CareerClusters™ PATHWAYS TO COLLEGE & CAREER READINESS
Transportation, Distribution & Logistics

Learning that works for Colorado CTE®

Colorado CTE Course – Scope and Sequence

Course Name	Vehicle Systems	Course Details	Credit= 1.0-2.0
		Course = 0.50 Carnegie Unit Credit	Prerequisite: Automotive Technology III CTE Credential: CTE Transportation
Course Description	This course applies the knowledge learned from the Automotive Technology I-III classes and expands to more in-depth training and advanced techniques including: brakes, vehicle suspension and steering systems, including vehicle wheel alignment, advanced wheel and tire concepts, system diagnostic analysis, vehicle emissions systems, and dynamometer testing, and manufacturer specific electrical systems. Emphasis will be placed on career exploration throughout the industry and students will complete tasks preparing them to successfully pass ASE exams. Additionally, students are provided multiple opportunities to explore and pursue post-secondary education in the automotive technology industry and NATEF areas. Students will also be introduced to several post-secondary training opportunities in order to further their career in this industry. This class is designed to meet the course requirements for a secondary education NATEF certified program. These courses prepare students for entry-level positions in the four areas taught within the curriculum (electrical and electronics, brakes, suspension and steering, and engine performance).		
Note:	This is a suggested scope and sequence for the course content. The content will work with any textbook or instructional resource. If locally adapted, make sure all essential knowledge and skills are covered.		
SCED Identification #	20105	Schedule calculation based on 60 calendar days of a 90-day semester. Scope and sequence allows for additional time for guest speakers, student presentations, field trips, remediation, or other content topics.	

All courses taught in an approved CTE program must include Essential Skills embedded into the course content. The Essential Skills Framework for this course can be found at https://www.cde.state.co.us/standardsandinstruction/essentialskills

Instructional Unit Topic	Suggested Length of Instruction	CTE or Academic Standard Alignment	Competency / Performance Indicator	Outcome / Measurement	CTSO Integration
Safety		Understand personal safety and environmental practices in accordance with OSHA safety regulations. Identify employers' expectations regarding	Understand and identify work standards for the Automotive Industry. Student is expected to: A) Identify procedures to ensure compliance with personal and	Student demonstrates safe employment shop practices: • Identifies general shop safety rules and procedures.	

		safe and appropriate work habits, ethical conduct, and environmental responsibilities in the fields of automotive service. Understand and identify work standards for the Automotive Industry.	environmental safety practices associated with clothing; respiratory protection; eye protection; hand tools; power equipment; proper ventilation; and the handling, storage, and disposal of chemicals/materials in accordance with local, state, and federal safety and environmental practices; B) Identify major structural and non-structural components, sections, and assemblies of various types of vehicles; C) Interpret Vehicle Identification Number (VIN) plate; D) Identify common hand tools used in the automotive service industry; E) Identify various pneumatic, electric and hydraulic tools and equipment used in the automotive service industry; F) List various job titles and identify specific	• Utilizes safe procedures for handling of tools and equipment. • Utilizes proper ventilation procedures for working within the lab/shop area. Demonstrate appropriate industry working practices for verification of VIN numbers and use of standard documentation and repair tools, equipment, and processes. Demonstrate understanding of industry certification requirements and how those are used locally for employment hiring and advancement.	

			areas of employment within the automotive industry, and describe the working environment; G) Determine the demand for entry-level technicians, and list skills employers expect of entry-level technicians and H) Determine the amount of training and education necessary to enter into the automotive service industry, and the requirements for becoming manufacture certified.		
Advanced Topics in Automotive Service and Repair		Develop advanced technical skills in automotive repair and service.	Develop advanced technical skills in automotive repair and service. Student is expected to: (A) Demonstrate technical skill proficiency in the following areas: i. Engine Repair ii. Automatic Transmission/Transaxle iii. Suspension and Steering iv. Brakes v. Electrical/Electronic Systems	Demonstrations will vary by topic area. Refer to the NATEF task list for specific tasks.	

			vi. Heating and Air Conditioning vii. Engine Performance viii. Light Vehicle Diesel Engines		