following standard is included in all CTAE courses adopted for the Career Cluster/Pathways. Teachers should incorporate the elements of this standard into lesson plans during the course. The topics listed for each element of the standard may be addressed in differentiated instruction matching the content of each course. These elements may also be addressed with specific lessons from a variety of resources. This content is not to be treated as a unit or separate body of knowledge but rather integrated into class activities as applications of the concept.

Standard: Demonstrate employability skills required by business and industry.

The following elements should be integrated throughout the content of this course.

1.1   Communicate effectively through writing, speaking, listening, reading, and interpersonal abilities.

Person-to-Person Etiquette	Telephone and Email Etiquette	Cell Phone and Internet Etiquette	Communicating At Work	Listening
Interacting with Your Boss	Telephone Conversations	Using Blogs	Improving Communication Skills	Reasons, Benefits, and Barriers
Interacting with Subordinates	Barriers to Phone conversations	Using Social Media	Effective Oral Communication	Listening Strategies
Interacting with Co-workers	Making and Returning Calls		Effective Written Communication	Ways We Filter What We Hear
Interacting with Suppliers	Making Cold Calls		Effective Nonverbal Skills	Developing a Listening Attitude
	Handling Conference Calls		Effective Word Use	Show You Are Listening
	Handling Unsolicited Calls		Giving and Receiving Feedback	Asking Questions
				Obtaining Feedback
				Getting Others to Listen

Georgia Department of Education

Nonverbal Communication	Written Communication	Speaking	Applications and Effective Résumés
Communicating Nonverbally	Writing Documents	Using Language Carefully	Completing a Job Application
Reading Body Language and mixed Messages	Constructive Criticism in Writing	One-on-One Conversations	Writing a Cover Letter
Matching Verbal and Nonverbal communication		Small Group Communication	Things to Include in a Résumé
Improving Nonverbal Indicators		Large Group Communication	Selling Yourself in a Résumé
Nonverbal Feedback		Making Speeches	Terms to Use in a Résumé
Showing Confidence Nonverbally		Involving the Audience	Describing Your Job Strengths
Showing Assertiveness		Answering Questions	Organizing Your Résumé
		Visual and Media Aids	Writing an Electronic Résumé
		Errors in Presentation	Dressing Up Your Résumé

1.2 Demonstrate creativity by asking challenging questions and applying innovative procedures and methods.

Teamwork and Problem Solving	Meeting Etiquette
Thinking Creatively	Preparation and Participation in Meetings
Taking Risks	Conducting Two-Person or Large Group Meetings
Building Team Communication	Inviting and Introducing Speakers
	Facilitating Discussions and Closing
	Preparing Visual Aids
	Virtual Meetings

1.3 Exhibit critical thinking and problem solving skills to locate, analyze and apply information in career planning and employment situations.

Problem Solving	Customer Service	The Application Process	Interviewing Skills	Finding the Right Job
Transferable Job Skills	Gaining Trust and Interacting with Customers	Providing Information, Accuracy and Double Checking	Preparing for an Interview	Locating Jobs and Networking
Becoming a Problem Solver	Learning and Giving Customers What They Want	Online Application Process	Questions to Ask in an Interview	Job Shopping Online
Identifying a Problem	Keeping Customers Coming Back	Following Up After Submitting an Application	Things to Include in a Career Portfolio	Job Search Websites
Becoming a Critical Thinker	Seeing the Customer's Point	Effective Résumés:	Traits Employers are Seeking	Participation in Job Fairs
Managing	Selling Yourself and the Company	Matching Your Talents to a Job	Considerations Before Taking a Job	Searching the Classified Ads
	Handling Customer Complaints	When a Résumé Should be Used		Using Employment Agencies
	Strategies for Customer Service			Landing an Internship
				Staying Motivated to Search

1.4   Model work readiness traits required for success in the workplace including integrity, honesty, accountability, punctuality, time management, and respect for diversity.

Workplace Ethics	Personal Characteristics	Employer Expectations	Business Etiquette	Communicating at Work
Demonstrating Good Work Ethic	Demonstrating a Good Attitude	Behaviors Employers Expect	Language and Behavior	Handling Anger
Behaving Appropriately	Gaining and Showing Respect	Objectionable Behaviors	Keeping Information Confidential	Dealing with Difficult Coworkers
Maintaining Honesty	Demonstrating Responsibility	Establishing Credibility	Avoiding Gossip	Dealing with a Difficult Boss
Playing Fair	Showing Dependability	Demonstrating Your Skills	Appropriate Work Email	Dealing with Difficult Customers
Using Ethical Language	Being Courteous	Building Work Relationships	Cell Phone Etiquette	Dealing with Conflict
Showing Responsibility	Gaining Coworkers' Trust		Appropriate Work Texting	
Reducing Harassment	Persevering		Understanding Copyright	
Respecting Diversity	Handling Criticism		Social Networking	
Making Truthfulness a Habit	Showing Professionalism			
Leaving a Job Ethically				

1.5   Apply the appropriate skill sets to be productive in a changing, technological, diverse workplace to be able to work independently and apply team work skills.

Expected Work Traits	Teamwork	Time Management
Demonstrating Responsibility	Teamwork Skills	Managing Time
Dealing with Information Overload	Reasons Companies Use Teams	Putting First Things First
Transferable Job Skills	Decisions Teams Make	Juggling Many Priorities
Managing Change	Team Responsibilities	Overcoming Procrastination
Adopting a New Technology	Problems That Affect Teams	Organizing Workspace and Tasks
	Expressing Yourself on a Team	Staying Organized
	Giving and Receiving Constructive Criticism	Finding More Time
		Managing Projects
		Prioritizing Personal and Work Life

1.6   Present a professional image through appearance, behavior and language.

On-the-Job Etiquette	Person-to-Person Etiquette	Communication Etiquette	Presenting Yourself
Using Professional Manners	Meeting Business Acquaintances	Creating a Good Impression	Looking Professional
Introducing People	Meeting People for the First Time	Keeping Phone Calls Professional	Dressing for Success
Appropriate Dress	Showing Politeness	Proper Use of Work Email	Showing a Professional Attitude
Business Meal Functions		Proper Use of Cell Phone	Using Good Posture
Behavior at Work Parties		Proper Use in Texting	Presenting Yourself to Associates
Behavior at Conventions			Accepting Criticism

International Etiquette			Demonstrating Leadership
Cross-Cultural Etiquette			
Working in a Cubicle			

Support of CTAE Foundation Course Standards and Georgia Standards of Excellence L9-10RST 1-10 and L9-10WHST 1-10:
Georgia Standards of Excellence ELA/Literacy standards have been written specifically for technical subjects and have been adopted as part of the official standards for all CTAE courses.

Course Standard 2

TDL-MM-2
Describe the process of receiving products.
  2.1   Describe the essential activities of receiving.
  2.2   Identify and describe the procedures for handling in-bound trucks.
  2.3   Describe load and security conditions prior to unloading.
  2.4   List and describe standard product receipt documents.
  2.5   Describe procedures for checking and reporting inbound products during unloading.

Course Standard 3

TDL-MM-3
Construct knowledge related to proper product storage techniques based on product life, risk of damage, hazards, and weight and size.
  3.1   Describe methods of determining the destination and direction of unloaded products.
  3.2   Illustrate the key issues affecting forms in which products are stored.
  3.3   Describe the forms in which products are stored.
  3.4   Discuss other methods of storage and retrieval.
  3.5   Construct a diagram and describe how an automated storage and retrieval system operates.

Course Standard 4

TDL-MM-4
Synthesize knowledge of order processing in terms of picking processes and how they impact warehouse operations.
  4.1   Describe best practices in order cycle and procurement process, including information flow.
  4.2   Explain pick ticket inspection.
  4.3   Identify and explain processes for accurately pulling products from storage identified in pick ticket.
  4.4   Explain how audits are conducted to ensure pulled products are as ordered.
  4.5   Describe staging of pulled products for shipping.
  4.6   Describe steps involved in developing a packing manifest.

Course Standard 5

TDL-MM-5
Develop a logical argument of various types of packaging materials best suited for different product size, weight, function and design for shipment.
  5.1   Identify and demonstrate selecting the most appropriate and current packing material to package products, when necessary.

5.2 Describe the selection of packaging tools best suited for handling and packaging products.
5.3 Explain typical steps to protect product from weather.
5.4 Describe process to ensure that outbound product counts are accurate and products are free from defects.
5.5 Describe process for verifying outbound product counts against customer orders.
5.6 Describe correct product labeling in accordance with domestic and international regulations and company policy.
5.7 Identify and explain the steps to verify that the right packages are securely loaded in the correct trailer.
5.8 Identify and explain the steps to ensure that packages are securely loaded into trailers and correctly distributed based on safe loading procedures.

Course Standard 6

TDL-MM-6
Hypothesize how inventory control affects overall operations.
6.1 Describe fundamentals of inventory control.
6.2 List and explain the main inventory control systems.
6.3 Explain methods of accurate counting.
6.4 Describe methods for capturing logistics information.
6.5 Describe "reverse" logistics.

Course Standard 7

TDL-MM-7
Discuss safe handling of hazardous materials, including classification, regulations, specifications, and methods of shipping and routing of dangerous goods.
7.1 Explain government regulations related to hazardous materials handling.
7.2 Describe safe work practices for unloading and loading hazardous materials.
7.3 Discuss government and other safe work practices for transfer and storage of hazardous materials.
7.4 Describe how hazardous materials are identified in shipping documentation.

Course Standard 8

TDL-MM-8
Discuss and analyze common transportation modes used to transport goods and cargo, including air, marine, rail, pipeline, and intermodal.
8.1 Describe the modes of transportation and their advantages and disadvantages.
8.2 Describe the main considerations in determining the best mode.
8.3 Explain how to use the information on performance of the different modes for rapid decision making.
8.4 Illustrate examples of transportation documentation.

Course Standard 9

TDL-MM-9
Demonstrate understanding of concepts related to dispatch, routing, and tracking operations, and basic customs terminology and documentation.
9.1 Explain shipping documentation.
9.2 Describe main factors related to vehicle routing.
9.3 Describe ways to track cargo within yard.

9.4 Describe ways to track cargo en route.
9.5 Describe key features of intermodal transportation.
9.6 Summarize basic customs terminology and documentation.

Course Standard 10

TDL-MM-10

Apply basic measurement and conversion techniques to handle and ship materials.
10.1 Discuss and perform the proper procedures to apply the significance of weight of materials for both incoming and outgoing shipments.
10.2 Compare and contrast the three types of scales found in most warehouses.
10.3 Convert a given U.S. standard measurement to a global metric unit of measurement utilizing basic formulas for conversion.

Course Standard 11

TDL-MM-11

Utilize current and acceptable abbreviations and terminology related to proper communications within distribution, logistics, and supply chain management.
11.1 Identify and properly use the following terms accurately in distribution, logistics, and supply chain management communications.
   a. Logistics
   b. Supply Chain Management
   c. 3PL (3rd Party Logistics Provider)
   d. Freight Forwarder
   e. Distribution Centers
   f. Quality Control
   g. Six Sigma
   h. LEAN
   i. Pick to Light
   j. Vertical Lift Module
   k. Automatic Storage and Retrieval System
   l. Order Picking
   m. Warehouse Management System
   n. Yard Management System
   o. Transportation Management System
   p. Barcodes
   q. Radio Frequency Identification

Course Standard 12

TDL-MM-12

Understand and apply terminology used in logistics and supply chain management.
12.1 Define logistics terminology including: outsourcing, asset recovery, repayment terms, bill-of-lading, invoice, prepaid terms, charged back, tariffs, pricing, terms of sale, free-on board, freight claim, freight costs, manifest.
12.2 Define supply chain management terminology including: supply chain strategy, distribution network, motor carriers, railroads, airlines, ocean carriers, pipelines, cross-dock distribution, capacity management, capacity planning, capacity strategy, quality programs, demand forecasting, order fulfillment, procurement, salvage and scrap disposal.

Course Standard 13

TDL-MM-13

Examine how related student organizations are integral parts of career and technology education courses through leadership development, school and community service projects, and competitive events.

13.1 Explain the purpose, mission, objectives, motto, colors, official dress and other distinguishing characteristics of SkillsUSA.

13.2 Explain how participation in SkillsUSA can promote lifelong responsibility for community service, growth, and development.

13.3 Explore the impact and opportunities that SkillsUSA can develop to bring business and industry together with education in a positive working relationship through innovative leadership and career development programs.

13.4 Explore the local, state, and national opportunities available to students through participation in SkillsUSA including but not limited to conferences, competitions, community service, philanthropy, and other SkillsUSA activities.