

**PROGRAM CONCENTRATION: Architecture, Construction,  
Communications & Transportation**  
**CAREER PATHWAY: Transportation Logistical Support**  
**COURSE TITLE: Foundations of Transportation &  
Logistics**

Foundations of Transportation & Logistics is the beginning course for the Transportation Logistical Pathways. It is also appropriate for students enrolled in any career pathway who plan to own and operate their own businesses. The course will help students build a strong knowledge base and develop skills related to logistics in the transportation sector. Mastery of these standards through project-based learning and leadership development activities of the Career and Technical Student Organizations will help prepare students with a competitive edge for the transportation logistics marketplace.

Note: For a more comprehensive and authoritative report of national academic related skills please refer to the National Automotive Technicians Education Foundation's document "APPLIED ACADEMIC & WORKPLACE SKILLS FOR AUTOMOBILE TECHNICIANS" available at [www.natef.org](http://www.natef.org)

**ACT-FTL-1: Demonstrates knowledge of safety, OSHA, EPA issues and procedures.**

***Academic Standard:***

*ELA11W1 The student produces writing that establishes an appropriate organizational structure, sets a context and engages the reader, maintains a coherent focus throughout, and signals a satisfying closure.*

***National Academic Standards (NATEF):***

*LA038 The technician collects and organizes oral and written information based on discussions, notes, observations, personal experiences, and data collection that will assist in the problem analysis and solution process.*

*MA116: The technician can convert test readings that are in decimal or fraction form to a ratio or percent form for comparison with the manufacturer's specifications.*

*SC207: The technician develops and maintains an understanding of all federal, state, and local rules and regulations regarding environmental issues related to the work of the automobile technician. The technician uses such things as government impact statements, media information, and general knowledge of pollution and waste management to correctly use and dispose of products that result from the performance of a repair task.*

**ACT-FTL-2: Demonstrate use of tools, equipment, and instruments.**

***Academic Standard:***

*SCSh4. Students will use tools and instruments for observing, measuring, and manipulating scientific equipment and materials.*

***National Academic Standards (NATEF):***

*LA285 The technician can comprehend and apply information in operator's manuals to operate and maintain automotive tools and equipment.*

*MA176 The technician interprets symbols to determine compliance with the manufacturer's specifications.*

*SC198 The technician can demonstrate an understanding of the correct procedure to measure the electrical parameters of voltage, current, resistance, or power.*

### **ACT-FTL-3: Describe shop organization, management, and workflow systems.**

#### ***Academic Standard:***

*ELA10LSV2 The student formulates reasoned judgments about written and oral communication in various media genres. The student delivers focused, coherent, and polished presentations that convey a clear and distinct perspective, demonstrate solid reasoning, and combine traditional rhetorical strategies of narration, exposition, persuasion, and description.*

#### ***National Academic Standards (NATEF):***

*LA283 The technician uses computerized and other databases to obtain system information.*

*MA097 The technician can construct a chart, table, or graph that depicts a range of performance characteristics of various system operational conditions that can be used for comparisons.*

*SC042 The technician uses the information in service manual charts, tables, or graphs to determine the manufacturer's specifications for system(s) operation(s) and the appropriate repair/replacement procedure and/or part.*

### **ACT-FTL-4: Describe and explain the properties of electricity.**

#### ***Academic Standard:***

*ELA10LSV2 The student formulates reasoned judgments about written and oral communication in various media genres. The student delivers focused, coherent, and polished presentations that convey a clear and distinct perspective, demonstrate solid reasoning, and combine traditional rhetorical strategies of narration, exposition, persuasion, and description.*

#### ***National Academic Standards (NATEF):***

*LA074 The technician composes complete and accurate paragraphs that include information regarding symptoms, diagnosis results, and appropriate details when preparing warranty claims and information for inclusion on work orders.*

*MA229 The technician can identify the specific cause of the described problem by generating conclusions based on known symptoms related to the problem.*

*SC177 The technician can demonstrate an understanding of and explain the properties of electricity that impact the lighting, engine management, and other electrical systems in the vehicle.*

### **ACT-FTL-5: Demonstrates knowledge of related physical science principles.**

***Academic Standard:***

*SCSh2. Students will use standard safety practices for all classroom laboratory and field investigations.*

***National Academic Standards (NATEF):***

*LA038 The technician collects and organizes oral and written information based on discussions, notes, observations, personal experiences, and data collection that will assist in the problem analysis and solution process.*

*MA228 The technician can analyze and solve problems requiring the use of fractions, decimals, ratios, or percentages by a direct or indirect variation of the numerical elements of the problem.*

*SC233The technician can demonstrate an understanding of the kinetic and potential energy relationships that occur in valve systems, ignition systems, and other stored energy systems such as springs and fuels.*

### **ACT-FTL-6: Demonstrates understanding of reference material usage electronic and published.**

***Academic Standard:***

*ELA10LSV2 The student formulates reasoned judgments about written and oral communication in various media genres. The student delivers focused, coherent, and polished presentations that convey a clear and distinct perspective, demonstrate solid reasoning, and combine traditional rhetorical strategies of narration, exposition, persuasion, and description.*

***National Academic Standard (NATEF):***

*LA283 The technician uses computerized and other databases to obtain system information.*

### **ACT-FTL-7: Demonstrates knowledge of mechanical systems.**

***Academic Standard:***

*SCSh2. Students will use standard safety practices for all classroom laboratory and field investigations.*

***National Academic Standards (NATEF):***

*LA022 The technician uses prior knowledge of similar situations to determine the specific cause(s) of the problem.*

*SC349The technician can demonstrate an understanding of the process of a vehicle's acceleration and deceleration as a function of weight and available power.*

## **ACT-FTL-8: Demonstrate knowledge of transportation entrepreneurship management.**

### ***Academic standard:***

*SSEIN1 The student will explain why individuals, businesses and governments trade goods and services.*

### ***National Academic Standards (NATEF):***

*LA267 The technician supplies clarifying information to customers, associates, the parts supplier, and the supervisor.*

*MA174 The technician can interpret charts, tables, or graphs to determine the manufacturer's specifications for a given system.*

*SC012 The technician evaluates the waste products resulting from a repair task and handles the disposal of materials in accordance with applicable federal, state, and local rules and regulations.*

## **ACT-FTL-9: Exhibits appropriate oral and written communication on personal and professional levels.**

### ***Academic standard:***

*ELA10LSV2 The student formulates reasoned judgments about written and oral communication in various media genres. The student delivers focused, coherent, and polished presentations that convey a clear and distinct perspective, demonstrate solid reasoning, and combine traditional rhetorical strategies of narration, exposition, persuasion, and description.*

### ***National Academic Standard (NATEF):***

*LA267 The technician supplies clarifying information to customers, associates, the parts supplier, and the supervisor.*

## **ACT-FTL-10: Determines problem-solving strategies.**

### ***Academic Standards:***

*ELA11LSV2: The student formulates reasoned judgments about written and oral communication in various media genres. The student delivers focused, coherent, and polished presentations that convey a clear and distinct perspective, demonstrate solid reasoning, and combine traditional rhetorical strategies of narration, exposition, persuasion, and description.*

*MM3P. Students will solve problems (using appropriate technology).*

*SCSh3. Students will identify and investigate problems scientifically.*

### ***National Academic Standard (NATEF):***

*LA283 The technician uses computerized and other databases to obtain system information.*

### **CTAE Foundation Skills**

The Foundation Skills for Career, Technical and Agricultural Education (CTAE) are critical competencies that students pursuing any career pathway should exhibit to be successful. As core standards for all career pathways in all program concentrations, these skills link career, technical and agricultural education to the state's academic performance standards.

The CTAE Foundation Skills are aligned to the foundation of the U. S. Department of Education's 16 Career Clusters. Endorsed by the National Career Technical Education Foundation (NCTEF) and the National Association of State Directors of Career Technical Education Consortium (NASDCTEc), the foundation skills were developed from an analysis of all pathways in the sixteen occupational areas. These standards were identified and validated by a national advisory group of employers, secondary and postsecondary educators, labor associations, and other stakeholders. The Knowledge and Skills provide learners a broad foundation for managing lifelong learning and career transitions in a rapidly changing economy.

**CTAE-FS-1 Technical Skills:** Learners achieve technical content skills necessary to pursue the full range of careers for all pathways in the program concentration.

**CTAE-FS-2 Academic Foundations:** Learners achieve state academic standards at or above grade level.

**CTAE-FS-3 Communications:** Learners use various communication skills in expressing and interpreting information.

**CTAE-FS-4 Problem Solving and Critical Thinking:** Learners define and solve problems, and use problem-solving and improvement methods and tools.

**CTAE-FS-5 Information Technology Applications:** Learners use multiple information technology devices to access, organize, process, transmit, and communicate information.

**CTAE-FS-6 Systems:** Learners understand a variety of organizational structures and functions.

**CTAE-FS-7 Safety, Health and Environment:** Learners employ safety, health and environmental management systems in corporations and comprehend their importance to organizational performance and regulatory compliance.

**CTAE-FS-8 Leadership and Teamwork:** Learners apply leadership and teamwork skills in collaborating with others to accomplish organizational goals and objectives.

**CTAE-FS-9 Ethics and Legal Responsibilities:** Learners commit to work ethics, behavior, and legal responsibilities in the workplace.

**CTAE-FS-10 Career Development:** Learners plan and manage academic-career plans and employment relations.

**CTAE-FS-11 Entrepreneurship:** Learners demonstrate understanding of concepts, processes, and behaviors associated with successful entrepreneurial performance.