Cluster Knowledge and Skill Statement

Academic Foundations

Statement: Demonstrate achievement of cluster specific academic knowledge and skills required to pursue the full-range of career and post-secondary education opportunities within the career cluster.

Statement: High school graduation requirements and state standards must be met in addition to these academic knowledge and skills.
Cluster Knowledge and Skill Statement

Communications

Statement: Comprehend a broad range of reading materials containing technical concepts, knowledge, and vocabulary.

Performance Element: Explain the meaning of technical terms, vocabulary, and concepts in written text (reports, letters, books, e-mail, magazines).

Performance Element: Explain the meaning of technical terms, vocabulary, and concepts in technical forms and documents (policies and procedures, equipment manuals, health and safety documents).

Performance Element: Explain concepts and information expressed in numerical and graphic forms (tables, charts, graphs).

Statement: Locate, organize, and reference written information from various sources (books, journals, magazines, Internet) to answer questions, solve problems, and develop written and oral communication.

Performance Element: Locate written information from books, journals, and magazines.

Performance Element: Locate written information in electronic form including the Internet.

Performance Element: Organize information for use in preparing written and oral communications.

Performance Element: Document the source and proper reference for written information.

Statement: Compose multi-paragraph writing containing technical concepts, knowledge, and vocabulary.

Performance Element: Use correct spelling/grammar.

Performance Element: Use correct capitalization/punctuation.

Performance Element: Use proper organization and structure to achieve coherence.

Performance Element: Use technical terms & concepts correctly.

Performance Element: Incorporate and use reference information effectively and accurately.

Performance Element: Communicate main ideas and supporting facts and information effectively and completely to achieve purpose of communication.

Statement: Develop and incorporate tables, charts, graphs, and figures to support written and oral communications.

Performance Element: Develop and use tables and charts containing textual and numerical information.

Performance Element: Develop and use figures containing textual, numerical and graphical information.

Statement: Use information technology to design, produce and present written and multi-media
Cluster Knowledge and Skill Statement

**materials.**

Performance Element: Use word-processing software to develop text, charts, graphs, and figures.

Performance Element: Use presentation software to prepare visual support materials.

**Statement:** Comprehend a broad range of technical concepts, knowledge and vocabulary communicated orally.

Performance Element: Explain the meaning of technical terms, vocabulary, information, and concepts communicated in informal discussions.

Performance Element: Explain the meaning of technical terms, vocabulary, information, and concepts communicated in formal presentations.

**Statement:** Interpret nonverbal communications and messages.

Performance Element: Interpret eye contact, facial expressions, and posture.

Performance Element: Interpret gestures.

Performance Element: Interpret and explain the messages conveyed by the combination of verbal (pitch, tone, voice) and non-verbal communication.

**Statement:** Apply active listening skills in obtaining information and clarifying oral communications.

Performance Element: Paraphrase and repeat back information to confirm understanding.

Performance Element: Record and summarize information in written notes.

Performance Element: Ask questions to seek/confirm understanding.

Performance Element: Contribute relevant comments to improve the presentation and discussion of information.

**Statement:** Develop and deliver formal presentations using a broad range of technical concepts, knowledge, and vocabulary.

Performance Element: Use appropriate volume and rate.

Performance Element: Speak clearly.

Performance Element: Use correct grammar.

Performance Element: Use proper organization and structure to achieve coherence.

Performance Element: Use technical terms and concepts correctly.

Performance Element: Communicate main ideas and supporting information effectively to achieve purpose of communication.

Performance Element: Use visual aids and presentation technology to support formal presentations.
Cluster Knowledge and Skill Statement

Performance Element: Use effective verbal and non-verbal feedback strategies (asking questions, interpreting audience reactions) to engage discussion and adjust message and delivery.

Performance Element: Respond effectively to questions and comments on presentation.

Statement: Contribute effectively to group discussions including meetings.

Performance Element: Clarify purpose and objectives of meetings and discussions.

Performance Element: Speak clearly with appropriate volume and rate.

Performance Element: Use correct grammar.

Performance Element: Use technical terms and concepts correctly.

Performance Element: Communicate main ideas and supporting information effectively to achieve purpose of communication.

Performance Element: Show respect for others.

Performance Element: Take turns in speaking.

Performance Element: Stay on subject/task to achieve purpose and objectives of discussion.

Performance Element: Use effective verbal and non-verbal feedback strategies (asking questions, interpreting audience reactions) to engage discussion.

Performance Element: Respond effectively to questions and comments.
Cluster Knowledge and Skill Statement

Problem Solving and Critical Thinking

Statement: Formulate ideas, proposals and solutions to problems.

Performance Element: Clarify the problems or issues to be addressed and the objectives.

Performance Element: Identify constraints and parameters.

Performance Element: Obtain and analyze available information.

Performance Element: Generate alternative ideas, proposals, and solutions that would solve the problem.

Performance Element: Evaluate alternative solutions.

Performance Element: Identify the best solution based on risks, costs, and benefits.

Performance Element: Present the solution and the logic and rationale for the solution.

Statement: Analyze and evaluate ideas, proposals, and solutions to problems.

Performance Element: Confirm definition of problem and objectives.

Performance Element: Confirm constraints and parameters.

Performance Element: Evaluate the underlying assumptions.

Performance Element: Evaluate the quality of information used to support solution.

Performance Element: Evaluate the analysis of data used to support solution.

Performance Element: Evaluate the logic and reasoning used to develop solution.

Performance Element: Evaluate the risks, costs, and benefits of testing and implementing the solution.

Performance Element: Make recommendations on supporting, changing, or not supporting the solution.

Statement: Develop solutions to performance problems using a structured problem-solving process.

Performance Element: Describe the problem completely and accurately using data and graphs and charts.

Performance Element: Develop and present a comprehensive mapping of potential root and indirect causes (e.g., fishbone diagrams).

Performance Element: Identify and evaluate alternative solutions.

Performance Element: Test and evaluate best solutions.

Performance Element: Develop plans to fully implement solutions to address performance problem.
Cluster Knowledge and Skill Statement

Information Technology Applications

Statement: Create documents using word processing software.

- Performance Element: Demonstrate basic keyboarding skills.
- Performance Element: Open, create and save documents.
- Performance Element: Enter, format and edit text.
- Performance Element: Design and format pages.
- Performance Element: Develop and insert tables.
- Performance Element: Develop and insert figures/graphs.
- Performance Element: Print documents.

Statement: Enter and retrieve information from databases.

- Performance Element: Demonstrate basic keyboarding skills.
- Performance Element: Enter data into databases without errors.
- Performance Element: Retrieve data.
- Performance Element: Produce and print reports.

Statement: Create and use spreadsheets using spreadsheet software.

- Performance Element: Demonstrate basic keyboarding skills.
- Performance Element: Enter data into spreadsheet cells without error.
- Performance Element: Retrieve and list data in reports.
- Performance Element: Develop and use formulas.
- Performance Element: Produce pivot tables.
- Performance Element: Produce and print graphs.

Statement: Use geographic information systems software (e.g. represent data on maps).

- Performance Element: Demonstrate basic keyboarding skills.
- Performance Element: Locate physical addresses on maps.
- Performance Element: Estimate travel times and distances between two or more locations.
- Performance Element: Produce and print maps.

Statement: Develop and make presentations using presentation software.

- Performance Element: Open, create, and save presentations.
- Performance Element: Design and format slides.
- Performance Element: Enter and edit text.
- Performance Element: Develop and insert figures and graphs.
Cluster Knowledge and Skill Statement

Performance Element: Print slides and handouts.
Performance Element: Operate slide show.

Statement: Use electronic mail.
Performance Element: Send messages.
Performance Element: Access messages.
Performance Element: Forward and print messages.
Performance Element: Transfer attached files.
Performance Element: Access and save attached files.

Statement: Use Internet services to locate and retrieve information.
Performance Element: Locate information using search engines.
Performance Element: Navigate web sites using software functions.
Performance Element: Bookmark web addresses.
Performance Element: Print and download information.
Cluster Knowledge and Skill Statement

Transportation, Distribution and Logistics Systems

Statement: Explain the role and major functions of a TDL organization.

Performance Element: Describe and explain the mission of TDL organizations.

Performance Element: Explain the role of TDL organizations within the industry.

Performance Element: Define and explain the critical customers, suppliers, and stakeholders for the organization.

Performance Element: Explain the major competitive challenges faced by the organization in the industry.

Performance Element: Describe and explain the major internal functions and structure of the organization.

Statement: Define and explain the major measures used by a TDL organization to manage and improve performance.

Performance Element: Define and explain the measures for financial performance (e.g., profitability, cost reduction, asset utilization).

Performance Element: Define and explain the measures for market performance (e.g., customer and sales/service growth).

Performance Element: Define and explain the measures for service and internal operations performance (e.g., customer satisfaction, service quality, cycle time).

Performance Element: Define and explain the measures for organizational compliance and health, safety and environmental performance (e.g., audit findings, emissions, lost time accidents).

Statement: Explain the impact of economic, social, and technological changes on a TDL organization and its role in the TDL industry.

Performance Element: Explain the impact of economic changes including economic growth/decline, income growth, consumer confidence, interest rates, fuel and material costs).

Performance Element: Explain the impact of social changes including consumer attitudes and preferences, demographics, population shifts).

Performance Element: Explain the impact of technological changes including transportation and information technology.

Statement: Explain the role of risk management in reducing risks and improving performance in TDL organizations.

Performance Element: Explain the objectives of risk management programs.

Performance Element: Describe the major types of loss exposures for a TDL organization including property, liability, personnel, and net income.

Performance Element: Describe the approaches for managing organizational risks.

Statement: Explain the roles and functions of government in regulating and supporting a TDL organizations within the industry.
Cluster Knowledge and Skill Statement

Performance Element: Explain roles in regulating domestic transportation operations.

Performance Element: Explain roles in regulating international transportation operations.

Performance Element: Explain roles in public transportation infrastructure management.

Performance Element: Explain the roles in health, safety and environmental management.

Statement: **Manage customer relationships (internal and/or external customers).**

Performance Element: Determine customer needs and requirements.

Performance Element: Determine customer satisfaction and fulfillment of customer requirements.

Performance Element: Respond to customer problems and complaints.

Statement: **Develop and manage plans and budgets to accomplish organizational goals and objectives.**

Performance Element: Develop work plans and budgets that allocate people and resources.

Performance Element: Develop reports on performance and resource utilization.

Performance Element: Modify plans and budgets to meet goals and objectives.

Statement: **Develop plans to improve organizational performance including customer satisfaction and service/operations performance.**

Performance Element: Identify and describe most critical performance problems.

Performance Element: Identify opportunities for improvement.

Performance Element: Use structured problem-solving process to develop improvement plans.

Statement: **Maintain compliance with organizational policies and government laws and regulations.**

Performance Element: Identify and explain relevant organizational policies and government laws and regulations for specific functions within TDL organizations.

Performance Element: Determine compliance with policies and regulations.

Performance Element: Make recommendations on improving compliance.
Cluster Knowledge and Skill Statement

Safety, Health, and Environmental

Statement: Describe the major regulatory areas (e.g. personal protective equipment) and government laws and regulations.

Performance Element: Describe the major areas addressed in health and safety laws and regulations.

Performance Element: Describe the major areas addressed in environmental management laws and regulations.

Statement: Explain the major components and benefits of health, safety and environmental management systems in TDL organizations.

Performance Element: Describe the major components.

Performance Element: Explain the role and benefits of each component.

Statement: Explain how government agencies promote compliance and improved health, safety and environmental performances in TDL organizations.

Performance Element: Describe the major measures and types of data used by government agencies to measure and monitor health, safety, and environmental risks and performance.

Performance Element: Explain how government can ensure compliance and promote improved performance in TDL organizations.

Statement: Explain how TDL organizations promote improved health, safety, and environmental performance in logistics, distribution, and transportation organizations.

Performance Element: Describe the major measures and types of data used by organizations to measure and monitor health, safety, and environmental risks and performance.

Performance Element: Explain how organizations can improve their performance.

Statement: Demonstrate personal commitment to safety, health and environment policies and procedures.

Performance Element: Maintain knowledge of organizational safety, health, and environmental management policies and procedures.

Performance Element: Follow organizational policies and procedures.

Performance Element: Educate and orient other workers.

Performance Element: Maintain a safe work area.

Performance Element: Identify and describe workplace hazards.

Performance Element: Perform regular audits and inspections to maintain compliance.

Performance Element: Maintain documentation on compliance.

Performance Element: Identify and report health, safety, and environmental problems.
Cluster Knowledge and Skill Statement

Performance Element: Participate in accident/incident investigations.

Statement: Develop plans to improve health, safety, and environmental performance.

Performance Element: Identify and describe most critical performance problems.

Performance Element: Identify opportunities for improvement.

Performance Element: Use structured problem-solving process to develop improvement plans.
Leadership and Teamwork

Statement: Provide group leadership.

Performance Element: Work with others to develop and gain commitment to team goals.

Performance Element: Motivate team members to achieve goals.

Performance Element: Promote the full involvement and utilization of team members.

Performance Element: Distribute responsibility and work load fairly.

Statement: Collaborate with others.

Performance Element: Demonstrate commitment to and a positive attitude toward team goals.

Performance Element: Take responsibility for shared group and individual work tasks.

Performance Element: Complete your share of the work.

Performance Element: Assist team members in completing their work.

Performance Element: Adapt effectively to changes in projects and work activities.

Performance Element: Negotiate effectively to arrive at decisions.

Performance Element: Treat people with respect.

Performance Element: Provide constructive praise and criticism.

Performance Element: Demonstrate sensitivity to and value for diversity.

Performance Element: Resolve conflicts.

Performance Element: Manage stress and control emotions.

Statement: Conduct and participate in meetings.

Performance Element: Develop meeting objectives and agenda.

Performance Element: Assign responsibilities for preparing materials and leading discussions.

Performance Element: Prepare materials for leading discussion.

Performance Element: Assemble and distribute meeting materials.

Performance Element: Attend scheduled meetings on time.

Performance Element: Conduct meeting to achieve objectives within scheduled time.

Performance Element: Demonstrate effective communication skills in meetings.

Performance Element: Produce and distribute meeting minutes including decisions and next steps.
Cluster Knowledge and Skill Statement

Ethics and Legal Responsibilities

Statement: **Demonstrate awareness of legal responsibilities for different roles and functions within organizations.**

Performance Element: Explain legal responsibilities of employees to comply with government laws and regulations.

Performance Element: Explain the major government laws and regulations that define legal responsibilities for different roles and functions including commercial, consumer, health, safety, and environmental, and employment laws and regulations.

Statement: **Recognize differences in ethical and legal responsibilities.**

Performance Element: Explain differences between ethical and legal responsibilities for different roles and functions.

Performance Element: Explain employer expectations on ethical workplace behavior and how they are expressed in organizational policies and culture.

Performance Element: Explain employee differences in personal or professional ethics.

Statement: **Apply ethical reasoning to different workplace situations.**

Performance Element: Evaluate alternative responses to workplace situations based on legal responsibilities and employer policies.

Performance Element: Evaluate alternative responses to workplace situations based on personal or professional ethical responsibilities.

Performance Element: Determine and explain most appropriate response based on legal and ethical considerations.

Statement: **Identify strategies for responding to unethical or illegal actions of individuals and organizations.**

Performance Element: Identify and explain alternative strategies for responding to unethical or illegal actions.

Performance Element: Identify and explain best strategy.
Transportation, Distribution and Logistics

Cluster Knowledge and Skill Statement

Employability and Career Development

Statement: Explain written organizational policies, rules, and procedures for employees.

Performance Element: Explain the role of employee handbooks and manuals.

Performance Element: Explain organizational policies and rules addressing employment relations.

Statement: Identify and demonstrate positive work behaviors and personal qualities.

Performance Element: Demonstrate regular attendance.

Performance Element: Follow company dress and appearance standards.

Performance Element: Take responsibility for decisions and actions.

Performance Element: Demonstrate effort and initiative.

Performance Element: Demonstrate leadership and teamwork.

Performance Element: Manage resources effectively and efficiently.

Performance Element: Demonstrate the willingness to learn.

Statement: Identify and explore career opportunities in one or more career pathways.

Performance Element: Locate and interpret career information.

Performance Element: Match interests, abilities and preferences to career opportunities.

Performance Element: Identify education and industry credentialing requirements for career opportunities.

Statement: Develop career plans for career opportunities.

Performance Element: Identify preferred career opportunities.

Performance Element: Develop education and career plans.

Statement: Demonstrate ability to seek, apply for, and accept employment.

Performance Element: Locate job opportunities.

Performance Element: Prepare a resume and job application letter.

Performance Element: Complete job application forms.

Performance Element: Participate in a job interview.

Performance Element: Write interview follow-up letter.

Performance Element: Write acceptance letters.

Performance Element: Complete employment forms.

Statement: Demonstrate ability to evaluate and compare employment opportunities.

Performance Element: Evaluate and compare compensation packages of employment opportunities including wages and benefits.
Cluster Knowledge and Skill Statement

Performance Element: Evaluate and compare career advancement opportunities including training, work experience, advancement, and professional networking opportunities.
Cluster Knowledge and Skill Statement

Technical Skills

**Statement:** Identify and explain the role and function of critical transportation-related technological systems.

- Performance Element: Identify and explain systems for transporting people and freight.
- Performance Element: Identify and explain systems for support transportation operations.
- Performance Element: Identify and explain information technology applications.

**Statement:** Explain the importance of measuring and managing the reliability and performance of technological systems.

- Performance Element: Define and explain the concept of reliability.
- Performance Element: Explain how reliability and overall system performance is measured and monitored.
- Performance Element: Describe the importance of the reliability and performance of technological systems in improving the performance of TDL organizations.
- Performance Element: Explain how employees can contribute to improved reliability and performance (e.g., design, selection, maintenance, operation/utilization).

**Statement:** Explain major health, safety and environmental risks and potential impacts of technological systems.

- Performance Element: Explain the major health, safety and environmental risks and potential impacts of technological systems.
- Performance Element: Explain how these risks and impacts can be managed in TDL organizations.

**Statement:** Participate in the evaluation and selection of technological systems.

- Performance Element: Identify and explain the organizational requirements and selection criteria for technological systems.
- Performance Element: Use the requirements and selection criteria to evaluate alternatives.
- Performance Element: Recommend the best technological systems.

**Statement:** Participate in efforts to improve the utilization and performance of technological systems.

- Performance Element: Identify and prioritize reliability and performance problems.
- Performance Element: Identify opportunities for improvement.
- Performance Element: Use structured problem-solving process to develop improvement plans.