# Scope & Sequence

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| Course Name: Principles of Transportation Systems **TSDS PEIMS Code:** 13039250 | | | **Course Credit:** 1.0  **Course Requirements:** Recommended for students in Grades 9-12.  **Prerequisites:** None. |
| **Course Description:** In Principles of Transportation Systems, students will gain knowledge and skills in the safe application, design, production, and assessment of products, services, and systems. This knowledge includes the history, laws and regulations, and common practices used in the transportation industry. Students should apply knowledge and skills in the application, design, and production of technology as it relates to the transportation industries. This course allows students to reinforce, apply, and transfer their academic knowledge and skills to a variety of interesting and relevant activities, problems, and settings. | | | |
| **NOTE:** This is a suggested scope and sequence for the course content. This content will work with any textbook or instructional materials. If locally adapted, make sure all TEKS are covered. | | | |
| **Total Number of Periods**  **Total Number of Minutes**  **Total Number of Hours** | 175 Periods  7875 Minutes  131.25 Hours\* | \*Schedule calculations based on 175/180 calendar days. For .5 credit courses, schedule calculations based on 88/90 calendar days. Scope and sequence allows additional time for guest speakers, student presentations, field trips, remediation, extended learning activities, and other activities. | |
| **Unit Number, Title, and Brief Description** | **# of Class Periods\***  (assumes 45-minute periods)  Total minutes per unit | **TEKS Covered**  **130.442. (c) Knowledge and skills** | |
| **Unit 1: Transportation Careers Exploration**  The Transportation, Distribution, and Logistics Career Cluster focuses on planning, management, and movement of people, materials, and goods by road, pipeline, air, rail, and water. In this introductory unit, students will expand their knowledge base and interest in careers and entrepreneurship opportunities related to transportation systems and industries. Students will explore and identify individual goals and develop plans and strategies for a successful career in a transportation-related system. | 6 periods  270 minutes | 1. The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:   (A) identify career development and entrepreneurship opportunities related to transportation systems;  (B) identify careers in transportation systems; and  (H) explore career goals, objectives, and strategies as part of a plan for future career opportunities. | |
| **Unit 2: Professional Standards and Leadership in Transportation**  Students will explore and discuss certification opportunities and employers’ expectations as well as begin to plan and conduct industry-based occupation experiences. Students will explore and discuss workplace ethics, responsibilities, and appropriate work habits, and good citizenship skills, and model these habits, skills, and expectations in classroom activities. | 6 periods  270 minutes | 1. The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:   (D) discuss certification opportunities;  (G) identify employers' expectations, appropriate work habits, ethical conduct, legal responsibilities, and good citizenship skills;   1. The student develops leadership experience as it relates to transportation, distribution, and logistics systems. The student is expected to:   (A) plan, propose, conduct, and evaluate industry-based occupational experiences; and  (D) discuss youth leadership opportunities to create a well-rounded industry-based occupational experience. | |
| **Unit 3: History and Significance of Transportation Systems**  Students will expand their understanding of the historical impact and significance of transportation systems and industries by creating timelines that identify historical events related to transportation. Students will explore, discuss, and describe how transportation and issues related to transportation affect individuals and societies, and correctly identify related terms and vocabulary associated with the field. | 11 periods  495 minutes | 1. The student understands the historical, current, and future significance of the transportation, distribution, and logistic industries. The student is expected to:   (A) define terms associated with the transportation industries;  (B) identify the scope and effect on society of the transportation industries; and  (C) identify significant historical and current developments in the transportation industries. | |
| **Unit 4: Current Issues Impacting Transportation Systems**  Students will examine and explore how current events, laws, and public opinion affect transportation systems and industries. Students will also examine and explore how transportation can affect individuals and societies at local, state, national, and international levels. After reading about a transportation-related current event or events, students will conduct mock polls and/or use surveys to collect, present, and discuss their data. | 11 periods  495 minutes | 1. The student explains the transportation industries at the local, state, national, and international levels. The student is expected to:   (B) identify the political impact of transportation;  (C) review regulations and major laws and evaluate their impact on transportation;  (D) read appropriate written material to stay abreast of current issues impacting transportation; and  (E) collect public opinion and data in order to make informed decisions. | |
| **Unit 5: Future Trends in Transportation Systems**  Students will explore how emerging technologies, environmental issues, international trade, globalization, employment issues, and safety could affect transportation systems in the future. Students will discuss and/or describe in illustrations or presentations potential future development scenarios, issues, and alternatives. | 11 periods  495 minutes | 1. The student understands the historical, current, and future significance of the transportation industries. The student is expected to:   (D) identify potential future development for transportation industry systems;  (E) describe how emerging technologies and globalization impact the transportation industries; and  (F) compare and contrast issues affecting the transportation industries such as international trade, employment, safety, environmental issues.  (6) The student explains the transportation industries at the local, state, national, and international levels. The student is expected to:  (F) use critical-thinking skills to identify and organize alternatives and evaluate public policy issues related to transportation. | |
| **Unit 6: World Trade and Globalization**  Students will explore concepts related to cultural diversity, world markets, marketing factors and practices, and globalization. Students will identify reasons for world trade and globalization as well as similarities and differences in international cultures. In small groups and/or as whole class activities, students will research, discuss, and describe a variety of world markets and marketing factors. | 11 periods  495 minutes | 1. The student explores concepts related to cultural diversity. The student is expected to:   (A) identify significant similarities and differences in international culture;  (B) explain the variety of world markets;  (C) describe marketing factors and practices that impact other cultures; and   1. The student explains the transportation industries at the local, state, national, and international levels. The student is expected to:   (A) identify reasons for world trade and globalization. | |
| **Unit 7: Business Management**  Students will explore business management principles, team dynamics, leadership development, and strategic planning processes. Effective meetings using democratic principles and proper workplace etiquette will be modeled in whole class activities to reinforce business management principles and/or other course-related topics. One or more class periods will be used to read and discuss personal, industry-related, or institutional goal and mission statements. | 11 periods  495 minutes | 1. The student analyzes the structure of transportation organizations. The student is expected to:   (A) describe common business management principles;  (B) identify opportunities for leadership development and personal growth;  (C) demonstrate democratic principles in conducting effective meetings;  (D) describe team dynamics; and  (E) describe the development of organizational vision, mission, and goals through the strategic planning process. | |
| **Unit 8: Ethics and Interpersonal Communication**  Students will explore and discuss workplace ethics, responsibilities, and appropriate personal appearance, habits, and communication skills. Meetings using democratic principles and proper etiquette will be modeled to reinforce the practice of effective listening skills. | 11 periods  495 minutes | 1. The student demonstrates appropriate interpersonal and communication skills. The student is expected to:   (A) examine workplace ethical and legal responsibilities;  (B) define the uses of proper etiquette;  (C) identify appropriate personal appearance and health habits; and  (E) practice effective listening skills in formal and informal situations.  (5) The student analyzes the structure of distribution and logistics organizations. The student is expected to:  (C) demonstrate democratic principles in conducting effective meetings. | |
| **Unit 9: Business and Formal Communication**  Students will explore, practice, and demonstrate appropriate formal and informal oral and written communication skills in various business and workplace scenarios and presentations. Students will also demonstrate effective speaking and listening skills in classroom activities and/or in small groups as they present and discuss course-related technical information in these activities and scenarios. | 16 periods  720 minutes | 1. The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:   (C) apply competencies related to resources, information, interpersonal skills, problem solving, critical thinking, and systems of operation within transportation;   1. The student demonstrates appropriate interpersonal and communication skills. The student is expected to:   (D) practice written and oral communication skills in formal and informal situations;  (F) read and comprehend materials common to the transportation industry;  (G) employ writing and preparation skills using technical information; and   1. (H) demonstrate speaking skills. | |
| **Unit 10: Safety and Health**  Students will explore and identify safety, personal and occupational health, emergency situations, response plans, and procedures, and rules and laws designed to promote safety and health in transportation environments, as well as demonstrate the proper use of safety equipment. Students will also learn and demonstrate first aid and CPR procedures. Students will demonstrate leadership and effective speaking skills in classroom activities and/or in small groups as they model, evaluate, present, and discuss health and safety workplace scenarios as well as response plans to potential emergency situations. | 16 periods  720 minutes | 1. The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:   (E) demonstrate knowledge of personal and occupational health and safety;  (F) discuss response plans to emergency situations;   1. The student discusses methods to reduce workplace hazards in order to promote a safe working environment. The student is expected to:   (A) discuss safe work practices and emergency procedures;  (B) identify rules and laws designed to promote safety and health in transportation environments;  (C) demonstrate first aid and cardiopulmonary resuscitation procedures;  (D) demonstrate proper use of safety equipment; and  (E) evaluate worksite safety areas and/or plans. | |
| **Unit 11: Texas Department of Public Safety**  Students will discuss and identify Texas Department of Public Safety regulations related to the transportation industry, and explain the different types, requirements, and endorsements of CDLS. Students will demonstrate effective listening and speaking skills in classroom activities and/or in small groups as they identify, research, and discuss material handling and storage equipment and types of transportation that supply warehouses and distribution centers. | 11 periods  495 minutes | 1. The student examines Texas Department of Public Safety regulations as related to the transportation industry. The student is expected to:   (A) discuss rules pertaining to obtaining a commercial driver license (CDL);  (B) explain the different types of CDLs;  (C) discuss the various endorsements available for a CDL;  (D) discuss the requirements for each endorsement;  (E) identify material handling and storage equipment and forklifts, including electric- and fuel-powered forklifts; and  (F) identify types of transportation that supply warehouses and distribution centers. | |
| **Unit 12: Transportation Research**  Students will define and describe the major fields of research and development and how they are used in transportation industries. Students will identify and begin to apply appropriate research methods and resources as they plan and prepare for their course culmination leadership project. | 11 periods  495 minutes | 1. The student applies appropriate research methods for transportation systems. The student is expected to:   (A) define major fields of research and development;  (B) identify and apply scientific methods of research in transportation industries;  (C) use a variety of resources for research and development; and  (D) describe the scientific methods of research. | |
| **Unit 13: Applying Problem-solving, Mathematical, and Organizational Skills**  Students will explore and apply problem-solving, mathematical, and organizational skills to maintain the records appropriate for transportation systems and for their final project. Students will also discuss and further develop their course culmination leadership project, which must include data from a graph, table, chart, and/or plot. | 11 periods  495 minutes | 1. The student applies problem-solving, mathematical, and organizational skills in order to maintain financial and logistical records related to transportation. The student is expected to:   (A) discuss project proposals;  (B) maintain records appropriate to transportation system industries;  (C) collect and organize data in graphs, tables, charts, and plots; and  (D) analyze and interpret data from graphs, tables, charts, and plots. | |
| **Unit 14: Technology Tools**  Students will successfully use technology tools such as word processing and presentation software to complete their course culmination leadership project. Students will also examine and discuss GIS, GPS, and other computer-based tools and equipment specific to transportation industries. Students will demonstrate or explain to peers ways in which specific technology tools and equipment are or can be used in transportation systems. | 16 periods  720 minutes | 1. The student uses information technology tools specific to transportation industries to access, manage, integrate, and create information. The student is expected to:   (A) use management software, email applications, and Internet applications;  (B) use word-processing, database, spreadsheet, and presentation software;  (C) examine collaborative, groupware, and virtual meeting software; and  (D) discuss Geographic Information Systems, Global Positioning Systems, and other computer-based equipment in transportation systems. | |
| **Unit 15: Leadership Project**  Students will complete a culminating activity/project which includes a description of transportation industry-based occupational experiences, a record-keeping system for the experiences, a work plan and budget, and an evaluation of performance and contract compliance of a contractor and/or service provider. Projects must include data from a graph, table, chart, and/or plot. | 16 periods  720 minutes | (2) The student develops leadership experience as it relates to transportation systems. The student is expected to:  (A) plan, propose, conduct, and evaluate industry-based occupational experiences;  (B) apply proper record-keeping skills as they relate to industry-based occupational experiences;  (G) evaluate performance and contract compliance of contractors and service providers; and  (C) use a customized record-keeping system for the individual industry-based occupational experiences. | |