Prepared by the State Board of Education TEKS Review Committees

Final Recommendations, October 2014

These draft proposed revisions reflect the changes to the career and technical education (CTE) Texas Essential Knowledge and Skills (TEKS) that have been recommended by State Board of Education-appointed TEKS review committees for courses in the **Transportation, Distribution and Logistics Career Cluster**. Proposed additions are shown in green font with underlines (additions) and proposed deletions are shown in red font with strikethroughs (~~deletions~~).

Comments in the right-hand column provide explanations for the proposed changes. The following notations were used as part of the explanations:

CRS—information added or changed to align with the Texas College and Career Readiness Standards (CCRS)

MV—multiple viewpoints from within the committee

VA—information added, changed, or deleted to increase vertical alignment

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§130.xxx. Introduction to Transportation Technology (One Half Credit).

A theory based introduction course suitable for all transportation pathways.

	TEKS with edits	Committee Comments
(a)	**General requirements.** This course is recommended for students in Grades 09-10. A theory based introduction course suitable for all transportation pathways.	This is a basic intro course. This course is suitable for use in all transportation pathways.
(b)	**Introduction**	
(1)	CTE instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.	Added per TEA instruction
(2)	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 and related professional support services such as transportation infrastructure planning and management, logistics services, mobile equipment and facility maintenance.	Added per TEA instruction
(3)	Introduction to Transportation Technology includes knowledge of the major automotive systems and the principles of diagnosing and servicing these systems. Transportation Technology includes applicable safety and environmental rules and regulations. In Transportation Technology, students gain knowledge and skills in the repair, maintenance, and diagnosis of transportation systems. This study allows students to reinforce, apply, and transfer academic knowledge and skills to a variety of interesting and relevant activities, problems, and settings. The focus of this course is to teach safety, tool identification, proper tool use, and employability.	Added per TEA instruction
(4)	Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other leadership or extracurricular organizations.	Added per TEA instruction
(5)	Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.	Added per TEA instruction
(c)	**Knowledge and skills.**	
(1)	The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:	
(A)	understand the importance of work place safety and environmental responsibilities in transportation services and understand the use of personal protective equipment;	Reworded and moved up for importance.

(B)	identify employment opportunities, including entrepreneurship, and certification requirements for the field of transportation technology;	
(C)	demonstrate the principles of group participation and leadership related to citizenship and career preparation;	
(D)	identify employers' expectations and appropriate work habits; and	
(E)	discuss workplace ethics in a variety of scenarios.	
(2)	The student demonstrates academic skills related to the requirements of transportation technology. The student is expected to:	
(A)	demonstrate effective oral communication skills with individuals from varied cultures such as fellow students, co-workers, and customers.	
(B)	demonstrate effective written communication skills with individuals from varied cultures such as fellow students, co-workers, and customers.	
(C)	demonstrate math skills in measurement, addition, subtraction, multiplication, and division in both metric and US customary systems.	
(3)	The student understands the technical knowledge and skills of basic transportation systems. The student is expected to:	
(A)	locate, read, and interpret transportation repair and service information; and	
(B)	describe the basic and emerging transportation technologies.	
(4)	The student knows the functions and applications of the tools, equipment, technologies, and materials used in transportation technology. The student is expected to:	
(A)	be aware of the proper way to safely use hand and power tools and equipment commonly employed in the industry;	
(B)	identify diagnostic tools and equipment; and	
(C)	identify hand and shop tools and describe their proper usage .	

§130.401. ~~Advanced~~ Small Engine Technology (1 Credit). Grades 9-12 This course is the 1st course in the concurrent sequence for Small Engine Technology		
	TEKS with edits	Committee Comments
(a)	**General requirements**. This course is recommended for students in Grades ~~11-12~~ 9-12. ~~Recommended prerequisite: Small Engine Technology.~~ This course is the 1st course in the concurrent sequence for Small Engine Technology	
(b)	**Introduction**	
(1)	CTE instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.	
(2)	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 and related professional support services such as transportation infrastructure planning and management, logistics services, mobile equipment and facility maintenance.	
(3)	~~Introduction. Advanced~~ Small Engine Technology includes ~~advanced~~ knowledge of the function, diagnosis, and service of the systems and components of all types of small engines such as lawn mowers, motorcycles, and irrigation engines. This course is designed to provide ~~advanced~~ training for employment in the small engine technology industry. Instruction includes the repair and service of cooling, air, fuel, lubricating, electrical, ignition, and mechanical systems and small engine overhauls. In addition, the student will receive instruction in safety, academic, and leadership skills as well as career opportunities.	
(4)	Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other leadership or extracurricular organizations.	
(5)	Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.	
(~~b~~ c)	**Knowledge and skills.**	
(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 in the small engine technology industry, including how to search for and obtain employment, what qualifications are required for varying career fields, and how to advance in a position;	
(B)	identify careers in the small engine technology industry;	

(C)	apply competencies related to resources, information, interpersonal skills, problem solving, critical thinking, and systems of operation in the small engine technology industry;	
(D)	discuss certification opportunities;	
(E)	demonstrate skills and knowledge of personal and occupational health and safety in the workplace;	
(F)	discuss response plans to emergency situations;	
(G)	identify employers' expectations, appropriate work habits, ethical conduct, legal responsibilities, and good citizenship skills;	
(H)	develop personal goals, objectives, and strategies as part of a plan for future career and educational opportunities;	
(~~3~~2)	The student describes the historical, current, and future significance of the small engine technology industry. The student is expected to:	
(A)	describe how emerging technologies and globalization impacts the small engine technology industry;	
(B)	compare and contrast issues affecting the small engine technology industry such as employment, safety, and environmental issues; and	
~~(C)~~	~~describe marketing factors and practices that impact other cultures.~~	
(~~4~~3)	The student analyzes the structure of the small engine technology industry 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;	
(E)	describe the development of organizational vision, mission, and goals through the strategic planning process;	
(F)	develop a local program of activities for a career and technical student organization; and	
(G)	develop a report that summarizes key information about the performance and use of resources within a career and technical student organization.	
(~~5~~4)	The student explains the small engine technology industry at local, state, national, and international levels. The student is expected to:	
~~(A)~~	~~identify reasons for world trade and globalization;~~	

(~~B~~A)	review regulations and major laws to evaluate their impact on the small engine technology industry;	
(~~C~~B)	read appropriate written material to stay abreast of current issues impacting the small engine technology industry;	
(~~D~~C)	use critical-thinking skills to identify and organize alternatives and evaluate public-policy issues related to the small engine technology industry;	
(~~E~~D)	evaluate performance and contract compliance of contractors and service providers;	
(~~F~~E)	develop and manage preventative maintenance plans and systems to keep facility, tools, and equipment operating safely and properly;	
(~~G~~F)	assess preventive maintenance plans to meet facility, tool, and equipment design and manufacturer requirements;	
(~~H~~G)	successfully complete repair orders and paperwork related to the small engine technology industry;	
(~~I~~H)	estimate parts and labor costs on repair orders for small engine repair;	
(~~J~~I)	read and interpret documents such as small engine schematics, charts, and service-repair manuals and bulletins; and	
(~~K~~J)	~~demonstrate~~ be aware of new and emerging technologies that may affect the service and repair of small engines.	
(~~6~~5)	The student demonstrates appropriate personal and communication skills. The student is expected to:	
(A)	describe and apply ethical and legal responsibilities for appropriate workplace conduct;	
(B)	define the uses of proper etiquette and behavior;	
(C)	identify appropriate personal appearance and health habits;	
(D)	practice written and oral communication skills and employ effective listening skills;	
(E)	comprehend technical reading materials common to the transportation industry;	
(F)	employ technical writing and preparation skills; and	
(G)	demonstrate effective speaking skills through prepared and extemporaneous oral presentations.	
(~~7~~6)	The student applies appropriate research methods on small engine technology topics. The student is expected to:	
(A)	define major fields of research and development;	
(B)	identify and apply scientific methods of research in the small engine technology industry;	

(C)	use a variety of resources for research and development;	
(D)	describe the scientific method of research;	
(E)	evaluate scientific constructs such as conclusions, conflicting data, controls, data, inferences, limitations, questions, sources of errors, and variables; and	
(F)	apply scientific methods through direct and indirect observation.	
(~~8~~7)	The student applies problem-solving, mathematical, and organizational skills to maintain financial and logistical records. The student is expected to:	
(A)	develop project proposals;	
(B)	develop and maintain records appropriate to the small engine technology industry;	
(C)	collect and organize data in graphs, tables, charts, and plots;	
(D)	analyze and interpret data from graphs, tables, charts, and plots;	
(E)	maintain appropriate financial records such as management journals, inventories, income and expense logs, and financial statements and balance sheets;	
(F)	conduct formative, summative, and financial analyses on project learning objectives and records;	
(G)	derive engine calculations such as cylinder volume, engine displacement, combustion chamber volume, compressed head gasket volume, piston and deck height, piston dish volume, dome volume, cylinder volume, compression ratio, and horsepower;	
(H)	derive and measure electrical calculations such as electrical resistance, current, and voltage in engines;	
(I)	apply Ohm's law and power theory to small engines; and	
(J)	apply electronic theory to generators, electric motors, power supplies, electronic amplifiers, electronic oscillators, and circuits found in engines~~;~~..	
~~(K)~~	~~explain Newton's Law as it relates to engines; and~~	
~~(L)~~	~~calculate Bernoulli's principle and Venturi effect as it relates to small engines.~~	
(~~9~~8)	The student uses information technology tools specific to the small engine technology industry to access, manage, integrate, and create information. The student is expected to:	
(A)	use personal management software such as email applications, Internet applications, word-processing, database, spreadsheet, presentation, collaborative, groupware, and virtual meeting software;	
(B)	discuss Geographic Information Systems and Global Positioning Systems applications; and	

(C)	use other computer-based equipment.	
(~~10~~9)	The student knows advanced technical knowledge and skills of small engine technology. The student is expected to:	
(A)	identify the use and application of small engines and components;	
(B)	identify the components of electrical-electronic systems;	
(C)	Be aware of engine designs, components, and applications;	
(D)	identify and use engine measuring tools and test equipment;	
(E)	use tools used in the operation, maintenance, and repair of small engines;	
(F)	compare and contrast the characteristics of two- and four-cycle engines; and	
(G)	identify and discuss the functions of the major small engine components.	
(~~11~~10)	The student applies advanced technical knowledge and skills in simulated or actual work situations. The student is expected to:	
(A)	troubleshoot and repair small engines;	
(B)	perform preventive maintenance on small engines;	
(C)	assess the proper fuel mixtures and analyze the efficiency of various fuels used in small engines;	
(D)	distinguish between valve arrangement positions and analyze valve timing with respect to crankshaft rotation;	
(E)	demonstrate the ability to maintain and service engine systems such as lubrication, belts, cooling, crankcase breathers, filters, starters, ignition, electronics, points, valves, and other systems;	
(F)	perform routine installations, inspections, adjustments, and maintenance on small engine testing tools and equipment;	
(G)	demonstrate knowledge of electrical testing tools and equipment commonly used in small engine maintenance;	
(H)	collect measurements using precision instruments;	
(I)	evaluate small engine parts for wear tolerances;	
(J)	explain the relationship between an electric current and magnetic fields using starters, generators, or electromagnets;	
(K)	analyze the effects of heating and cooling on small engines;	

(L)	explain the thermo physical properties of fluid systems commonly used in small engines;	
(M)	analyze electric circuits and electronic systems in small engines;	
(N)	define, analyze, and explain the laws of thermodynamics;	
(O)	evaluate heat energy transfer in small engines;	
(P)	calculate speed, momentum, acceleration, work, and power in small engines; and	
(Q)	compare and contrast efficiency of various engine sizes and types.	

§130.401. Advanced Small Engine Technology (Two ~~to Three~~ Credits). Prerequisite Small Engine Technology Grades 9-12 This is the 2nd course in the concurrent sequence progressing to Practicum in Transportation Systems.		
	TEKS with edits	Committee Comments
(a)	**General requirements**. This course is recommended for students in Grades ~~11~~ 9-12. ~~Recommended p~~ Prerequisite: Small Engine Technology. This is the 2nd course in the concurrent sequence progressing to Practicum in Transportation Systems.	
(b)	**Introduction**	
(1)	CTE instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.	
(2)	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 and related professional support services such as transportation infrastructure planning and management, logistics services, mobile equipment and facility maintenance.	
~~(b)~~(3)	Advanced Small Engine Technology includes advanced knowledge of the function, diagnosis, and service of the systems and components of all types of small engines such as lawn mowers, motorcycles, and irrigation engines. This course is designed to provide advanced training for employment in the small engine technology industry. Instruction includes the repair and service of cooling, air, fuel, lubricating, electrical, ignition, and mechanical systems and small engine overhauls. In addition, the student will receive instruction in safety, academic, and leadership skills as well as career opportunities.	
(4)	Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other leadership or extracurricular organizations.	
(5)	Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.	
(~~b~~ c)	**Knowledge and skills**.	
(1)	~~The student explores the employability characteristics of a successful worker in the modern workplace. The student is expected to:~~ 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 in the small engine technology industry, including how to search for and obtain employment, what qualifications are required for varying career fields, and how to advance in a position;	
(B)	identify careers in the small engine technology industry;	
(C)	apply competencies related to resources, information, interpersonal skills, problem solving, critical thinking, and systems of operation in the small engine technology industry;	

(D)	discuss certification opportunities;	
(E)	demonstrate skills and knowledge of personal and occupational health and safety in the workplace;	
(F)	discuss response plans to emergency situations;	
(G)	identify employers' expectations, appropriate work habits, ethical conduct, legal responsibilities, and good citizenship skills;	
(H)	develop personal goals, objectives, and strategies as part of a plan for future career and educational opportunities;	
(I)	prepare a résumé; and	
(J)	demonstrate job interview skills.	
(2)	The student develops an occupational experience program as it relates to the small engine technology industry. The student is expected to:	
(A)	plan, propose, conduct, and evaluate industry-based occupational experiences; and	
(B)	use a customized record-keeping system for the individual industry-based occupational experiences.	
(3)	The student describes the historical, current, and future significance of the small engine technology industry. The student is expected to:	
(A)	describe how emerging technologies and globalization impacts the small engine technology industry;	
(B)	compare and contrast issues affecting the small engine technology industry such as employment, safety, and environmental issues; and	
(C)	describe marketing factors and practices that impact other cultures.	
(4)	The student analyzes the structure of the small engine technology industry 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;	
(E)	describe the development of organizational vision, mission, and goals through the strategic planning process;	
(F)	develop a local program of activities for a career and technical student organization; and	
(G)	develop a report that summarizes key information about the performance and use of resources within a career and technical student organization.	

(5)	The student explains the small engine technology industry at local, state, national, and international levels. The student is expected to:	
~~(A)~~	~~identify reasons for world trade and globalization;~~	
(~~B~~A)	review regulations and major laws to evaluate their impact on the small engine technology industry;	
(~~C~~B)	read appropriate written material to stay abreast of current issues impacting the small engine technology industry;	
(~~D~~C)	use critical-thinking skills to identify and organize alternatives and evaluate public-policy issues related to the small engine technology industry;	
(~~E~~D)	evaluate performance and contract compliance of contractors and service providers;	
(~~F~~E)	develop and manage preventative maintenance plans and systems to keep facility, tools, and equipment operating safely and properly;	
(~~G~~F)	assess preventive maintenance plans to meet facility, tool, and equipment design and manufacturer requirements;	
(~~H~~G)	successfully complete repair orders and paperwork related to the small engine technology industry;	
(~~I~~H)	estimate parts and labor costs on repair orders for small engine repair;	
(~~J~~I)	read and interpret documents such as small engine schematics, charts, and service-repair manuals and bulletins; and	
(~~K~~J)	demonstrate knowledge of new and emerging technologies that may affect the service and repair of small engines.	
(6)	The student demonstrates appropriate personal and communication skills. The student is expected to:	
(A)	describe and apply ethical and legal responsibilities for appropriate workplace conduct;	
(B)	define the uses of proper etiquette and behavior;	
(C)	identify appropriate personal appearance and health habits;	
(D)	practice written and oral communication skills and employ effective listening skills;	
(E)	comprehend technical reading materials common to the transportation industry;	
(F)	employ technical writing and preparation skills; and	
(G)	demonstrate effective speaking skills through prepared and extemporaneous oral presentations.	
(7)	The student applies appropriate research methods on small engine technology topics. The student is expected to:	
(A)	define major fields of research and development;	

(B)	identify and apply scientific methods of research in the small engine technology industry;	
(C)	use a variety of resources for research and development;	
(D)	describe the scientific method of research;	
(E)	evaluate scientific constructs such as conclusions, conflicting data, controls, data, inferences, limitations, questions, sources of errors, and variables; and	
(F)	apply scientific methods through direct and indirect observation.	
(8)	The student applies problem-solving, mathematical, and organizational skills to maintain financial and logistical records. The student is expected to:	
(A)	develop project proposals;	
(B)	develop and maintain records appropriate to the small engine technology industry;	
(C)	collect and organize data in graphs, tables, charts, and plots;	
(D)	analyze and interpret data from graphs, tables, charts, and plots;	
(E)	maintain appropriate financial records such as management journals, inventories, income and expense logs, and financial statements and balance sheets;	
(F)	conduct formative, summative, and financial analyses on project learning objectives and records;	
(G)	derive engine calculations such as cylinder volume, engine displacement, combustion chamber volume, compressed head gasket volume, piston and deck height, piston dish volume, dome volume, cylinder volume, compression ratio, and horsepower;	
(H)	derive and measure electrical calculations such as electrical resistance, current, and voltage in engines;	
(I)	apply Ohm's law and power theory to small engines;	
(J)	apply electronic theory to generators, electric motors, power supplies, electronic amplifiers, electronic oscillators, and circuits found in engines;	
(K)	explain Newton's Law as it relates to engines; and	
(L)	calculate Bernoulli's principle and Venturi effect as it relates to small engines.	
(9)	The student uses information technology tools specific to the small engine technology industry to access, manage, integrate, and create information. The student is expected to:	
(A)	use personal management software such as email applications, Internet applications, word-processing, database, spreadsheet, presentation, collaborative, groupware, and virtual meeting software;	
(B)	discuss Geographic Information Systems and Global Positioning Systems applications; and	

(C)	use other computer-based equipment.	
(10)	The student knows advanced technical knowledge and skills of small engine technology. The student is expected to:	
(A)	identify the use and application of small engines and components;	
(B)	identify the components of electrical-electronic systems;	
(C)	demonstrate knowledge of engine designs, components, and applications;	
(D)	identify and use engine measuring tools and test equipment;	
(E)	use tools used in the operation, maintenance, and repair of small engines;	
(F)	compare and contrast the characteristics of two- and four-cycle engines; and	
(G)	identify and discuss the functions of the major small engine components.	
(11)	The student applies advanced technical knowledge and skills in simulated or actual work situations. The student is expected to:	
(A)	troubleshoot and repair small engines;	
(B)	perform preventive maintenance on small engines;	
(C)	assess the proper fuel mixtures and analyze the efficiency of various fuels used in small engines;	
(D)	distinguish between valve arrangement positions and analyze valve timing with respect to crankshaft rotation;	
(E)	demonstrate the ability to maintain and service engine systems such as lubrication, belts, cooling, crankcase breathers, filters, starters, ignition, electronics, points, valves, and other systems;	
(F)	perform routine installations, inspections, adjustments, and maintenance on small engine testing tools and equipment;	
(G)	demonstrate knowledge of electrical testing tools and equipment commonly used in small engine maintenance;	
(H)	collect measurements using precision instruments;	
(I)	evaluate small engine parts for wear tolerances;	
(J)	explain the relationship between an electric current and magnetic fields using starters, generators, or electromagnets;	
(K)	analyze the effects of heating and cooling on small engines;	
(L)	explain the thermo physical properties of fluid systems commonly used in small engines;	
(M)	analyze electric circuits and electronic systems in small engines;	

(N)	define, analyze, and explain the laws of thermodynamics;	
(O)	evaluate heat energy transfer in small engines;	
(P)	calculate speed, momentum, acceleration, work, and power in small engines; and	
(Q)	compare and contrast efficiency of various engine sizes and types.	

§130.xxx. Automotive Basics 1 (One Credit) Grades 9-12. An entry level course for 09-12 grade. This course is the 1st in a concurrent sequence progressing to Automotive Basics 2.		
TEKS with edits		Committee Comments
(a)	**General requirements**. An entry level course for 09-12 grade. This course is the 1st in a concurrent sequence progressing to Automotive Basics 2.	This is an entry level course in automotive technology. The coherent sequence would include Automotive Basics 2 and either a Transportation Practicum or Advanced Automotive Technology II.
(b)	**Introduction**	
(1)	CTE instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.	Added per TEA instruction
(2)	The Transportation, Distribution & Logistics Career Cluster focuses on planning, management, and movement of people, materials, and goods by road, pipeline, air, rail and water and related professional support services such as transportation infrastructure planning and management, logistics services, mobile equipment and facility maintenance.	Added per TEA instruction
(3)	Automotive Basics 1 includes knowledge of the major automotive systems and the principles of diagnosing and servicing these systems. Automotive Basics1 includes applicable safety and environmental rules and regulations. In Automotive Basics 1, students gain knowledge and skills in the repair, maintenance, and diagnosis of vehicle systems. This study allows students to reinforce, apply, and transfer academic knowledge and skills to a variety of interesting and relevant activities, problems, and settings. The focus of this course is to teach safety, tool identification, proper tool use, and employability.	Added per TEA Instruction
(4)	Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other leadership or extracurricular organizations.	Added per TEA Instruction
(5)	Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.	Added per TEA Instruction
(c)	**Knowledge and skills.**	
(1)	The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:	
(A)	demonstrate awareness of work place safety and environmental responsibilities in automotive technology and understand the use of personal protective equipment;	Reworded and moved up for importance.
(B)	identify employment opportunities, including entrepreneurship, and certification requirements for the field of automotive services;	
(C)	demonstrate the principles of group participation and leadership related to citizenship and career preparation;	

(D)	identify employers' expectations and appropriate work habits;	
(E)	discuss workplace ethics in a variety of scenarios.	
(2)	The student demonstrates academic skills related to the requirements of transportation technology. The student is expected to:	
(A)	demonstrate effective oral communication skills with individuals from varied cultures such as fellow students, co-workers, and customers.	
(B)	demonstrate effective written communication skills with individuals from varied cultures such as fellow students, co-workers, and customers.	
(C)	demonstrate math skills in measurement, addition, subtraction, multiplication, and division in both metric and US customary systems.	
(3)	The student understands the technical knowledge and skills of basic automotive systems. The student is expected to:	
(A)	describe the eight (8) major vehicle systems.	
(B)	locate, read, and interpret vehicle maintenance and service information.	
(C)	describe the basic and emerging vehicle power systems.	
(4)	The student knows the functions and applications of the tools, equipment, technologies, and materials used in automotive services. The student is expected to:	
(A)	demonstrate the proper way to safely use hand and power tools and equipment commonly employed in the maintenance and repair of vehicles;	
(B)	discuss the proper handling and disposal of environmentally hazardous materials used in servicing vehicles;	
(C)	identify diagnostic tools and equipment.; and	
(D)	identify hand and shop tools and describe their proper usage .	
(5)	The student applies the technical knowledge and skills of the trade-to-work situations. The student is expected to:	
(A)	understand the procedures for ordering and locating parts;	
(B)	understand the operation theory of internal combustion engines;	
(C)	identify braking, steering, and suspension systems components;	
(D)	understand electrical / electronic systems basic theory such as; ohms law, voltage drop, resistance, amperage, voltage, and wiring diagram symbols.	

(E)	identify air-conditioning, heating, and accessory systems;	
(F)	inspect and identify chassis and power train components and systems;	
(G)	identify cooling and lubrication systems; and	
(H)	perform regular audits and inspections to maintain compliance with safety, health, and environmental regulations.	

§130.xxx Automotive Basics 2 (One Credit). Prerequisite Automotive Basics 1. Grade 10-12. 2nd course in coherent sequence progressing to Practicum in Transportation Systems or Advanced Automotive Technology II.		
TEKS with edits		Committee Comments
(a)	**General requirements.** This course is recommended for students in Grades 10-12. Prerequisite Automotive Basics 1. 2nd course in coherent sequence progressing to Practicum in Transportation Systems or Advanced Automotive Technology II.	This course is designed to be the second in a coherent sequence with Automotive Basics leading to Practicum in Transportation Systems or Advanced Automotive Technology II. This course with the prerequisite is the equivalent of Advanced Automotive Technology I.
(b)	**Introduction**	
(1)	CTE instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.	Added per TEA instruction
(2)	The Transportation, Distribution & Logistics Career Cluster focuses on planning, management, and movement of people, materials, and goods by road, pipeline, air, rail and water and related professional support services such as transportation infrastructure planning and management, logistics services, mobile equipment and facility maintenance.	Added per TEA instruction
(3)	Automotive Technology includes knowledge of the major automotive systems and the principles of diagnosing and servicing these systems. Automotive Technology includes applicable safety and environmental rules and regulations. In Automotive Technology, students gain knowledge and skills in the repair, maintenance, and diagnosis of vehicle systems. This study allows students to reinforce, apply, and transfer academic knowledge and skills to a variety of interesting and relevant activities, problems, and settings. The focus of this course is to teach safety, tool identification, proper tool use, and employability and the theory of operation of automotive vehicle systems and associated repair practices.	Added per TEA instruction
(4)	Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other leadership or extracurricular organizations.	Added per TEA instruction
(5)	Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.	Added per TEA instruction
(c)	**Knowledge and skills.**	
(1)	The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:	
(A)	identify employment opportunities, including entrepreneurship, and certification requirements for the field of automotive technology;	

(B)	demonstrate the principles of group participation and leadership related to citizenship and career preparation;	
(C)	identify employers' expectations and appropriate work habits;	
(D)	apply the competencies related to resources, information, systems, and technology as it pertains to automotive technology;	
(E)	demonstrate awareness of the technical knowledge and skills related to health and safety in the workplace, as specified by appropriate government regulations; and	
(F)	demonstrate workplace ethics in a variety of scenarios.	
(2)	The student demonstrates academic skills related to the requirements of transportation technology. The student is expected to:	
(A)	demonstrate effective oral communication skills with individuals from varied cultures such as fellow students, co-workers, and customers.	
(B)	demonstrate effective written communication skills with individuals from varied cultures such as fellow students, co-workers, and customers.	
(C)	demonstrate math skills in measurement, addition, subtraction, multiplication, and division in both metric and US customary systems.	
(3)	The student demonstrates technical knowledge and skills that form the knowledge of basic automotive services. The student is expected to:	
(A)	describe the function of the major components of powered vehicles such as engines, fuel, lubrication, cooling, electrical, and air conditioning systems;	
(B)	describe the function of the automotive chassis components such as braking, steering, transmission, drivetrain, and suspension systems;	
(C)	locate, read, and interpret documents such as schematics, charts, diagrams, graphs, parts catalogs, and service-repair manuals and bulletins;	
(D)	perform precision measurements to diagnose component wear, compare to published specifications, and determine necessary repair; and	
(E)	discuss alternative fuel vehicles.	
(4)	The student is aware of the functions and applications of the tools, equipment, technologies, and materials used in automotive technology. The student is expected to:	
(A)	discuss and demonstrate the safe use of hand and power tools and equipment commonly employed in the maintenance and repair of vehicles;	

(B)	discuss the proper handling and disposal of environmentally hazardous materials used in servicing vehicles;	
(C)	demonstrate awareness of new and emerging automotive technologies; and	
(D)	identify and discuss the proper use of diagnostic tools and equipment.	
(5)	The student applies the technical knowledge and skills of the trade-to-work situations. The student is expected to:	
(A)	order, stock, and locate parts;	
(B)	remove, repair, and replace engine components;	
(C)	service and repair braking, steering, and suspension systems;	
(D)	service and repair electrical / electronic systems;	
(E)	service and repair air-conditioning, heating, and accessory systems;	
(F)	inspect, service, and repair chassis and power train components and systems;	
(G)	service and repair cooling and lubrication systems; and	
(H)	perform regular audits and inspections to maintain compliance with safety, health, and environmental regulations.	

§130.396. Automotive Technology I (~~One to~~ Two Credits) grades 9-12 First course in coherent sequence progressing to Advanced Automotive Technology II		
	TEKS with edits	Committee Comments
(a)	**General requirements.** This course is recommended for students in Grades ~~10~~ 9-12. First course in coherent sequence progressing to Advanced Automotive Technology II	This course is designed to meet the needs of districts with large programs or career centers to ensure adequate time for instruction and training. The first in a coherent sequence with Advanced Automotive Technology II with a capstone of Practicum in Transportation Systems.
(b)	**Introduction:**	
(1)	CTE instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.	Added per TEA requirement
(2)	The Transportation, Distribution & Logistics Career Cluster focuses on planning, management, and movement of people, materials, and goods by road, pipeline, air, rail and water and related professional support services such as transportation infrastructure planning and management, logistics services, mobile equipment and facility maintenance.	Added per TEA requirement
(3)	Automotive Technology includes knowledge of the major automotive systems and the principles of diagnosing and servicing these systems. Automotive Technology includes applicable safety and environmental rules and regulations. In Automotive Technology, students gain knowledge and skills in the repair, maintenance, and diagnosis of vehicle systems. This study allows students to reinforce, apply, and transfer academic knowledge and skills to a variety of interesting and relevant activities, problems, and settings. The focus of this course is to teach safety, tool identification, proper tool use, and employability.	Added per TEA requirement
(4)	Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other leadership or extracurricular organizations.	Cleans up language and better defines expectations
(5)	Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.	
(c)	**Knowledge and skills**.	
(1)	The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to: ~~The student knows the employability characteristics of a successful worker in the modern workplace. The student is expected to:~~	
(A)	demonstrate knowledge of the technical knowledge and skills related to health and safety in the workplace, as specified by appropriate government regulations; and	Reworded and moved up for importance

(~~A~~B)	identify employment opportunities, including entrepreneurship, and certification requirements for the field of automotive technology ~~services~~;	
(~~B~~C)	demonstrate the principles of group participation and leadership related to citizenship and career preparation;	
(~~C~~D)	identify employers' expectations and appropriate work habits;	
(~~D~~E)	apply the competencies related to resources, information, systems, and technology as it pertains to automotive technology;	
(~~E~~F)	demonstrate knowledge of the technical knowledge and skills related to health and safety in the workplace, as specified by appropriate government regulations; and	
(~~F~~G)	~~discuss~~ demonstrate workplace ethics in a variety of ~~workplace~~ scenarios.	
(2)	The student demonstrates academic skills related to the requirements of ~~automotive services~~ transportation technology. The student is expected to:	
(A)	demonstrate effective oral ~~and written~~ communication skills with individuals from varied cultures such as fellow ~~workers~~ students, co-workers, ~~management,~~ and customers.	
(B)	demonstrate effective written communication skills with individuals from varied cultures such as fellow students, co-workers, and customers.	
(C)	demonstrate math skills in measurement, addition, subtraction, multiplication, and division in both metric and US customary systems.	
(3)	The student knows the technical knowledge and skills that form the knowledge of automotive services. The student is expected to:	
(A)	describe the function of the major components of powered vehicles such as engines, fuel, lubrication, cooling, electrical, and air conditioning systems;	
(B)	describe the function of the automotive chassis components such as braking, steering, transmission, drivetrain, and suspension systems;	
(C)	locate, read, and interpret documents such as schematics, charts, diagrams, graphs, parts catalogs, and service-repair manuals and bulletins;	
(D)	perform precision measurements to diagnose component wear, compare to published specifications, and determine necessary repair; and	
(E)	discuss alternative fuel vehicles.	
(4)	The student knows the functions and applications of the tools, equipment, technologies, and materials used in automotive technology ~~services~~. The student is expected to:	

(A)	safely use hand and power tools and equipment commonly employed in the maintenance and repair of vehicles;	
(B)	discuss the proper handling and disposal of environmentally hazardous materials used in servicing vehicles;	
(C)	demonstrate knowledge of new and emerging automotive technologies; and	
(D)	identify and demonstrate the proper use of diagnostic tools and equipment.	
(5)	The student applies the technical knowledge and skills of the trade-to-work situations. The student is expected to:	
(A)	order, stock, and locate parts;	
(B)	remove, repair, and replace engine components;	
(C)	service and repair braking, steering, and suspension systems;	
(D)	service and repair electrical and electronic systems;	
(E)	service and repair air-conditioning, heating, and accessory systems;	
(F)	inspect, service, and repair chassis and power train components and systems;	
(G)	service and repair cooling and lubrication systems; and	
(H)	perform regular audits and inspections to maintain compliance with safety, health, and environmental regulations.	

§130.397. Advanced Automotive Technology II-2 (Two Credits) Grades 11-12		
	TEKS with edits	Committee Comments
(a)	**General requirements.** This course is recommended for students in Grades 11-12. Required prerequisite: Automotive Technology I or Automotive Basics 2.	This course is designed for schools with large programs or career centers to insure adequate instruction and training time. This is the second in a coherent sequence with Advanced Automotive Technology I and using Practicum in Transportation Systems as a capstone. The required prerequisites insure that the student has the foundation necessary for this advanced course.
(b)	**Introduction**	
(1)	CTE instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.	
(2)	General Statement about Career Cluster The Transportation, Distribution & Logistics Career Cluster focuses on planning, management, and movement of people, materials, and goods by road, pipeline, air, rail and water and related professional support services such as transportation infrastructure planning and management, logistics services, mobile equipment and facility maintenance.	
(3)	Course Information Automotive Technology includes knowledge of the major automotive systems and the principles of diagnosing and servicing these systems. Automotive Technology includes applicable safety and environmental rules and regulations. In Automotive Technology, students gain knowledge and skills in the repair, maintenance, and diagnosis of vehicle systems. This study allows students to reinforce, apply, and transfer academic knowledge and skills to a variety of interesting and relevant activities, problems, and settings. The focus of this course is to teach safety, tool identification, proper tool use, and employability.	
(4)	CTSO Statement Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other leadership or extracurricular organizations.	Added per TEA requirement
(5)	Such As and Including Statement Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.	
(c)	**Knowledge and skills**.	

(1)	The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:	
(A)	demonstrate knowledge of the technical knowledge and skills related to health and safety in the workplace, as specified by appropriate government regulations;	Reworded and moved up for importance.
(B)	identify employment opportunities, including entrepreneurship, and certification requirements for the field of automotive technology	
(C)	demonstrate the principles of group participation and leadership related to citizenship and career preparation;	
(D)	identify employers' expectations and appropriate work habits;	
(E)	apply the competencies related to resources, information, systems, and technology;	
(F)	demonstrate knowledge of the technical knowledge and skills related to health and safety in the workplace, as specified by appropriate government regulations;	
(G)	discuss ethics in a variety of workplace situations;	
(H)	prepare a resumé; and	
(I)	demonstrate job interview skills.	
(2)	The student relates core academic skills to the requirements of automotive technology ~~service~~. The student is expected to:	
(A)	complete repair orders and related paperwork; and	
(B)	estimate parts and labor costs on repair orders.	
(3)	The student knows the technical knowledge and skills that form the core of knowledge of automotive service. The student is expected to:	
(A)	diagnose the major components of powered vehicles;	
(B)	diagnose automotive chassis and driveline components;	
(C)	locate, read, and interpret documents such as schematics, charts, diagrams, graphs, parts catalogs, and service-repair manuals and bulletins;	
(D)	perform precision measurements to diagnose component wear, compare to published specifications, and determine necessary repair;	
(E)	employ critical-thinking skills and structured problem-solving skills to diagnose vehicle malfunctions, solve problems, and make decisions	
(4)	The student knows the functions and applications of the tools, equipment, technologies, and materials used in automotive technology ~~service~~. The student is expected to:	

(A)	demonstrate safely use hand and power tools and equipment commonly employed in the maintenance and repair of vehicles;	
(B)	Discuss and demonstrate the proper handling and disposal of environmentally hazardous materials used in servicing vehicles;	
(C)	demonstrate proper use of diagnostic tools and equipment.	
(5)	The student applies the technical knowledge and skills of the trade to simulated or actual work situations. The student is expected to:	
(A)	perform regular audits and inspections;	
(B)	discuss ordering, stocking, and locating parts;	
(C)	analyze malfunctions and remove, repair, and replace engine components;	
(D)	diagnose, service, and repair , steering, and suspension systems;	
(E)	test, diagnose, service, and repair automotive electrical and electronic systems;	
(F)	diagnose, service, air-conditioning, heating, and accessory systems;	
(G)	diagnose, service, chassis and power train components and systems;	
(H)	test, diagnose, service, and repair air, fuel, ignition, emissions, and drive systems; and	
(I)	test, diagnose, service, and repair cooling and lubrication systems.	

§130.397. Advanced Automotive Technology II-3 (~~Two to~~ Three Credits).		
	TEKS with edits	Committee Comments
(a)	**General requirements**. This course is recommended for students in Grades 11-12. ~~Recommended~~ Required prerequisite: Automotive Technology I or Automotive Basics 2.	This course is designed for schools with large programs or career centers to insure adequate instruction and training time. This is the second in a coherent sequence with Advanced Automotive Technology I and using Practicum in Transportation Systems as a capstone. The required prerequisites insure that the student has the foundation necessary for this advanced course.
(b)	**Introduction**	
(1)	CTE instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.	
(2)	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 and related professional support services such as transportation infrastructure planning and management, logistics services, mobile equipment and facility maintenance.	
(3)	Automotive Technology includes knowledge of the major automotive systems and the principles of diagnosing and servicing these systems. Automotive Technology includes applicable safety and environmental rules and regulations. In Automotive Technology, students gain knowledge and skills in the repair, maintenance, and diagnosis of vehicle systems. This study allows students to reinforce, apply, and transfer academic knowledge and skills to a variety of interesting and relevant activities, problems, and settings. The focus of this course is to teach safety, tool identification, proper tool use, and employability.	
(4)	Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other leadership or extracurricular organizations.	Added per TEA requirement
(5)	Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.	
(b)	**Knowledge and skills**.	
(1)	The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:	
(A)	demonstrate knowledge of the technical knowledge and skills related to health and safety in the workplace, as specified by appropriate government regulations;	Reworded and moved up for importance.

(~~A~~B)	identify employment opportunities, including entrepreneurship, and certification requirements for the field of automotive technology ~~service~~;	
(~~B~~C)	demonstrate the principles of group participation and leadership related to citizenship and career preparation;	
(~~C~~D)	identify employers' expectations and appropriate work habits;	
(~~D~~E)	apply the competencies related to resources, information, systems, and technology;	
(~~E~~F)	demonstrate knowledge of the technical knowledge and skills related to health and safety in the workplace, as specified by appropriate government regulations;	
(~~F~~G)	discuss ethics in a variety of workplace situations;	
(~~G~~H)	prepare a resumé; and	
(~~H~~I)	demonstrate job interview skills.	
(2)	The student relates core academic skills to the requirements of automotive technology ~~service~~. The student is expected to:	
(A)	complete repair orders and related paperwork; and	
(B)	estimate parts and labor costs on repair orders.	
(3)	The student knows the technical knowledge and skills that form the core of knowledge of automotive service. The student is expected to:	
(A)	diagnose and repair the major components of powered vehicles;	
(B)	diagnose and repair automotive chassis and driveline components;	
(C)	locate, read, and interpret documents such as schematics, charts, diagrams, graphs, parts catalogs, and service-repair manuals and bulletins;	
(D)	perform precision measurements to diagnose component wear, compare to published specifications, and determine necessary repair;	
(E)	employ critical-thinking skills and structured problem-solving skills to diagnose vehicle malfunctions, solve problems, and make decisions; and	
(F)	discuss alternative fuel vehicles.	
(4)	The student knows the functions and applications of the tools, equipment, technologies, and materials used in automotive technology ~~service~~. The student is expected to:	
(A)	demonstrate safe~~ly~~ use hand and power tools and equipment commonly employed in the maintenance and repair of vehicles;	

(B)	Discuss and demonstrate the proper handling and disposal of environmentally hazardous materials used in servicing vehicles;	
(C)	discuss new and emerging automotive technologies; and	
(D)	demonstrate proper use of diagnostic tools and equipment.	
(5)	The student applies the technical knowledge and skills of the trade to simulated or actual work situations. The student is expected to:	
(A)	perform regular audits and inspections;	
(B)	discuss ordering, stocking, and locating parts;	
(C)	analyze malfunctions and remove, repair, and replace engine components;	
(D)	diagnose, service, and repair braking, steering, and suspension systems;	
(E)	test, diagnose, service, and repair automotive electrical and electronic systems;	
(F)	diagnose, service, and repair air-conditioning, heating, and accessory systems;	
(G)	diagnose, service, and repair chassis and power train components and systems;	
(H)	test, diagnose, service, and repair air, fuel, ignition, emissions, and drive systems; and	
(I)	test, diagnose, service, and repair cooling and lubrication systems.	

§130.xxx. Basic Collision Repair and Refinishing (One Credit). An entry level course for grades 9-12, this course progresses into a coherent sequence		
	TEKS with edits	Committee Comments
(a)	**General requirements**. This course is recommended for students in Grades ~~10~~ 09-12.	The course is designed for students to start a coherent sequence in Auto Body Collision and Repair leading to a Practicum in Auto Collision Repair 2. An entry level course for grades 9-12, this course progresses into a coherent sequence
(b)	**Introduction:**	
(1)	CTE instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions. Career and technical programs enable students to gain entry-level employment in a high-skill, high-wage job and/or to continue their education.	Added as per TEA instruction
(2)	The Transportation, Distribution & Logistics Career Cluster focuses on planning, management, and movement of people, materials, and goods by road, pipeline, air, rail and water and related professional support services such as transportation infrastructure planning and management, logistics services, mobile equipment and facility maintenance. Collision repair and refinishing services include knowledge of the processes, technologies, and materials used in the reconstruction and alteration of vehicles. This course is designed to teach the concepts and theory of systems related to automotive collision repair and refinishing.	Added as per TEA instruction
(3)	Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other leadership or extracurricular organizations.	Added as per TEA instruction
(4)	Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.	Added as per TEA instruction
(c)	**Knowledge and skills:**	
(1)	The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:	
(A)	demonstrate awareness of work place safety and environmental responsibilities in automotive collision and refinishing and understand the use of personal protective equipment	Reworded and moved up for importance
(B)	identify employment opportunities, including entrepreneurship, and certification requirements for the fields of collision repair and refinishing;	
(C)	~~demonstrate~~ review the principles of group participation and leadership related to citizenship and career preparation;	
(D)	identify employers' expectations and appropriate work habits;	

(E)	review the competencies related to resources, information, systems, and technology;	
~~(E)~~	~~demonstrate knowledge of the technical knowledge and skills related to health and safety in the workplace, as specified by appropriate regulations; and~~	
(F)	apply reasoning skills to a variety of workplace situations in order to make ethical decisions.	
(2)	The student relates core academic skills to the requirements of collision repair and refinishing ~~services~~ technology. The student is expected to:	
(A)	~~demonstrate~~ be aware of effective oral and written communication skills with individuals from varied cultures such as fellow workers, management, and customers;	
(B)	complete collision repair and refinishing orders and related paperwork;	
(C)	locate and read documents such as parts catalogs, and	
(D)	demonstrate ~~mathematical~~ basic competencies required to use and interpret service repair manuals.	
(3)	The student ~~knows~~ understands the technical knowledge and skills ~~that form the basis~~ of basic collision repair and refinishing systems. The student is expected to:	
(A)	~~demonstrate the types of repair procedures~~ be aware of basic types of repair procedures used in the auto collision industry;	
(B)	~~demonstrate the proper preparation~~ be aware of basic preparation, application, and refinishing of various paint products;	
(C)	estimate parts and labor costs on collision repair and refinishing orders; and	
(D)	~~perform~~ review precision ~~measurement~~ measurements diagrams to diagnose ~~component shape and alignment~~ vehicle body shape and frame alignment angles.	
(4)	The student knows the basic function and application of tools, equipment, technologies, and materials used in collision repair and refinishing services. The student is expected to:	
(A)	~~use~~ identify hand and power tools and equipment commonly employed in collision repair and refinishing safely to industry standards;	
(B)	identify proper welding and cutting techniques and processes;	
(C)	~~properly handle and dispose of~~ identify environmentally hazardous materials used in collision repair and refinishing technologies; and	
(D)	~~demonstrate~~ be aware of existing knowledge of new and emerging collision repair and refinishing technologies.	
(5)	The student ~~applies~~ reviews the technical knowledge and skills of collision repair and refinishing The student is expected to:	

(A)	~~perform~~ review regular audits and inspections to maintain compliance with safety, health, and environmental regulations;	
(B)	identify types of vehicle construction materials and associated repair methods;	
(C)	identify methods of collision energy management and types of damage;	
(D)	determine vehicle damage and prepare an estimate of the repair costs;	
(E)	determine body panel damage and identify the associated repair methods;	
(F)	identify types of vehicle finishes and associated refinish techniques;	
(G)	identify vehicle occupant restraint systems and associated repair methods;	
(H)	identify vehicle body components and repair or replace considerations;	
(I)	~~demonstrate~~ review the welding and cutting processes used in vehicle collision repair;	
(J)	~~remove, install, and adjust vehicle~~ review ~~-~~mechanical and electrical components;	
(K)	identify and determine the cause of paint and refinishing defects;	
(L)	discuss interior and exterior trim repair;	
(M)	discuss corrosion protection; and	
(N)	~~demonstrate~~ review vehicle detailing.	

§130.398. Collision Repair and Refinishing I ~~(~~ Two Credit).		
	TEKS with edits	Committee Comments
(a)	**General requirements**. This course is recommended for students in Grades 10 -12. Prerequisite: Basic Collision Repair and Refinishing	This course is designed to be the second step in a coherent sequence for Collision Repair and Refinishing.
(b)	**Introduction:**	
(1)	General Statement About CTE: CTE instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.	Added per TEA instruction
(2)	Career Cluster General Statement: The Transportation, Distribution & Logistics Career Cluster focuses on Planning, management, and movement of people, materials, and goods by road, pipeline, air, rail and water and related professional support services such as transportation infrastructure planning and management, logistics services, mobile equipment and facility maintenance.	Added per TEA instruction
(3)	Course information: Collision repair and refinishing services include knowledge of the processes, technologies, and materials used in the reconstruction and alteration of vehicles. This course is designed to teach the concepts and theory of systems related to automotive collision repair and refinishing. Career and technical programs enable students to gain entry-level employment in a high-skill, high-wage job and/or to continue their education.	Added per TEA instruction
(4)	CTSO Statement: Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other leadership or extracurricular organizations.	Added per TEA instruction
(5)	Such As and Including Statement: Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.	Added per TEA instruction
(c)	**Knowledge and skills:**	
(1)	The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:	
(A) ~~(E)~~	demonstrate awareness of work place safety and environmental responsibilities in automotive collision and refinishing and understand the use of personal protective equipment	Reworded for importance

(B)~~(A)~~	identify employment opportunities, including entrepreneurship, and certification requirements for the fields of collision repair and refinishing;	
(C)~~(B)~~	demonstrate the principles of group participation and leadership related to citizenship and career preparation;	
(D)~~(C)~~	identify employers' expectations and appropriate work habits;	
(E)~~(D)~~	review the competencies related to resources, information, systems, and technology;	
~~(E)~~	~~demonstrate awareness of the technical knowledge and skills related to health and safety in the workplace, as specified by appropriate regulations; and~~	Reworded and moved up for importance
(F)	apply reasoning skills to a variety of workplace situations in order to make ethical decisions.	
(2)	The student relates core academic skills to the requirements of collision repair and refinishing technology ~~services~~. The student is expected to:	
(A)	demonstrate effective oral and written communication skills with individuals from varied cultures such as fellow workers, management, and customers;	
(B)	complete collision repair and refinishing orders and related paperwork;	
(C)	locate, read, and interpret documents such as schematics, charts, diagrams, graphs, ~~-~~parts catalogs, and service-repair manuals and bulletins; and	
(D)	demonstrate ~~mathematical basic~~ competencies required to use and interpret service repair manuals.	
(3)	The student ~~knows~~ understands the technical knowledge and skills ~~that form the core knowledge~~ of collision repair and refinishing ~~services~~ systems. The student is expected to:	
(A)	demonstrate the basic types of repair procedures for the different types of vehicle body constructions; used In the auto collision industry.	
(B)	demonstrate the proper preparation, application, and refinishing of various paint products;	
(C)	estimate parts and labor costs on collision repair and refinishing orders; and	
(D)	perform precision measurements using mechanical devices to diagnose vehicle ~~component~~ body shape and frame alignment angles.	
(4)	The student knows the function and application of tools, equipment, technologies, and materials used in collision repair and refinishing services. The student is expected to:	
(A)	Use hand and power tools and equipment commonly employed in collision repair and refinishing safely to industry standards;	
(B)	identify proper welding and cutting techniques and processes;	

(C)	properly handle and dispose of environmentally hazardous materials used in collision repair and refinishing technologies; and	
(D)	Demonstrate knowledge of new and emerging collision repair and refinishing technologies.	
(5)	The student applies the technical knowledge and skills of collision repair and refinishing to simulated or actual work situations. The student is expected to:	
(A)	perform regular audits and inspections to maintain compliance with safety, health, and environmental regulations;	
(B)	identify types of vehicle construction materials and associated repair methods;	
(C)	identify methods of collision energy management and types of damage;	
(D)	determine vehicle damage and prepare an estimate of the repair costs;	
(E)	determine body panel damage and identify the associated repair methods;	
(F)	identify types of vehicle finishes and associated refinish techniques;	
(G)	identify vehicle occupant restraint systems and associated repair methods;	
(H)	identify vehicle body components and repair or replace considerations;	
(I)	demonstrate the welding and cutting processes used in vehicle collision repair;	
(J)	remove, install, and adjust vehicle mechanical and electrical components;	
(K)	identify and determine the cause of paint and refinishing defects;	
(L)	discuss interior and exterior trim repair;	
(M)	discuss corrosion protection; and	
(N)	demonstrate vehicle detailing.	

§130.xxx. Collision Repair and Refinishing II(Three Credits).Practicum This course would complete a coherent sequence in collision repair and refinish		
	TEKS with edits	Committee Comments
(a)	**General requirements**. This course is recommended for students in Grades 10 -12. ~~Recommended~~ prerequisite: ~~Collision Repair and Refinishing.~~ Basic Collision Repair and Refinishing and/or Collision Repair and Refinishing I.	This course is designed to be the last step in a coherent sequence for Collision Repair and Refinish. Students will be able to intern at a shop and or dealership for practical experience This course would complete a coherent sequence in collision repair and refinish
(b)	**Introduction:**	
(1)	CTE instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.	Added per TEA instruction
(2)	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 and related professional support services such as transportation infrastructure planning and management, logistics services, mobile equipment and facility maintenance.	Added per TEA instruction
(3)	Collision repair and refinishing services include knowledge of the processes, technologies, and materials used in the reconstruction and alteration of vehicles. This course is designed to teach the concepts and theory of systems related to automotive collision repair and refinishing. Career and technical programs enable students to gain entry-level employment in a high-skill, high-wage job and/or to continue their education.	Added per TEA instruction
(4)	Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other leadership or extracurricular organizations.	Added per TEA instruction
(5)	Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.	Added per TEA instruction
(c)	**Knowledge and skills**.	
~~(1)~~	~~The student knows the employability characteristics of a successful worker in the modern workplace. The student is expected to:~~	
(1)	The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to: ~~The student will achieve additional academic knowledge and skills required to pursue the full range of career and postsecondary education opportunities. The student is expected to:~~	
(A)	demonstrate advanced knowledge of ~~the technical knowledge and skills related to health and safety in the workplace, as specified by appropriate government regulations;~~ work	Reworded for importance

	place safety and environmental responsibilities in automotive collision and refinishing and understand the use of personal protective equipment;	
(B)	use oral and written communication skills in creating, expressing and interpreting information and ideas including technical terminology and information;	
(C)	identify employment opportunities, including entrepreneurship, and certification requirements for the fields of collision repair and refinishing ~~technologies~~;	
(D)	solve problems using critical thinking skills (analyze, synthesize, and evaluate) independently and in teams. Solve problems using creativity and innovation.	
(D)	examine the principles of group participation and leadership related to citizenship and career preparation;	
(E)	~~evaluate employers' expectations and appropriate work habits;~~ clarify the problems or issues to be addressed in collision repair	
(F)	~~apply the competencies related to resources, information, systems, and technology;~~ identify constraints and parameters related to the problem presented in a collision shop;	
(G)	~~apply reasoning skills to a variety of workplace situations in order to make ethical decisions~~ formulate a set of objectives for the solution that address the key issues presented in a collision shop;	
(H)	prepare a resume; and	
(I)	demonstrate job interview skills.	
(2)	The student relates core academic skills to the requirements of collision repair and refinishing ~~services~~. The student is expected to:	
(A)	~~Demonstrate effective oral and written communication skills with individuals from varied cultures such as fellow workers, management, and customers;~~ evaluate possible outcomes from implementation of alternative solutions. with individuals from varied cultures such as fellow workers, management, and customers;	
(B)	~~evaluate completed collision repair and refinishing orders and related paperwork; and~~ analyze available information and evaluate and complete collision repair and refinishing orders and related paperwork;	
(C)	~~locate, read, and interpret~~ synthesize alternative ideas, proposals to interpret documents such as schematics, charts, diagrams, graphs, parts catalogs, and service-repair manuals and bulletins; and	
(D)	evaluate the accuracy of the basic assumptions outlined in the service repair manuals.	
(3)	~~The student knows advanced technical knowledge and skills that form the core knowledge of collision repair and refinishing services. The student is expected to~~: The student will develop,	

	implement and evaluate solutions to collision repair related performance problems using a structured problem-solving process in order to improve business The student is expected to:	
(A)	~~demonstrate the types of repair procedures for the different types of vehicle body constructions~~; develop and represent comprehensive repair procedures for the different types of vehicle body constructions; used In the auto collision industry;	
(B)	access the proper preparation, application, and refinishing of various paint products; decals and adhesives;	
(C)	~~defend the estimated parts and labor costs on collision repair and refinishing technology orders; and~~ assess the potential impact of the risks, costs, and benefits of collision repair and refinishing orders; and	
(D)	~~locate, read, and interpret documents such as schematics, charts, diagrams, graphs, parts catalogs, and service repair manuals and bulletins.~~ formulate an implementation strategy for precision measurements using mechanical devices to diagnose vehicle component body shape and frame alignment angles compared to published specifications, and determine necessary repairs.	
~~(3)~~	~~The student knows advanced technical knowledge and skills that form the core knowledge of collision repair and refinishing services. The student is expected to:~~	
~~(A)~~	~~demonstrate the types of repair procedures for the different types of vehicle body constructions;~~	
~~(B)~~	~~access the proper preparation, application, and refinishing of paint products, decals, and adhesives;~~	
~~(C)~~	~~defend the estimated parts and labor costs on collision repair and refinishing technology orders; and~~	
~~(D)~~	~~perform precision measurements to diagnose component shape and alignment, compare to published specifications, and determine necessary repair.~~	
~~(3)~~(4)	The student knows the function and application of tools, equipment, technologies, and materials used in collision repair and refinishing services. The student is expected to:	
(A)	use hand and power tools and equipment commonly employed in collision repair and refinishing technologies , according to industry safety standards;	
(B)	demonstrate proper welding and cutting techniques and processes;	
(C)	properly handle and dispose of environmentally hazardous materials used in collision repair and refinishing technologies; and	
(D)	discuss and demonstrate knowledge of new and emerging collision repair and refinishing technologies.	

~~(4)~~(5)	~~The student applies the advanced technical knowledge and skills to simulated and actual work situations in collision repair and refinishing. The student is expected to~~: The student applies the technical knowledge and skills of collision repair and refinishing to simulated or actual work situations. The student is expected to:	
(A)	perform and analyze regular audits and inspections to maintain compliance with safety, health, and environmental regulations;	
(B)	inspect ~~straighten, and align vehicle frames and replace damaged body units;~~ types of vehicle construction materials and associated repair methods;	
(C)	inspect ~~and repair damaged sheet metal panels, fiberglass, and synthetic body parts;~~ methods of collision energy management and types of damage;	
(D)	inspect~~, repair, and adjust vehicle body parts;~~ for vehicle damage and prepare an estimate of the repair costs;	
(E)	~~remove and install vehicle glass and accompanying mechanical and automated parts;~~ inspect and determine body panel damage and identify the associated repair methods;	
(F)	~~determine body panel damage and demonstrate the associated repair methods;~~ inspect different types of vehicle finishes and associated refinish techniques;	
(G)	~~determine vehicle structural damage and demonstrate the associated repair methods;~~ inspect vehicle occupant restraint systems and associated repair methods;	
(H)	~~determine the type of vehicle finish and demonstrate the associated preparation and refinish techniques;~~ inspect vehicle body components and repair or replace considerations;	
(I)	~~determine the type of vehicle finish and demonstrate paint selection, mixing, matching, and application;~~ demonstrate the welding and cutting processes used in vehicle collision repair;	
(J)	~~demonstrate paint application finishing and final detailing;~~ remove, install, and adjust vehicle mechanical and electrical components;	
(K)	~~apply recognized welding and cutting processes used in vehicle collision repair;~~ inspect, identify, and determine the cause of paint and refinishing defects;	
(L)	~~identify the cause of paint and refinishing defects;~~ discuss and demonstrate interior and exterior trim repair;	
(M)	discuss and demonstrate corrosion protection; and	
(N)	demonstrate and discuss vehicle detailing.	

Diesel Equipment Technology I (One Credit). Grades 9-12 This is the 1st course in the concurrent sequence for Diesel Equipment Technology.		
	TEKS	Committee Comments
(a)	**General requirements**. This course is recommended for students in Grades 9-12. This is the 1st course in the concurrent sequence for Diesel Equipment Technology.	To meet Industry need for Diesel Technicians
(b)	**Introduction**	
(1)	CTE instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.	Added Per TEA Instruction
(2)	The Transportation, Distribution & Logistics Career Cluster focuses on planning, management, and movement of people, materials, and goods by road, pipeline, air, rail and water and related professional support services such as transportation infrastructure planning and management, logistics services, mobile equipment and facility maintenance.	Added Per TEA Instruction
(3)	Rapid advances in Diesel Technology have created new career opportunities and demands in trades and industries. Trade and industrial education provides the knowledge, skills, and technologies required for employment in transportation systems. Career and technical programs enable students to gain entry-level employment in a high-skill, high-wage job and/or to continue their education. Students need to develop knowledge of the concepts and skills related to this system in order to apply them to personal/career development. Trade and industrial education depends on and supports integration of academic and career and technology knowledge and skills. To prepare for success, students must have opportunities to reinforce, apply, and transfer their knowledge and skills to a variety of settings and problems. Knowledge about career opportunities, requirements, and expectations and the development of workplace skills prepare students for success. Diesel services include knowledge of the function, diagnosis, and service of major diesel systems.	Added Per TEA Instruction
(4)	Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other leadership or extracurricular organizations.	Added Per TEA Instruction
(5)	Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.	Added Per TEA Instruction
(c)	**Knowledge and skills.**	
(1)	The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:	
(A)	identify employment opportunities, including entrepreneurship, and certification requirements for the field of Diesel Technology;	
(B)	demonstrate the principles of group participation and leadership related to citizenship and career preparation;	

(C)	identify employers' expectations and appropriate work habits;	
(D)	identify the competencies related to resources, information systems, and technology as it pertains to diesel technology;	
(E)	demonstrate knowledge of the technical knowledge and skills related to health and safety in the workplace as specified by appropriate government regulations and;	
(F)	demonstrate workplace ethics in a variety of workplace scenarios.	
(2)	The student demonstrates academic skills related to the requirements of transportation technology. The student is expected to:	
(A)	demonstrate effective oral communication skills with individuals from varied cultures such as fellow students, co-workers, and customers.	
(B)	demonstrate effective written communication skills with individuals from varied cultures such as fellow students, co-workers, and customers.	
(C)	demonstrate math skills in measurement, addition, subtraction, multiplication, and division in both metric and US customary systems.	
(3)	The student demonstrates technical knowledge and skills that form the knowledge of diesel services. The student is expected to:	
(A)	describe the function of the major components of diesel powered vehicles such as engines, fuel injection systems, lubrication, cooling, electrical, air conditioning systems, air induction, exhaust, and emissions;	
(B)	describe the function of the chassis components such as braking, steering, transmission, drivetrain, suspension systems, pneumatics, hydraulics;	
(C)	learn to locate, read / interpret documents such as schematics, charts, diagrams, graphs, parts catalogs, and service-repair manuals and bulletins;	
(D)	learn precision measurement procedures to diagnose component wear, compare to published specifications, and determine necessary repair; and	
(E)	discuss alternative fuel vehicles.	
(4)	The student learns the functions and applications of the tools, equipment, technologies, and materials used in diesel service. The student is expected to:	
(A)	discuss and demonstrate the safe use of hand and power tools and equipment commonly employed in the diesel field;	
(B)	discuss the proper handling and disposal of environmentally hazardous materials generated in the service of diesel equipment;	

(C)	demonstrate awareness of new and emerging diesel technologies; and	
(D)	identify and discuss the proper use of diagnostic tools and equipment.	
(E)	demonstrate awareness of fluid/pneumatic, properties, controls and safety	
(5)	The student applies the technical knowledge and skills of the trade-to-work situations. The student is expected to:	
(A)	understand the procedures of parts management, such as ordering, stocking, and locating parts;	
(B)	demonstrate procedures for removal, repair, and replacement of engine components;	
(C)	understand and discuss procedures for service and repair of systems such as braking, steering, and suspension systems of hydraulic and pneumatic power;	
(D)	understand electrical / electronic systems basic theory such as; ohms law, voltage drop, resistance, amperage, voltage, and wiring diagram symbol;	
(E)	understand proper procedures to service/ repair air-conditioning, heating, and accessory systems;	
(F)	understand procedures to service and repair chassis and power train systems;	
(G)	understand procedures to service and repair cooling and lubrication systems; and	
(H)	understand the process to perform regular audits / inspections to maintain compliance with appropriate governmental regulations in areas such as safety, health, and environmental protection.	

Diesel Equipment Technology II (Two Credits). Prerequisite Diesel Equipment Technology I **Grades 10-12 This is the 2nd course in the concurrent sequence for Diesel Equipment Technology proceeding to Practicum in Transportation Systems.**		
TEKS with edits		Committee Comments
(a)	**General requirements.** This course is recommended for students in Grades 10-12. Prerequisite Diesel Equipment Technology I This is the 2nd course in the concurrent sequence for Diesel Equipment Technology proceeding to Practicum in Transportation Systems.	This is a new course developed to meet industry needs for diesel technicians.
(b)	**Introduction**	
(1)	CTE instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.	Added per TEA instruction
(2)	The Transportation, Distribution & Logistics Career Cluster focuses on planning, management, and movement of people, materials, and goods by road, pipeline, air, rail and water and related professional support services such as transportation infrastructure planning and management, logistics services, mobile equipment and facility maintenance.	Added per TEA instruction
(3)	Rapid advances in Diesel Technology have created new career opportunities and demands in trades and industries. Trade and industrial education provides the knowledge, skills, and technologies required for employment in transportation systems. Career and technical programs enable students to gain entry-level employment in a high-skill, high-wage job and/or to continue their education. Students need to develop knowledge of the concepts and skills related to this system in order to apply them to personal/career development. Trade and industrial education depends on and supports integration of academic and career and technology knowledge and skills. To prepare for success, students must have opportunities to reinforce, apply, and transfer their knowledge and skills to a variety of settings and problems. Knowledge about career opportunities, requirements, and expectations and the development of workplace skills prepare students for success. Diesel services include knowledge of the function, diagnosis, and service of major diesel systems.	Added Per TEA Instruction
(4)	Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other leadership or extracurricular organizations.	Added Per TEA Instruction
(5)	Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.	Added Per TEA Instruction
(c)	**Knowledge and skills.**	
(1)	The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:	

(A)	identify employment opportunities, including entrepreneurship, and certification requirements for the field of Diesel Technology;	
(B)	demonstrate the principles of group participation and leadership related to citizenship and career preparation;	
(C)	identify employers' expectations and appropriate work habits;	
(D)	apply the competencies related to resources, information systems, and technology as it pertains to diesel technology;	
(E)	demonstrate the technical knowledge and skills related to health and safety in the workplace as specified by appropriate government regulations and;	
(F)	demonstrate workplace ethics in a variety of workplace scenarios.	
(2)	The student demonstrates academic skills related to the requirements of transportation technology. The student is expected to:	
(A)	demonstrate effective oral communication skills with individuals from varied cultures such as fellow students, co-workers, and customers.	
(B)	demonstrate effective written communication skills with individuals from varied cultures such as fellow students, co-workers, and customers.	
(C)	demonstrate math skills in measurement, addition, subtraction, multiplication, and division in both metric and US customary systems.	
(3)	The student demonstrates technical knowledge and skills that form the knowledge of diesel services. The student is expected to:	
(A)	describe the function of the major components of diesel powered vehicles/equipment such as engines, fuel injection systems, lubrication, cooling, electrical, air conditioning systems, air induction, exhaust, and emissions and perform diagnostics, repair replace and perform failure analysis;	
(B)	describe the function of the chassis components such as braking, steering, transmission, drivetrain, suspension systems, pneumatics, hydraulics;	
(C)	diagnose, repair, and replace auxiliary equipment such as power take offs, hydraulic components, and pneumatic components,	
(D)	locate, read, and interpret documents such as schematics, charts, diagrams, graphs, parts catalogs, and service-repair manuals and bulletins;	
(E)	perform precision measurements to diagnose component wear, compare to published specifications, and determine necessary repair; and	
(F)	discuss alternative fuel vehicles.	

(4)	The student is aware of the functions and applications of the tools, equipment, technologies, and materials used in diesel service. The student is expected to:	
(A)	demonstrate safe use of hand and power tools and equipment commonly employed in diesel equipment technology;	
(B)	discuss the proper handling and disposal of environmentally hazardous materials generated in the servicing of diesel equipment;	
(C)	demonstrate awareness of emerging diesel technologies;	
(D)	identify and discuss the proper use of diagnostic tools.	
(E)	demonstrate knowledge of fluid/pneumatic properties, controls and safety	
(5)	The student applies the technical knowledge and skills of the trade-to-work situations. The student is expected to:	
(A)	demonstrate parts inventory management such as ordering parts, stocking parts, and locating parts;	
(B)	remove, repair, and replace engine components;	
(C)	service and repair diesel equipment systems such as braking, steering, and suspension systems, including pneumatic and hydraulic powered systems;	
(D)	demonstrate service and repair of electrical / electronic systems	
(E)	service and repair air-conditioning, heating, and accessory systems;	
(F)	inspect, service, and repair chassis and power train systems;	
(G)	service and repair cooling and lubrication systems;	
(H)	use appropriate diagnostic equipment on the various systems as appropriate	
(I)	perform regular audits / inspections to maintain compliance with appropriate governmental regulations in areas such as safety, health, and environmental protection.	

§130.xxx. Introduction to Aircraft Technology (One Credit).		
	TEKS with edits	Committee Comments
(a)	**General requirements.** This course is recommended for students in Grades 9 -12.	Entry level class, open to 9 grade or any first year student
(b)	**Introduction**	
(1)	CTE instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.	
(2)	Transportation, Distribution, and Logistics Cluster Planning, management, and movement of people, materials, and goods by road, pipeline, air, rail and water and related professional support services such as transportation infrastructure planning and management, logistics services, mobile equipment and facility maintenance.	
(3)	This course is designed to teach the theory of operation of aircraft airframes, power plants, and avionics systems and associated maintenance and repair practices. Aircraft services include knowledge of the function, diagnosis, and service of the electrical, electronic, hydraulic, pneumatic, airframe, mechanical, and power plant components of aircraft.	
(4)	Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other leadership or extracurricular organizations.	
(5)	Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.	
(A)	Professional Organizations and Certifications available to programs. Skills USA, NATEF, AYES, ASE, OSHA, SP2, Valvoline, Mitchell1, Career Safe, NAPA Training, FFA License or Certification, AIA.	
(c)	**Knowledge and skills.**	
(1)	The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:	Introduction into the aviation Industry, not qualified for hands on activities
(A)	identify employment opportunities, including entrepreneurship, and certification requirements for the field of aircraft services;	
(B)	demonstrate the principles of group participation and leadership related to citizenship and career preparation;	
(C)	identify employers' expectations and appropriate work habits;	
(D)	discuss the competencies related to resources, information, systems, and technology;	

(E)	awareness of the technical knowledge and skills related to health and safety in the workplace, as specified by appropriate government regulations; and	Introduction into the aviation Industry, not qualified for hands on activities
(F)	apply reasoning skills to a variety of simulated workplace situations in order to make ethical decisions.	
(2)	The student relates academic skills to the requirements of aircraft services. The student is expected to:	
(A)	demonstrate effective oral and written communication skills with individuals from varied cultures such as fellow workers, management, and customers;	
(B)	identify requirements of work orders and related paperwork for repairs;	Introduction into the aviation Industry, not qualified for hands on activities
(C)	understanding of estimating parts and labor costs on aircraft repair orders;	Introduction into the aviation Industry, not qualified for hands on activities
(D)	locate, read, and interpret documents such as schematics, charts, graphs, drawings, blueprints, service-repair manuals and service bulletins, airworthiness directives, and federal aviation regulations;	
(E)	demonstrate an understanding of metric and US customary standard measurement systems, perform precision measurements used to diagnose component wear, compare to published specifications, to determine necessary repair; and	Understanding measurements used in aviation industry
(F)	employ develop critical-thinking skills and structured problem-solving skills to diagnose aircraft system malfunctions, solve problems, and make decisions.	
(3)	The student understands the technical knowledge and skills for aircraft services. The student is expected to:	Learning what is required for aircraft service
(A)	demonstrate knowledge of aviation regulations that govern the construction, maintenance, and service of aircraft;	
(B)	demonstrate knowledge of aircraft navigation and electronic communication systems;	
(C)	demonstrate knowledge of airframe construction and repair methods and techniques;	
(D)	demonstrate knowledge of aircraft assembly and rigging procedures;	
(E)	demonstrate knowledge of the service and maintenance of aircraft engines, systems, and components;	
(F)	demonstrate knowledge of aircraft common terminology, standard practices, and the proper use of tools required to complete maintenance, modifications, and repairs;	
(G)	discuss the completion of logbooks and computer applications to maintain required aircraft documents; and	
(H)	demonstrate knowledge of wiring diagrams.	

(4)	The student understands the function and application of the tools, equipment, technologies, and materials used in aircraft services. The student is expected to:	Introduction into the aviation Industry, not qualified for hands on activities
(A)	identify materials and processes used in aircraft maintenance;	Introduction into the aviation Industry, not qualified for hands on activities
(B)	have knowledge and understand the safe use hand and power tools and equipment commonly employed in the maintenance and repair of aircraft;	Introduction into the aviation Industry, not qualified for hands on activities
(C)	learn the proper handling and disposal of environmentally hazardous materials used in servicing aircraft;	
(D)	understand the regular audits and inspections to maintain compliance with safety, health, and environmental regulations; and	
(E)	research and understand the impact of new and emerging aircraft technologies.	Introduction into the aviation Industry, not qualified for hands on activities
(5)	The student applies the technical knowledge and skills of the trade to simulated situations. The student is expected to:	
(A)	learn procedures to accurately calculate aircraft weight and balance;	Introduction into the aviation Industry, not qualified for hands on activities
(B)	learn procedures to predict flight time and fuel consumption;	Introduction into the aviation Industry, not qualified for hands on activities
(C)	learn procedures to predict wind vector, drift, headings, and speed from meteorological information;	Introduction into the aviation Industry, not qualified for hands on activities
(D)	explain and or perform required aircraft airframe, instrument, and engine inspections;	Introduction into the aviation Industry, not qualified for hands on activities
(E)	demonstrate knowledge of aircraft hydraulic and landing gear systems and components;	
(F)	discuss preventative maintenance plans and systems to keep aircraft systems in operation.	
(6)	The student demonstrates appropriate personal and communication skills. The student is expected to:	
(A)	describe and apply ethical and legal responsibilities appropriate to the workplace;	
(B)	demonstrate the uses of proper etiquette and behavior;	
(C)	identify benefits of personal appearance and health habits;	
(D)	practice written and oral communication skills; and	
(E)	employ effective listening skills.	
(7)	The student learns the value of and how to develop an improved occupational experience program as it relates to the aircraft industry. The student is expected to:	

(A)	learn proper record-keeping skills as related to industry-based occupational experiences;	Introduction into the aviation Industry, not qualified for hands on activities
(B)	participate in youth leadership opportunities to create a well-rounded occupational experience;	
(C)	produce a program of activities for a career and technical student organization or other leadership opportunities; and	
(D)	develop a work plan and budget.	

§130.394. Aircraft Technology I (~~One to~~ Two Credits).		
	TEKS with edits	Committee Comments
(A)	**General requirements**. This course is recommended for students in Grades 10-12.	
(B)	**Introduction**	
(1)	~~Career and technical programs enable students to gain entry-level employment in a high-skill, high-wage job and/or to continue their education.~~ CTE instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.	Added per TEA instruction
(2)	~~Planning, management, storage and movement of people, materials, and goods by road, pipeline, air, rail and water and related professional support services such as transportation infrastructure planning and management, logistics services, mobile equipment and facility maintenance.~~ Planning, management, and movement of people, materials, and goods by road, pipeline, air, rail and water and related professional support services such as transportation infrastructure planning and management, logistics services, mobile equipment and facility maintenance.	Added per TEA instruction.
(3)	This course is designed to teach the theory of operation of aircraft airframes, power plants, and avionics systems and associated maintenance and repair practices. Aircraft services include knowledge of the function, diagnosis, and service of the electrical, electronic, hydraulic, pneumatic, airframe, mechanical, and power plant components of aircraft.	Added per TEA instruction
(4)	Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other leadership or extracurricular organizations.	Added per TEA instruction
(5)	Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.	Added per TEA instruction
(C)	**Knowledge and skills.**	
(1)	~~The student knows the employability characteristics of a successful worker in the modern workplace. The student is expected to:~~ The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:	Added per TEA instruction
(A)	identify employment opportunities, including entrepreneurship, and certification requirements for the field of aircraft services;	
(B)	demonstrate the principles of group participation and leadership related to citizenship and career preparation;	
(C)	identify employers' expectations and appropriate work habits;	

(D)	discuss the competencies related to resources, information, systems, and technology;	
(E)	demonstrate knowledge of the technical knowledge and skills related to health and safety in the workplace, as specified by appropriate government regulations; and	
(F)	apply reasoning skills to a variety of workplace situations in order to make ethical decisions.	
(2)	The student relates academic skills to the requirements of aircraft services. The student is expected to:	
(A)	demonstrate effective oral and written communication skills with individuals from varied cultures such as fellow workers, management, and customers;	
(B)	complete work orders and related paperwork;	
(C)	estimate parts and labor costs on aircraft repair orders;	
(D)	locate, read, and interpret documents such as schematics, charts, graphs, drawings, blueprints, service-repair manuals and service bulletins, airworthiness directives, and federal aviation regulations;	
(E)	perform precision measurements to diagnose component wear, compare to published specifications, and determine necessary repair; and	
(F)	employ critical-thinking skills and structured problem-solving skills to diagnose aircraft system malfunctions, solve problems, and make decisions.	
(3)	The student knows the technical knowledge and skills of aircraft services. The student is expected to:	
(A)	demonstrate knowledge of aviation regulations that govern the construction, maintenance, and service of aircraft;	
(B)	demonstrate knowledge of aircraft navigation and electronic communication systems;	
(C)	demonstrate knowledge of airframe construction and repair methods and techniques;	
(D)	demonstrate knowledge of aircraft assembly and rigging procedures;	
(E)	demonstrate knowledge of the service and maintenance of aircraft engines, systems, and components;	
(F)	demonstrate knowledge of aircraft common terminology, standard practices, and the proper use of tools required to complete maintenance, modifications, and repairs;	
(G)	discuss the completion of logbooks and computer applications to maintain required aircraft documents; and	
(H)	demonstrate knowledge of wiring diagrams.	
(4)	The student knows the function and application of the tools, equipment, technologies, and materials used in aircraft services. The student is expected to:	
(A)	identify and select materials and processes used in aircraft maintenance;	

(B)	safely use hand and power tools and equipment commonly employed in the maintenance and repair of aircraft;	
(C)	discuss the proper handling and disposal of environmentally hazardous materials used in servicing aircraft;	
(D)	perform regular audits and inspections to maintain compliance with safety, health, and environmental regulations; and	
(E)	demonstrate knowledge of new and emerging aircraft technologies.	
(5)	The student applies the technical knowledge and skills of the trade to simulated and actual work situations. The student is expected to:	
(A)	accurately calculate aircraft weight and balance;	
(B)	predict flight time and fuel consumption;	
(C)	predict wind vector, drift, headings, and speed from meteorological information;	
(D)	perform required aircraft airframe, instrument, and engine inspections;	
(E)	demonstrate knowledge of aircraft hydraulic and landing gear systems and components;	
(F)	apply the essential knowledge and skills in aircraft services to work-based learning experiences such as cooperative education, job shadowing, mentoring, and apprenticeship training; and	
(G)	discuss preventative maintenance plans and systems to keep aircraft systems in operation.	
(6)	The student demonstrates appropriate personal and communication skills. The student is expected to:	
(A)	describe and apply ethical and legal responsibilities appropriate to the workplace;	
(B)	demonstrate the uses of proper etiquette and behavior;	
(C)	identify benefits of personal appearance and health habits;	
(D)	practice written and oral communication skills; and	
(E)	employ effective listening skills.	
(7)	The student learns the value of and how to develop an improved occupational experience program as it relates to the aircraft industry. The student is expected to:	
(A)	apply proper record-keeping skills as related to industry-based occupational experiences;	
(B)	participate in youth leadership opportunities to create a well-rounded occupational experience;	
(C)	produce a program of activities for a career and technical student organization or other leadership opportunities; and	
(D)	develop a work plan and budget.	

§130.395. ~~Advanced~~ Aircraft Technology II, Advanced (Two ~~to Three~~ Credits).		
	TEKS with edits	Committee Comments
(a)	**General requirements**. This course is recommended for students in Grades 11-12. Recommended prerequisite: Aircraft Technology I.	Designated the number on the course Aircraft Technology I is a perquisite to the Aircraft Technology II Advanced class
(b)	**Introduction.** ~~Career and technical programs enable students to gain entry-level employment in a high-skill, high-wage job and/or to continue their education.~~ CTE instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.	Added per TEA instruction
(1)	~~Transportation, Distribution, and Logistics Cluster~~ ~~Planning, management, storage and movement of people, materials, and goods by road, pipeline, air, rail and water and related professional support services such as transportation infrastructure planning and management, logistics services, mobile equipment and facility maintenance.~~ Transportation, Distribution, and Logistics Cluster Planning, management, and movement of people, materials, and goods by road, pipeline, air, rail and water and related professional support services such as transportation infrastructure planning and management, logistics services, mobile equipment and facility maintenance.	Added per TEA instruction
(2)	This course is designed to teach the theory of operation of aircraft airframes, power plants, and avionics systems and associated maintenance and repair practices. Aircraft services include knowledge of the function, diagnosis, and service of the electrical, electronic, hydraulic, pneumatic, airframe, mechanical, and power plant components of aircraft ~~as governed by federal aviation regulations~~.	Added per TEA instruction
(3)	Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other leadership or extracurricular organizations.	Added per TEA instruction
(4)	Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.	Added per TEA instruction
(5)	Professional Organizations and Certifications available to programs. Skills USA, NATEF, AYES, ASE, OSHA, SP2, Valvoline, Mitchell1, Career Safe, NAPA Training, FFA License or Certification, AIA.	Added per TEA instruction
~~(b)~~	~~Introduction. This course is designed to apply the theory of operation, repair, and maintenance of aircraft airframe, power plant, and avionics systems. Aircraft services include knowledge of the function, diagnosis, and service of the electrical, electronic, hydraulic, pneumatic, airframe, mechanical, and power plant components of aircraft as governed by federal aviation regulations.~~	
(c)~~(B)~~	**Knowledge and skills**.	

(1)	~~The student knows the employability characteristics of a successful worker in the modern workplace. The student is expected to:~~ The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:	Added per TEA instruction
(A)	discuss employment opportunities, including entrepreneurship, and certification requirements for the field of aircraft services;	
(B)	demonstrate the principles of group participation and leadership related to citizenship and career preparation;	
(C)	evaluate employers' expectations and appropriate work habits;	
(D)	apply the competencies related to resources, information systems, and technology;	
(E)	demonstrate knowledge of the technology and skills related to health and safety in the workplace, as specified by appropriate government regulations; and	
(F)	apply reasoning to a variety of workplace situations in order to make ethical decisions.	
(2)	The student relates academic skills to the requirements of aircraft services. The student is expected to:	
(A)	demonstrate effective oral and written communication skills with individuals from varied cultures, including fellow workers, management, and customers;	
(B)	access work orders and related paperwork;	
(C)	estimate parts and labor costs on aircraft repair orders;	
(D)	locate, read, and interpret documents such as schematics, charts, graphs, drawings, blueprints, service-repair manuals and service bulletins, airworthiness directives, and federal aviation regulations;	
(E)	perform precision measurements to diagnose component wear, compare to published specifications, and determine correct replacement parts; and	
(F)	employ critical-thinking skills and structured problem-solving skills to diagnose aircraft system malfunctions, solve problems, and make decisions.	
(3)	The student knows the technical knowledge and skills of aircraft services. The student is expected to:	
(A)	research aviation regulations that govern the construction, maintenance, and service of aircraft;	
(B)	diagnose and repair aircraft navigation and electronic communication systems;	
(C)	demonstrate airframe construction and repair methods and techniques;	
(D)	demonstrate aircraft assembly and rigging procedures; and	
(E)	demonstrate service and maintenance of aircraft engines, systems, and components.	

(4)	The student knows the function and application of the tools, equipment, technologies, and materials used in aircraft services. The student is expected to:	
(A)	identify and select basic materials and processes used in aircraft maintenance;	
(B)	safely use hand and power tools and equipment commonly employed in the maintenance and repair of aircraft;	
(C)	discuss the proper handling and disposal of environmentally hazardous materials used in maintaining and servicing aircraft; and	
(D)	demonstrate the application of new and emerging aircraft technologies.	
(5)	The student applies the technical knowledge and skills of the trade to simulated and actual work situations. The student is expected to:	
(A)	accurately calculate aircraft weight and balance;	
(B)	predict flight time and fuel consumption;	
(C)	predict wind vector, drift, headings, and speed from meteorological information;	
(D)	perform required aircraft airframe, instrument, and engine inspections;	
(E)	service and repair aircraft hydraulic and landing gear systems and components;	
(F)	apply the essential knowledge and skills in aircraft services to learning experiences such as job shadowing, mentoring, apprenticeship training, and career preparation;	
(G)	develop preventative maintenance plans and systems to keep aircraft systems in operation; and	
(H)	perform regular audits and inspections to maintain compliance with safety, health, and environmental regulations.	

§130.392. a Principles of Transportation Systems~~, Distribution, and Logistics~~ (One-Credit)		
	TEKS with edits	Committee Comments
(a)	**General requirements**. This course is recommended for students in Grades 9-12.	
(b)	**Introduction.**	We feel that the information in this cluster is too broad for one principles class therefore we have split the principles into 2 separate classes: Principles of Transportation Systems (a) Principles of Distribution & Logistics (b). Each principles course can be taken individually for different tracks to follow along the career path.
(1)	CTE instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.	
(2)	The Transportation, Distribution & Logistics Career Cluster focuses on planning, management, and movement of people, materials, and goods by road, pipeline, air, rail and water and related professional support services such as transportation infrastructure planning and management, logistics services, mobile equipment and facility maintenance.	
(3)	In Principles of Transportation~~, Distribution, and Logistics~~, students 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~~, distribution, and logistics~~ 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.	
(4)	Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other leadership or extracurricular organizations.	
(5)	Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.	
(c)	**Knowledge and skills**.	
(1)	~~The student explores the employability characteristics for success.~~ The student demonstrates professional standards/employability skills as related by business and industry. The student is expected to	

(A)	identify career development and entrepreneurship opportunities related to transportation systems, ~~distribution, and logistics~~ such as how to search for and obtain employment, the qualifications that are required for varying career fields, and how to advance in a position;	
(B)	identify careers in transportation, ~~distribution, and logistics~~ systems;	
(C)	apply competencies related to resources, information, interpersonal skills, problem solving, critical thinking, and systems of operation within transportation , ~~distribution, and logistics;~~	
(D)	discuss certification opportunities;	
(E)	demonstrate knowledge of personal and occupational health and safety;	
(F)	discuss response plans to emergency situations;	
(G)	identify employers' expectations, appropriate work habits, ethical conduct, legal responsibilities, and good citizenship skills; and	
(H)	explore career goals, objectives, and strategies as part of a plan for future career opportunities.	
(2)	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;	
(B)	apply proper record-keeping skills as they relate to industry-based occupational experiences;	
(C)	use a customized record-keeping system for the individual industry-based occupational experiences;	
(D)	discuss youth leadership opportunities to create a well-rounded industry-based occupational experience; and	
(E)	develop a work plan and budget.	
(3)	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; and	
(C)	describe marketing factors and practices that impact other cultures.	
(4)	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, ~~distribution, and logistics~~ industries;	
(B)	identify the scope and effect upon society of the transportation~~, distribution, and logistics~~ industries;	

(C)	identify significant historical and current developments in the transportation~~, distribution, and logistics~~ industries;	
(D)	identify potential future scenarios for the transportation~~, distribution, and logistics~~ industry systems;	
(E)	describe how emerging technologies and globalization impact the transportation, ~~distribution, and logistics~~ industries; and	
(F)	compare and contrast issues affecting the transportation, ~~distribution, and logistics~~ industries such as international trade, employment, safety, and environmental issues.	
(5)	The student analyzes the structure of transportation, ~~distribution, and logistics~~ 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.	
(6)	The student explains the transportation, ~~distribution, and logistics~~ industries at the local, state, national, and international levels. The student is expected to:	
(A)	identify reasons for world trade and globalization;	
(B)	identify the political impact of transportation, ~~distribution, and logistics~~;	
(C)	review regulations and major laws to evaluate their impact on transportation~~, distribution, and logistics;~~	
(D)	read appropriate written material to stay abreast of current issues impacting transportation, ~~distribution, and logistics;~~	
(E)	collect public opinion and data in order to make informed decisions;	
(F)	use critical-thinking skills to identify and organize alternatives and evaluate public policy issues related to transportation, ~~distribution, and logistics;~~ and	
(G)	evaluate performance and contract compliance of contractors and service providers.	
(7)	The student demonstrates appropriate personal 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;	
(D)	practice written and oral communication skills in formal and informal situations;	
(E)	practice effective listening 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	
(H)	demonstrate speaking skills.	
(8)	The student applies appropriate research methods for transportation~~, distribution, and logistics~~ systems. The student is expected to:	
(A)	define major fields of research and development;	
(B)	identify and apply scientific methods of research in transportation~~, distribution, and logistics~~ industries;	
(C)	use a variety of resources for research and development; and	
(D)	describe the scientific methods of research.	
(9)	The student applies problem-solving, mathematical, and organizational skills in order to maintain financial and logistical records as related to transportation. The student is expected to:	
(A)	discuss project proposals;	
(B)	maintain records appropriate to transportation~~, distribution, and logistics~~ 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.	
(10)	The student uses information technology tools specific to transportation~~, distribution, and logistics~~ industries to access, manage, integrate, and create information. The student is expected to:	
(A)	use management software, email applications, and Internet applications;	
(B)	demonstrate word-processing, database, spreadsheet, and presentation software;	
(C)	examine collaborative, groupware, and virtual meeting software;	
(D)	discuss Geographic Information Systems and Global Positioning Systems; and	
(E)	discuss other computer-based equipment in transportation~~, distribution, and logistics~~ systems.	
(11)	The student discusses methods to reduce sources of 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 the transportation, ~~distribution, and logistics~~ environments;	
(C)	demonstrate first aid and cardiopulmonary resuscitation procedures; and	
(D)	demonstrate proper use of safety equipment.	
(E)	Evaluate worksite safety areas and/or plans	
(12)	The student examines DPS regulations as related to the transportation industry. The student is expected to:	
(A)	discuss rules pertaining to obtaining a Commercial Driver's License (CDL) ;	
(B)	explain the different CDL License ;	
(C)	discuss the various endorsements available for a CDL;	
(D)	Discuss the requirements for each endorsement;	
(F)	identify material handling and storage equipment, fork lifts (electric and other fuels);	
(G)	identify types of transportation that supply warehouses and distribution centers.	

§130.393. Energy, Power, ~~and~~ of Transportation Systems (One ~~Half to One~~ Credit).		
	TEKS with edits	Committee Comments
(a)	**General requirements**. This course is recommended for students in Grades 10~~9~~-12. ~~Recommended prerequisite: Principles of Transportation, Distribution, and Logistics.~~ Recommended prerequisite: Principles of Transportation Systems	This has a recommended prerequisite course.
(b)	**Introduction.**	
(1)	CTE instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.	
(2)	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 and related professional support services such as transportation infrastructure planning and management, logistics services, mobile equipment and facility maintenance.	
(3)	The businesses and industries of the Transportation, Distribution, and Logistics cluster are rapidly expanding to provide new career opportunities. Students will need to understand the interaction between various vehicle systems, including engines, transmissions, brakes, fuel, cooling, and electrical. The logistics used to move goods and services to consumers, and the components of transportation infrastructure. Performance requirements will include academic and technical skills. Students prepared to meet the expectations of employers in this industry must be able to interact and relate to others and understand the technologies used in order to provide products and services in a timely manner. The increasing demand for employees will provide growth potential.	
(4)	Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other leadership or extracurricular organizations.	Added per TEA Instruction
(5)	Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.	
(c)	**Knowledge and skills.**	
(1)	~~The student knows the employability characteristics that lead to success.~~ The student demonstrates professional standards/employability skills as related by business and industry. The student is expected to:	
(A)	demonstrate the principles of group participation and leadership related to citizenship and career preparation;	
(B)	identify employers' expectations and appropriate work habits;	

(C)	identify career development and entrepreneurship opportunities in the energy, power, ~~and~~ of transportation systems, including how to search for and obtain employment and what qualifications are required for varying career fields;	
(D)	identify employment opportunities~~, including entrepreneurship,~~ and certification requirements for the field of energy, power, ~~and~~ of transportation systems;	
(E)	discuss certification ~~opportunities~~ requirements to meet state academic standards and qualifications for employment in selected fields of study;	
(F)	apply ethical reasoning to a variety of workplace scenarios in order to make ethical decisions;	
~~(G)~~	~~apply competencies related to resources, information, systems, and technology;~~	
(~~H~~G)	identify opportunities for leadership development and personal growth;	
(~~I~~H)	describe and apply team dynamics principles in a project setting; and	
(~~J~~I)	demonstrate effective oral and written communication skills with individuals from varied cultures.	
(2)	The student knows the functions and applications of the tools, equipment, technologies, and materials used in energy, power, ~~and~~ of transportation systems. The student is expected to:	
(A)	discuss the safe use of hand and power tools and equipment commonly used in the maintenance and repair of engines; and	
(B)	discuss the use of audits and inspections to maintain compliance with safety, health, and environmental regulations.	
(3)	The student applies technical knowledge and skills to simulated situations. The student is expected to:	
(A)	identify the major components in a vehicular system;	
(B)	identify necessary maintenance and service of vehicle systems; and	
(C)	discuss preventative maintenance plans and systems to keep vehicular systems in operation.	
(4)	The student describes the historical, current, and future significance of the energy, power, ~~and~~ of transportation systems. The student is expected to:	
(A)	identify the scope and effect upon society of the energy, power ~~and~~ of transportation systems; and	
(B)	identify potential future scenarios for the energy, power ~~and~~ of transportation systems.	
(5)	The student uses academic skills to document the requirements of energy, power, ~~and~~ of transportation systems. The student is expected to:	
(A)	demonstrate communication skills in relation to customers, technicians, and others;	
(B)	prepare documentation such as quotes, invoices, bills of laden, work orders, and other reports;	

(C)	read and interpret appropriate documents such as schematics, charts, diagrams, graphs, parts catalogs, and service-repair manuals and bulletins;	
(D)	perform precision measurements to diagnose component shape and alignment, based on industry specifications, and determine necessary repair;	
(E)	use critical-thinking skills and structured problem-solving skills to diagnose vehicular system malfunctions, solve problems, and make decisions; and	
(F)	demonstrate knowledge of regulations that govern the construction, maintenance, and service of energy, power ~~and~~ of transportation systems.	

§130.402. Management of **Transportation Systems** ~~Management~~ **(One** ~~to Two~~ **Credit**~~s~~**).**		
	TEKS with edits	Committee Comments
(a)	**General requirements**. This course is recommended for students in Grades ~~9~~10-12 Recommended Pre-requisite: Principles of Transportation Systems.	This has a recommended prerequisite course.
(b)	**Introduction**.	
(1)	CTE instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.	
(2)	~~Transportation, Distribution, and Logistics Cluster~~ ~~Planning, management, and movement of people, materials, and goods by road, pipeline, air, rail and water and related professional support services such as transportation infrastructure planning and management, logistics services, mobile equipment and facility maintenance.~~ 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 and related professional support services such as transportation infrastructure planning and management, logistics services, mobile equipment and facility maintenance.	Added per TEA instruction
(3)	In Transportation Systems Management, students gain knowledge and skills in material handling and distribution and proper application, design, and production of technology as it relates to the transportation ~~distribution, and logistics~~ industries. This course includes the safe operation of tractor-trailers, fork lifts, and related heavy equipment. The course allows students to reinforce, apply, and transfer their academic knowledge and skills to management of transportation systems and associate careers. ~~a variety of interesting and relevant activities, problems, and settings.~~	
(4)	Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other leadership or extracurricular organizations.	Added per TEA Instruction
(5)	Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.	
(c)	**Knowledge and skills**.	
(1)	The student demonstrates professional standards/employability skills as related by business and industry. The student is expected to:	
(~~1~~2)	The student demonstrates an understanding of the transportation systems. The student is expected to	
(A)	explain the history and development of the United States transportation systems such as railroads, highways, airports, water systems, and the use of intermodal vans;	
(B)	examine logistic systems used for the transportation of products and services;	

(C)	define practices and terms commonly used in international sales contracts as published by the International Chamber of Commerce;	
(D)	summarize laws and regulations concerning interstate and international trade;	
(E)	explain the role of homeland security in interstate and international trade;	
(F)	evaluate risk factors and social and economic trends such as risk mitigation, policy change issues, security issues, and cultural factors;	
(G)	evaluate documentation and other requirements for interstate and international transportation and logistics;	
(H)	describe transportation issues such as internal processing, product and supply storage, forecasting, scheduling, cost analysis, documentation confirmation, packing lists, Materials Safety Data Sheets, product seals, packaging types, packaging labels, and routing issues;	
(I)	identify employer's expectations, appropriate work habits, ethical conduct, legal responsibilities, and good citizenship skills; and	
(J)	demonstrate computer skills related to transportation and materials handling.	
~~(2)~~(3)	The student demonstrates an understanding of Department of Transportation, Environmental Protection Agency, and Occupational Safety and Health Administration hazardous materials regulation knowledge and skills. The student is expected to:	
(A)	discuss the Department of Transportation, including procedures or policies, material designations, packaging requirements, and operational rules;	
(B)	explain Department of Transportation, Environmental Protection Agency, and Occupational Safety and Health Administration compliance requirements concerning hazardous materials, hazardous waste operations, medical surveillance, personnel training, adequate ventilation, confined space hazards, and emergency preparedness and response;	
(C)	examine personal protective equipment;	
(D)	compare specifications for accident prevention signs and tags, retention of Department of Transportation markings, and placards and labels for toxic and hazardous materials;	
(E)	research handling and storage requirements for liquid fuels, liquid petroleum gas, carbon monoxide, and toxic and hazardous substances;	
(F)	examine emergency action plans, employee training requirements, evacuation procedure requirements, and facility and equipment safety standards;	
(G)	explain fire prevention, including portable fire extinguishers, fire management systems, employee alarm systems and hazard communication; and	
(H)	examine fire prevention plans and documentation.	

~~(3)~~(4)	The student demonstrates an understanding of tractor-trailer knowledge and skills. The student is expected to:	
(A)	read and interpret control systems;	
(B)	perform vehicle inspections and maintenance such as checking vehicle systems and components, diagnosing potential problems, and developing malfunction reports and maintenance schedules and reports;	
(C)	perform visual search and inspection of a tractor-trailer;	
(D)	demonstrate controls of a tractor-trailer such as shifting, backing, docking, coupling and uncoupling, adjusting vehicle speed, and conducting break-down procedures;	
(E)	explain the management and adjustment of vehicle speed and space relations;	
(F)	identify potential driving hazards and environmental conditions;	
(G)	examine emergency maneuvers, procedures, and accident reports; and	
(H)	discuss appropriate decision-making procedures for planning trips.	
~~(4)~~(5)	The student demonstrates an understanding of forklift knowledge and skills. The student is expected to:	
(A)	explain Occupational Safety and Health Administration safety standards for forklifts, including equipment operation, battery maintenance, liquid propane tanks, lift truck stability, load weight limits, seat belt requirements, overhead guards, tip over prevention, and ride-out procedures;	
(B)	perform visual inspection of forklifts and their operating environment;	
(C)	discuss start-up, shut-down, and proper traveling procedures;	
(D)	perform maintenance inspections and documentation procedures;	
(E)	discuss forklift attachments; and	
(F)	evaluate proper lifting, carrying, load stability, and stacking procedures for loading trailers, boxcars, and containers.	
~~(5)~~(6)	The student demonstrates an understanding of heavy equipment knowledge and skills. The student is expected to:	
(A)	explain safety issues pertaining to heavy equipment operation;	
(B)	discuss principles and maintenance of heavy equipment, including cooling systems, fuel systems, lubrication systems, electrical systems, air systems, power systems, braking systems, pneumatic systems, hydraulic systems, operator ergonomics systems, tires, tracks, and track frames;	

(C)	~~examine~~ observe the operation of heavy equipment such as bull dozers, crawler tractors, backhoes, excavators, track hoes, graders, scrapers, skid steer loaders, mini excavators, dump trucks, trenchers, cranes, hoists, soil compactors, land planes, landscaping equipment, and quarry equipment;	
(D)	discuss safely transporting heavy equipment; and	
(E)	discuss equipment theft prevention procedures.	

§130.404. Practicum in Transportation Systems~~, Distribution, and Logistics~~ (2 to 3 credits).		
	TEKS with edits	Committee Comments
(a)	**General requirements.** This course is recommended for students in Grades 11-12. The practicum course is a paid or unpaid capstone experience for students participating in a coherent sequence of courses in the Transportation~~, Distribution, and Logistics cluster~~. (1) A student shall be awarded two credits for successful completion of this course, when the student participates in at least an average of 10 hours, but less than 15 hours, per week of a paid or unpaid, laboratory- or work-based application of previously studied knowledge and skills related to the Transportation Career Cluster. (2) A student shall be awarded three credits for successful completion of this course, when the student participates in an average of 15 hours per week of a paid or unpaid, laboratory- or work-based application of previously studied knowledge and skills related to the Transportation Career Cluster.	
(b)	**Introduction.**	
(1)	CTE instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.	
(2)	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 and related professional support services such as transportation infrastructure planning and management, logistics services, mobile equipment and facility maintenance.	
(3)	The Practicum is designed to give students supervised practical application of knowledge and skills. Practicum experiences can occur in a variety of locations appropriate to the nature and level of experience such as internships, mentorships, independent study, or laboratories. The Practicum can be either school lab based or worked based.	
(4)	Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other leadership or extracurricular organizations.	
(5)	Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.	
(c)	**Knowledge and skills.**	
(1)	The student demonstrates professional standards/employability skills as related by business and industry.	
(2)	The student professional standards as required by business and industry. The student is expected to	

(A)	adhere to policies and procedures;	
(B)	demonstrate positive work behaviors and attitudes, including punctuality, time management, initiative, and cooperation;	
(C)	accept constructive criticism;	
(D)	apply ethical reasoning to a variety of situations in order to make ethical decisions;	
(E)	complete tasks with the highest standards to ensure quality products and services;	
(F)	model professional appearance, including dress, grooming, and personal protective equipment as appropriate; and	
(G)	comply with practicum setting safety rules and regulations to maintain safe and healthful working conditions and environments.	
(2)	The student applies concepts of critical thinking and problem solving. The student is expected to:	
(A)	analyze elements of a problem to develop creative and innovative solutions;	
(B)	critically analyze information to determine value to the problem-solving task;	
(C)	compare and contrast alternatives using a variety of problem-solving and critical-thinking skills; and	
(D)	conduct technical research to gather information necessary for decision making.	
(3)	The student demonstrates leadership and teamwork skills in collaborating with others to accomplish goals and objectives. The student is expected to:	
(A)	analyze leadership in relation to trust, positive attitude, integrity, and willingness to accept key responsibilities in a work situation;	
(B)	demonstrate teamwork skills through working cooperatively with others to achieve tasks;	
(C)	demonstrate teamwork processes that promote team building, consensus, continuous improvement, respect for the opinions of others, cooperation, adaptability, and conflict resolution;	
(D)	demonstrate responsibility for shared group and individual work tasks;	
(E)	establish and maintain effective working relationships in order to accomplish objectives and tasks;	
(F)	demonstrate effective working relationships using interpersonal skills;	
(G)	use positive interpersonal skills to work cooperatively with others;	
(H)	negotiate effectively to arrive at decisions;	
(I)	demonstrate respect for individuals, including those from different cultures, genders, and backgrounds; and	
(J)	demonstrate sensitivity to and value for diversity.	

(4)	The student demonstrates oral and written communication skills in creating, expressing, and interpreting information and ideas, including technical terminology and information. The student is expected to:	
(A)	demonstrate the use of content, technical concepts, and vocabulary when analyzing information and following directions;	
(B)	employ verbal skills when obtaining and conveying information;	
(C)	use informational texts, Internet websites, and technical materials to review and apply information sources for occupational tasks;	
(D)	evaluate the reliability of information from informational texts, Internet websites, and technical materials and resources;	
(E)	interpret verbal and nonverbal cues or behaviors to enhance communication;	
(F)	apply active listening skills to obtain and clarify information; and	
(G)	use academic skills to facilitate effective written and oral communication.	
(5)	The student demonstrates technical knowledge and skills required to pursue a career in the Transportation Systems, ~~Distribution, and Logistics cluster~~. The student is expected to:	
(A)	develop advanced technical knowledge and skills related to the student's personal career goals;	
(B)	evaluate technical skill proficiencies; and	
(C)	accept critical feedback provided by the supervisor.	
(6)	The student documents technical knowledge and skills. The student is expected to:	
(A)	update a professional portfolio to include:	
(i)	attainment of technical skill competencies, licensures or certifications, recognitions, awards, and scholarships;	
(ii)	extended learning experiences such as community service and active participation in career and technical student organizations and professional organizations;	
(iii)	abstract of technical competencies mastered during the practicum;	
(iv)	resumé;	
(v)	samples of work; and	
(vi)	evaluation from the practicum supervisor; and	
(B)	present the portfolio to all interested stakeholders such as in a poster presentation.	

§130.392.b Principles of ~~Transportation,~~ Distribution, and Logistics (One Credit).		
TEKS with edits		Committee Comments
(a)	**General requirements**. This course is recommended for students in Grades 9-12.	
(b)	**Introduction.**	
(1)	CTE instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.	
(2)	~~Transportation, Distribution, and Logistics Cluster~~ ~~Planning, management, and movement of people, materials, and goods by road, pipeline, air, rail and water and related professional support services such as transportation infrastructure planning and management, logistics services, mobile equipment and facility maintenance.~~ 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 and related professional support services such as transportation infrastructure planning and management, logistics services, mobile equipment and facility maintenance.	
(3)	In Principles of ~~Transportation,~~ Distribution and Logistics students 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 logistics of warehousing and transportation systems. Students should apply knowledge and skills in the application, design, and production of technology as it relates to ~~the transportation~~ distribution and logistics 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.	
(4)	Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other leadership or extracurricular organizations.	
(5)	Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.	
(c)	**Knowledge and skills**.	
(1)	~~The student explores the employability characteristics for success.~~ The student demonstrates professional standards/employability skills as related by business and industry. The student is expected to:	
(A)	identify career development and entrepreneurship opportunities in ~~transportation~~ distribution and logistics such as how to search for and obtain employment, the qualifications that are required for varying career fields, and how to advance in a position;	
(B)	identify careers in ~~transportation,~~ distribution, and logistics systems;	

(C)	apply competencies related to resources, information, interpersonal skills, problem solving, critical thinking, and systems of operation in ~~transportation~~, distribution, and logistics;	
(D)	discuss certification opportunities;	
(E)	demonstrate knowledge of personal and occupational health and safety;	
(F)	discuss response plans to emergency situations;	
(G)	identify employers' expectations, appropriate work habits, ethical conduct, legal responsibilities, and good citizenship skills; and	
(H)	explore career goals, objectives, and strategies as part of a plan for future career opportunities.	
(2)	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;	
(B)	apply proper record-keeping skills as they relate to industry-based occupational experiences;	
(C)	use a customized record-keeping system for the individual industry-based occupational experiences;	
(D)	discuss youth leadership opportunities to create a well-rounded industry-based occupational experience; and	
(E)	develop a work plan and budget.	
(3)	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; and	
(C)	describe marketing factors and practices that impact other cultures.	
(4)	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~~, distribution, and logistics industries;	
(B)	identify the scope and effect upon society of the ~~transportation,~~ distribution, and logistics industries;	
(C)	identify significant historical and current developments in the ~~transportation~~, distribution, and logistics industries;	
(D)	identify potential future scenarios for the ~~transportation~~, distribution, and logistics industry systems;	

(E)	describe how emerging technologies and globalization impact the ~~transportation~~, distribution, and logistics industries; and	
(F)	compare and contrast issues affecting the ~~transportation~~, distribution, and logistics industries such as international trade, employment, safety, and environmental issues.	
(5)	The student analyzes the structure of ~~transportatio~~n, distribution, and logistics 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.	
(6)	The student explains the ~~transportation~~, distribution, and logistics industries at the local, state, national, and international levels. The student is expected to:	
(A)	identify reasons for world trade and globalization;	
(B)	identify the political impact of ~~transportation,~~ distribution, and logistics;	
(C)	review regulations and major laws to evaluate their impact on ~~transportation~~, distribution, and logistics;	
(D)	read appropriate written material to stay abreast of current issues impacting ~~transportation~~, distribution, and logistics;	
(E)	collect public opinion and data in order to make informed decisions;	
(F)	use critical-thinking skills to identify and organize alternatives and evaluate public policy issues related to ~~transportation~~, distribution, and logistics; and	
(G)	evaluate performance and contract compliance of contractors and service providers.	
(7)	The student demonstrates appropriate personal 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;	
(D)	practice written and oral communication skills in formal and informal situations;	

(E)	practice effective listening 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	
(H)	demonstrate speaking skills.	
(8)	The student applies appropriate research methods for ~~transportation,~~ distribution, and logistics systems. The student is expected to:	
(A)	define major fields of research and development;	
(B)	identify and apply scientific methods of research in ~~transportation,~~ distribution, and logistics industries;	
(C)	use a variety of resources for research and development; and	
(D)	describe the scientific methods of research.	
(9)	The student applies problem-solving, mathematical, and organizational skills in order to maintain financial and logistical records. The student is expected to:	
(A)	discuss project proposals;	
(B)	maintain records appropriate to ~~transportation~~, distribution, and logistics 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.	
(10)	The student uses information technology tools specific to ~~transportation~~, distribution, and logistics industries to access, manage, integrate, and create information. The student is expected to:	
(A)	use management software, email applications, and Internet applications;	
(B)	demonstrate word-processing, database, spreadsheet, and presentation software;	
(C)	examine collaborative, groupware, and virtual meeting software;	
(D)	discuss Geographic Information Systems and Global Positioning Systems; and	
(E)	discuss other computer-based equipment in ~~transportation~~, distribution, and logistics systems.	
(11)	The student discusses methods to reduce sources of 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 the ~~transportation,~~ distribution, and logistics environments;	

(C)	demonstrate first aid and cardiopulmonary resuscitation procedures; and	
(D)	demonstrate proper use of safety equipment.	
(12)	The student examines material handling in warehouses and distribution centers. The student is expected to:	
(A)	discuss handling practices for goods and materials;	
(B)	explain size, weight, and shape requirements for packaging;	
(C)	discuss material handling, storage, and shipping methods;	
(D)	analyze visual design and appearance requirements for packages;	
(E)	discuss layout plans for processing packages;	
(F)	identify material handling and storage equipment; and	
(G)	identify types of warehouses and distribution centers.	

§130.403. Distribution and **Logistics**~~, Planning, and Management Systems~~ **(One** ~~to Two~~ **Credit**~~s~~**).**		
	TEKS with edits	Committee Comments
(a)	**General requirements**. This course is recommended for students in Grades 1~~0~~1-12. Recommended prerequisite: Principles of Distribution and Logistics	This course has a recommended prerequisite
(b)	**Introduction.** CTE instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.	
(1)	CTE instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.	
(2)	~~Transportation, Distribution, and Logistics Cluster~~ ~~Planning, management, and movement of people, materials, and goods by road, pipeline, air, rail and water and related professional support services such as transportation infrastructure planning and management, logistics services, mobile equipment and facility maintenance.~~ The Transportation, Distribution & Logistics Career Cluster focuses on planning, management, and movement of people, materials, and goods by road, pipeline, air, rail and water and related professional support services such as transportation infrastructure planning and management, logistics services, mobile equipment and facility maintenance.	Added per TEA instruction
(3)	This course is designed to provide training for entry-level employment in Distribution and Logistics~~, Planning, and Management Systems~~. This course focuses on the business planning and management aspects of ~~transportation,~~ distribution, and logistics. To prepare for success, students will learn, reinforce, experience, apply, and transfer their knowledge and skills and technologies ~~in a variety of settings~~ as it relates to distribution and logistics.	
(4)	Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other leadership or extracurricular organizations.	Added per TEA Instruction
(5)	Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.	
(c)	**Knowledge and skills**.	
(1)	~~The student explores the employability characteristics of a successful worker in the modern workplace. The student is expected to:~~ The student demonstrates professional standards/employability skills as related by business and industry. The student is expected to:	
(A)	identify career development and entrepreneurship opportunities in distribution and logistics, ~~planning, and management systems~~, including how to search for and obtain employment, what qualifications are required for varying career fields, and how to advance in a position;	

(B)	identify careers in distribution and logistics~~, planning, and management~~;	
(C)	apply competencies related to resources, information, interpersonal skills, problem solving, critical thinking, and systems of operation in distribution and logistics~~, planning, and management~~;	
(D)	prepare for certifications required to meet state academic standards and qualify for selected fields of study;	
(E)	demonstrate knowledge of personal and occupational safety, health, and first-aid policy in the workplace;	
(F)	develop response plans to emergency situations;	
(G)	identify employers' expectations, appropriate work habits, ethical conduct, legal responsibilities, and good citizenship skills; and	
(H)	develop personal career goals, objectives, and strategies as part of a plan for future career and educational opportunities.	
~~(2)~~	~~The student develops an occupational experience program as it relates to distribution and logistics, planning, and management systems. The student is expected to:~~	
~~(A)~~	~~plan, propose, conduct, and evaluate occupational experiences;~~	
~~(B)~~	~~apply proper record-keeping skills as they relate to occupational experiences;~~	
~~(C)~~	~~design and use a customized record-keeping system for the individual occupational experiences;~~	
~~(D)~~	~~participate in youth leadership opportunities to create a well-rounded occupational experience; and~~	
~~(E)~~	~~develop a work plan and budget.~~	
(~~3~~2)	The student identifies concepts related to cultural diversity. The student is expected to:	
(A)	identify significant similarities and differences in international cultures;	
(B)	explain the variety of world markets; and	
(C)	describe marketing factors and practices that impact other cultures.	
(~~4~~3)	The student describes the historical, current, and future significance of the distribution and logistics~~, planning, and management industries~~. The student is expected to:	
(A)	define terms associated with the distribution and logistics~~, planning, and management~~ industries;	
(B)	identify the scope of the distribution and logistics~~, planning, and management~~ industries and their effect on society;	
(C)	identify significant historical and current distribution and logistics~~, planning, and management~~ industries;	

(D)	identify potential future scenarios for the distribution and logistics~~, planning, and management~~ industries;	
(E)	describe how emerging technologies and globalization impacts the distribution and logistics~~, planning, and management~~ industries; and	
(F)	compare and contrast issues affecting the distribution and logistics~~, planning, and management~~ industries such as international trade, employment, safety, and environmental issues.	
~~(5)~~	~~The student analyzes the structure of distribution and logistics, planning, and management 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.~~	
(~~6~~4)	The student explains the distribution and logistics, ~~planning, and management~~ industries at local, state, national, and international levels. The student is expected to:	
(A)	identify reasons for world trade and globalization;	
(B)	identify the political impact of distribution and logistics~~, planning, and management;~~	
(C)	review regulations and major laws to evaluate their impact on the industry;	
(D)	read appropriate written material to stay abreast of current issues;	
~~(E)~~	~~collect public opinion and data in order to make informed decisions;~~	
~~(F)~~(E)	use critical-thinking skills to identify and organize alternatives and evaluate public policy issues; and	
~~(G)~~(F)	evaluate performance and contract compliance of contractors and service providers.	
(~~7~~5)	The student demonstrates appropriate personal and communication skills. The student is expected to:	
(A)	describe and apply workplace ethical and legal responsibilities;	
(B)	define the uses of proper etiquette and behavior;	
(C)	identify appropriate personal appearance and health habits;	
(D)	practice written and oral communication skills and employ effective listening skills;	
(E)	comprehend technical reading materials common to the distribution and logistics~~, planning, and management~~ industries;	

(F)	employ sound writing and preparation skills for prepared and extemporaneous oral presentations as well as presentation of technical information; and	
(G)	demonstrate speaking skills.	
(~~8~~6)	The student applies appropriate research methods for distribution and logistics~~, planning, and management~~ topics. The student is expected to:	
(A)	define major fields of research and development;	
(B)	demonstrate proficiency in using a variety of resources for both research and development; and	
(C)	describe the scientific method of research.	
(~~9~~7)	The student applies problem-solving, mathematical, and organizational skills to maintain financial and logistical records. The student is expected to:	
(A)	discuss project proposals;	
(B)	develop and maintain records;	
(C)	collect and organize data in graphs, tables, charts, and plots;	
(D)	analyze and interpret data from graphs, tables, charts, and plots;	
(E)	maintain appropriate financial records such as journals, inventories, income and expense logs, and financial statements and balance sheets; and	
(F)	conduct formative and summative reflective and financial analyses on project learning objectives and records in order to problem-solve for the future.	
G	review CDL preparation guidelines; and	
H	explain CDL guidelines in preparation for testing.	
(~~10~~8)	The student uses information technology tools to access, manage, and create information. The student is expected to:	
(A)	use personal management software, email applications, and Internet applications;	
(B)	use word-processing, database, spreadsheet, and presentation software;	
(C)	use collaborative or virtual meeting software;	
(D)	use ~~or~~ and explain the benefits of Geographic Information Systems and Global Positioning Systems hardware and applications; and	
(E)	use computer-based equipment to manage human resources and physical assets ~~resources~~.	
(F)	use technology applications such as barcode systems as they pertain to identifying and tracking goods and shipments; and	

(G)	use mobile applications to track goods and means of transportation such as GPS systems for trucks, tracking shipments.	
(9~~11~~)	The student uses data to optimize distribution and logistics business operations such as storage, distribution routes, equipment and human resources. The student is expected to:	
(A)	use data to identify areas of operation which need improvement and optimization of business operations;	
(B)	identify alternative processes and procedures to improve and optimize business operations; and	
(C)	Make data-based decisions on optimizing storage space, distribution routes.	
(~~12~~ 10)	The student assesses and implements methods to reduce sources of workplace hazards common in the industry in order to promote a safe and accident-free working environment. The student is expected to:	
(A)	identify, assess, and control hazards to maintain safe and healthful working conditions;	
(B)	state the role and summarize the benefits of each component in a health, safety, and environmental management system;	
(C)	demonstrate emergency procedures to reduce and mitigate workplace accidents;	
(D)	perform tool, equipment, facility, and personal protective equipment audits and inspections;	
(E)	identify rules and laws designed to promote safety and health in the workplace; and	
(F)	demonstrate knowledge of first aid and cardiopulmonary resuscitation procedures and proper use of safety equipment.	
(~~13~~11)	The student examines the planning, preparation, processing, handling, and storing of goods and materials in warehouses and distribution centers. The student is expected to:	
(A)	determine risks or damage from normal rigors such as compression, shock, drop, moisture, corrosion, vibration, temperature, and motion during transportation and handling;	
(B)	discuss the transporting and handling of hazardous materials;	
(C)	explain size, weight, and shape requirements for packaging;	
(D)	discuss handling, storage, and shipping methods for various types of packaging and warehouse and shipping providers;	
(E)	assess requirements for various packaging types;	
(F)	analyze visual design and appearance requirements, including handling information, warnings, display requirements, and required documentation;	
(G)	create layout plans for processing incoming and outgoing, cross-docking, and storage of products;	
(H)	evaluate material handling and storage equipment;	

(I)	assess the processing of incoming goods and materials using standardized industry protocols and procedures; and	
(J)	examine equipment and staffing requirements and develop traffic management plans and work schedules.	
(~~14~~12)	The student reviews issues related to interstate and international trade. The student is expected to:	
(A)	define terms commonly used in sales contracts as published by the International Chamber of Commerce;	
(B)	summarize laws and regulations concerning interstate and international trade;	
(C)	explain the role of homeland security in interstate and international trade;	
(D)	evaluate risk factors and social and economic trends such as risk mitigation, policy change issues, security issues, and cultural changes;	
(E)	evaluate documentation and other requirements for interstate and international transportation and logistics; and	
(F)	describe transportation issues such as internal processing, product and supply storage, forecasting, scheduling, cost analysis, documentation confirmation, packing lists, Material Safety Data Sheets, product seals, packaging types, packaging labels, and routing issues.	

§130.404b. Practicum in ~~Transportation,~~ Distribution, and Logistics (2 to 3 credits).		
	TEKS with edits	Committee Comments
(a)	**General requirements**. This course is recommended for students in Grades 11-12. The practicum course is a paid or unpaid capstone experience for students participating in a coherent sequence of courses in the ~~Transportation,~~ Distribution~~,~~ and Logistics industry ~~cluster~~.	
(1)	A student shall be awarded two credits for successful completion of this course, when the student participates in at least an average of 10 hours, but less than 15 hours, per week of a paid or unpaid, laboratory- or work-based application of previously studied knowledge and skills related to the Transportation Career Cluster.	
(2)	A student shall be awarded three credits for successful completion of this course, when the student participates in an average of 15 hours per week of a paid or unpaid, laboratory- or work-based application of previously studied knowledge and skills related to the Transportation Career Cluster.	
(b)	**Introduction**.	
(1)	The Practicum is designed to give students supervised practical application of knowledge and skills. Practicum experiences can occur in a variety of locations appropriate to the nature and level of experience such as internships, mentorships, independent study, or laboratories. The Practicum can be either school lab based or work based.	
(2)	CTE instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.	
(3)	The Transportation, Distribution & Logistics Career Cluster focuses on planning, management, and movement of people, materials, and goods by road, pipeline, air, rail and water and related professional support services such as transportation infrastructure planning and management, logistics services, mobile equipment and facility maintenance.	
(4)	Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other leadership or extracurricular organizations.	
(5)	Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.	
(c)	**Knowledge and skills**.	
(1)	~~The student demonstrates professional standards as required by business and industry.~~ The student demonstrates professional standards/employability skills as related by business and industry. The student is expected to:	
(A)	adhere to policies and procedures;	
(B)	demonstrate positive work behaviors and attitudes, including punctuality, time management, initiative, and cooperation;	

(C)	accept constructive criticism;	
(D)	apply ethical reasoning to a variety of situations in order to make ethical decisions;	
(E)	complete tasks with the highest standards to ensure quality products and services;	
(F)	model professional appearance, including dress, grooming, and personal protective equipment as appropriate; and	
(G)	comply with practicum setting safety rules and regulations to maintain safe and healthful working conditions and environments.	
(2)	The student applies concepts of critical thinking and problem solving. The student is expected to:	
(A)	analyze elements of a problem to develop creative and innovative solutions;	
(B)	critically analyze information to determine value to the problem-solving task;	
(C)	compare and contrast alternatives using a variety of problem-solving and critical-thinking skills; and	
(D)	conduct technical research to gather information necessary for decision making.	
(3)	The student demonstrates leadership and teamwork skills in collaborating with others to accomplish goals and objectives. The student is expected to:	
(A)	analyze leadership in relation to trust, positive attitude, integrity, and willingness to accept key responsibilities in a work situation;	
(B)	demonstrate teamwork skills through working cooperatively with others to achieve tasks;	
(C)	demonstrate teamwork processes that promote team building, consensus, continuous improvement, respect for the opinions of others, cooperation, adaptability, and conflict resolution;	
(D)	demonstrate responsibility for shared group and individual work tasks;	
(E)	establish and maintain effective working relationships in order to accomplish objectives and tasks;	
(F)	demonstrate effective working relationships using interpersonal skills;	
(G)	use positive interpersonal skills to work cooperatively with others;	
(H)	negotiate effectively to arrive at decisions;	
(I)	demonstrate respect for individuals, including those from different cultures, genders, and backgrounds; and	
(J)	demonstrate sensitivity to and value for diversity.	
(4)	The student demonstrates oral and written communication skills in creating, expressing, and interpreting information and ideas, including technical terminology and information. The student is expected to:	

(A)	demonstrate the use of content, technical concepts, and vocabulary when analyzing information and following directions;	
(B)	employ verbal skills when obtaining and conveying information;	
(C)	use informational texts, Internet websites, and technical materials to review and apply information sources for occupational tasks;	
(D)	evaluate the reliability of information from informational texts, Internet websites, and technical materials and resources;	
(E)	interpret verbal and nonverbal cues or behaviors to enhance communication;	
(F)	apply active listening skills to obtain and clarify information; and	
(G)	use academic skills to facilitate effective written and oral communication.	
(5)	The student demonstrates technical knowledge and skills required to pursue a career in the ~~Transportation,~~ Distribution, and Logistics ~~cluster~~ industry. The student is expected to:	
(A)	develop advanced technical knowledge and skills related to the student's personal career goals;	
(B)	evaluate technical skill proficiencies; and	
(C)	accept critical feedback provided by the supervisor.	
(6)	The student documents technical knowledge and skills. The student is expected to:	
(A)	update a professional portfolio to include:	
(i)	attainment of technical skill competencies, licensures or certifications, recognitions, awards, and scholarships;	
(ii)	extended learning experiences such as community service and active participation in career and technical student organizations and professional organizations;	
(iii)	abstract of technical competencies mastered during the practicum;	
(iv)	resumé;	
(v)	samples of work; and	
(vi)	evaluation from the practicum supervisor; and	
(B)	present the portfolio to all interested stakeholders such as in a poster presentation.	