



# Logistics Planning & Management

Career Cluster	Transportation, Distribution & Logistics
Course Code	20151
Prerequisite(s)	None
Credit	.5 or 1
Program of Study and Sequence	Foundational course, <b>Logistics Planning &amp; Management</b> , Pathway Course or Capstone Experience
Student Organization	SkillsUSA
Coordinating Work-Based Learning	NA
Industry Certifications	NA
Dual Credit or Dual Enrollment	NA
Teacher Certification	Transportation, Distribution & Logistics Cluster Endorsement
Resources	

## Course Description:

Logistics Planning & Management prepares students for entry into the warehouse and distribution career field. Course content emphasizes a deep understanding of the dynamics of distribution and logistics operations, the warehousing skills needed for the tracking and managing of inventory, and the problem-solving skills used by logisticians in today's complex business environments. Upon completion of this course, a proficient student will have a thorough understanding of safety, tools, equipment, operations, processes, customer fulfillment, product lifecycle, future trends, and regulatory issues in the industry.

## Program of Study Application:

Logistics Planning & Management is a cluster course in the Transportation, Distribution and Logistics pathway.

**Course Standards**

**LPM 1 Students will recognize occupational safety guidelines.**

<i>Webb Level</i>	<i>Sub-indicator</i>	<i>Integrated Content</i>
Level 1: Recall	<p>LPM 1.1 Demonstrate safety practices as identified in Occupational Safety and Health Administration (OSHA) and Environmental Protection Agency (EPA) requirements</p> <p>Examples:</p> <ul style="list-style-type: none"> <li>• Adhere to responsibilities, regulations, and OSHA policies regarding reporting of accidents and observed hazards, and regarding emergency response procedures.</li> <li>• Interpret Safety Data Sheets (SDS) to determine any hazards related to materials handled. Use appropriate signs and symbols to identify hazardous materials within warehouses and during transportation of the materials.</li> <li>• Maintain a portfolio record of written safety examinations and equipment examination for which the student has passed an operational checkout by the instructor.</li> <li>• Identify dangerous goods and discuss how they influence warehouse and transportation decisions.</li> <li>• Determine the appropriate corrective actions if faced with a hazardous situation, as outlined by the <i>Emergency Response Guidebook</i> published by the U.S. Department of Transportation.</li> </ul>	<ul style="list-style-type: none"> <li>• OSHA 10</li> <li>• “Right to Know” Federal Law</li> </ul>

**Notes**

**LPM 2 Students will analyze and categorize Logistics and Transportation Operations.**

<i>[Webb Level]</i>	<i>Sub-indicator</i>	<i>Integrated Content</i>
Level 2: Skill/Concept	<p>LPM 2.1 Research the four subdivisions of logistics in light of organizational management practices</p> <ul style="list-style-type: none"> <li>• Prepare an explanatory paper or presentation that discusses the similarities and differences between the subdivisions of logistics:                             <ul style="list-style-type: none"> <li>○ Business logistics</li> <li>○ Military logistics</li> <li>○ Event logistics</li> <li>○ Service logistics</li> </ul> </li> </ul>	<p><a href="#">P21: Partnership for 21st Century Skills</a></p>
Level 3: Strategic Thinking	<p>LPM 2.2 Synthesize information from textbook, print and online industry sources</p> <ul style="list-style-type: none"> <li>• Describe each of the following:                             <ul style="list-style-type: none"> <li>○ Transportation</li> <li>○ Warehouse and storage</li> <li>○ Intermodal freight transport</li> <li>○ Materials handling</li> <li>○ Inventory control</li> <li>○ Order fulfillment</li> <li>○ Inventory forecasting</li> <li>○ Production planning/scheduling</li> <li>○ Customer service</li> <li>○ Facility location</li> <li>○ Return goods handling</li> <li>○ Parts and service support</li> <li>○ Salvage and scrap disposal</li> </ul> </li> </ul>	<p>P21: Partnership for 21st Century Skills</p>
Level 3: Strategic Thinking	<p>LPM 2.3 Describe tradeoffs that occur between transportation and inventory costs</p> <p>Example:</p> <ul style="list-style-type: none"> <li>• Drawing on examples from real products and companies, explain when it is more profitable to use more expensive transportation and maintain smaller inventory, and when it is more advantageous to use cheaper transportation and maintain larger inventories. Discuss the application of key concepts such as Just-in-Time (JIT) strategy, lean dynamics, and Kanban systems.</li> </ul>	<p>P21: Partnership for 21st Century Skills</p>

<p>Level 3: Strategic Thinking</p>	<p>LPM 2.4 Demonstrate the ability to calculate and explain to others the purchase cost, ordering cost, and holding cost for a given material or product within the supply chain Example:</p> <ul style="list-style-type: none"> <li>• Determine total cost as a function of other costs and demonstrate the effects on profit for a specified price and quantity.</li> </ul>	<p>P21: Partnership for 21st Century Skills</p>
<p>Level 3: Strategic Thinking</p>	<p>LPM 2.5 Perform inventory calculations to minimize costs as would a logistics manager for a given company</p> <ul style="list-style-type: none"> <li>• Using algebraic reasoning and appropriate units, determine the economic order quantity (EOQ) and reorder point (ROP) for a given product. Research forecasting models for the specified product and to understand how companies predict EOQ and ROP using logistics management.</li> </ul>	<p>P21: Partnership for 21st Century Skills</p>

**Notes**

**LPM 3. Students will learn warehousing practices used in logistics and management.**

<i>Webb Level</i>	<i>Sub-indicator</i>	<i>Integrated Content</i>
Level 3: Strategic Thinking	LPM 3.1 Compare and contrast the warehousing requirements for a variety of different products Examples: <ul style="list-style-type: none"> <li>• Perishable foods</li> <li>• Hazardous chemicals</li> <li>• Large items like furniture and appliances</li> <li>• School supplies</li> <li>• Seasonal items</li> <li>• Subassemblies for the manufacture of a given product.</li> </ul>	P21: Partnership for 21st Century Skills
Level 3: Strategic Thinking	LPM 3.2 Describe various warehouse layouts and equipment used to move materials in each	P21: Partnership for 21st Century Skills
Level 2: Skill/Concept	LPM 3.3 List categories of aisle spacing and describe the advantages and disadvantages of each	P21: Partnership for 21st Century Skills
Level 2: Skill/Concept	LPM 3.4 Demonstrate the ability to complete and interpret warehouse documents including, but not limited to, packing slips, bills of lading, advance shipment notices, distribution sheets, pick lists, invoices, special orders, and inventory forms	P21: Partnership for 21st Century Skills
Level 2: Skill/Concept	LPM 3.5. Differentiate between bulk and rack storage, and indicate situations when each is employed.	P21: Partnership for 21st Century Skills

**Notes**

**LPM 4. Students will learn regulations associated with Logistics and Management.**

<i>Webb Level</i>	<i>Sub-indicator</i>	<i>Integrated Content</i>
Level 4: Extended Thinking	<p>LPM 4.1 List international, national, state, and local agencies and organizations that regulate some part of the supply chain and the role played by each. Indicate over what areas each agency has jurisdiction</p> <p>Examples:</p> <ul style="list-style-type: none"> <li>• U.S. Department of Transportation (DOT)</li> <li>• U. S. Customs and Border Protection (CBP)</li> <li>• Homeland Security (HS)</li> <li>• Environmental Protection Agency (EPA)</li> <li>• Occupational Safety and Health Administration (OSHA)</li> <li>• World Shipping Council</li> <li>• United Nations, including the International Maritime Organization (IMO)</li> <li>• International Organization for Standardization (ISO)</li> <li>• World Customs Organization (WCO)</li> <li>• City and county laws and ordinances</li> <li>• State laws</li> </ul>	P21: Partnership for 21st Century Skills
Level 3: Strategic Thinking	LPM 4.2 Analyze the impact of international trade agreements on logistics decisions	P21: Partnership for 21st Century Skills
Level 2: Skill/Concept	<p>LPM 4.3 Research International Commercial Terms (INCOTERMS®) developed by the International Chamber of Commerce</p> <p>Example:</p> <ul style="list-style-type: none"> <li>• Create a table or chart to indicate what each of the three letter standard terms means by delineating the respective obligations of the buyer and seller involved in the delivery of goods from the seller to the buyer.</li> </ul>	P21: Partnership for 21st Century Skills

**Notes**

**LPM 5. Students will learn problem solving trends associated with Logistics and Management.**

Webb Level	Sub-indicator	Integrated Content
<p>Level 3: Strategic Thinking</p>	<p>LPM 5.1 Solve given problems related to transportation of goods and warehousing by evaluating data and presenting solutions or recommending appropriate decisions Example:</p> <ul style="list-style-type: none"> <li>• Use spreadsheets and/or other software in calculating “what if” scenarios as appropriate. Types of problems should include scenarios such as:                             <ol style="list-style-type: none"> <li>a. Selecting routes and modes of transportation between a distribution center and various markets</li> <li>b. Calculating the carbon footprint of similar products shipped from different locations and by different modes of transportation</li> <li>c. Optimizing warehouse usage</li> <li>d. Planning for the moving and handling of hazardous goods</li> <li>e. Analyzing the impact of natural disasters on supply chain</li> <li>f. Developing strategies for working toward the sustainable use of specific materials and modes of transportation.</li> </ol> </li> </ul>	<p>P21: Partnership for 21st Century Skills</p>
<p>Level 3: Strategic Thinking</p>	<p>LPM 5.2 Plan for the storage, movement, and delivery of a specified good or service from one location to another Examples:</p> <ul style="list-style-type: none"> <li>• Using logistics data and applying concepts learned in the course, justify the tradeoff decisions (i.e., mode of transport, holding time, delivery constraints such as fuel cost) in a proposed plan, coherently explaining the logic behind each choice as if presenting to a senior manager.</li> <li>• Outline a plan for fulfilling an order for a personal computer by a fixed date and transporting it through customs to a purchaser in a foreign country.</li> </ul>	<p>P21: Partnership for 21st Century Skills</p>

**Notes**

**LPM 6. Students will learn trends associated with Logistics and Management.**

Webb Level	Sub-Indicator	Integrated Content
Level 3; Strategic Thinking	<p>LPM 6.1 Analyze case studies of the logistics operations of various retail companies to see how they plan for and adjust their operations to remain competitive</p> <p>Example:</p> <ul style="list-style-type: none"> <li>• Compare a regional company with companies such as Amazon, WalMart, and Kroger.</li> </ul>	P21: Partnership for 21st Century Skills
Level 4: Extended Thinking	<p>LPM 6.2 Using websites and journals from professional organizations related to transportation, distribution and logistics, identify trends that are impacting local, regional, national, and international supply chains</p> <p>Examples:</p> <ul style="list-style-type: none"> <li>• Trends could include such factors as rising fuel costs, movements toward fully automated warehouses, and greening the supply chain.</li> <li>• Summarize research in an informative essay that includes:               <ul style="list-style-type: none"> <li>○ description of the trend and explanation of how it affects the supply chain,</li> <li>○ examples of how various businesses are responding to the trend, and</li> <li>○ an outline of the information that must be considered before a business implements any change, including a formal cost-benefit analysis.</li> </ul> </li> </ul>	P21: Partnership for 21st Century Skills

**Notes**