CENTRAL UNION HIGH SCHOOL DISTRICT

COURSE OUTLINE

Course Title: Maintenance Light Duty Repair I (First Year)
Phase 2 Advanced Level

Grade Level: 11-12

Requirements: This class fulfills The Applied Art Requirement and may serve the Students needs for elective credit.

Course Numbers: Reg 2712

I: Course Description: In this course students will be able to perform light duty repair on vehicles engine, heating and air conditioning, electrical system, and brakes. It is designed for entry level Automotive technicians, and is NATEF certified.

Prerequisites: None

Instructional Materials: Text book; Automotive Technology A Systems Approach(Erjavek, 4th) Instructor generated handouts, Original Equipment Manufacturer Service information (ESI), Automotive Youth Education Systems Curriculum, Automotive drive-train components, Live vehicles.

1. Automotive: Suspension and Steering Systems(A4)

First Quarter Key Standards: CTE

C1.1 Know and understand common environmental conservation practices and their applications.

C1.2 Practice the safe handling and storage of chemicals and hazardous wastes in accordance with material safety data sheets and the requirements of local, state, and federal regulatory agencies.

C1.3 Understand the way in which waste gasses, emissions, and other environmentally destructive substances are generated and their effects on the environment.

C1.4 Evaluate the advantages and disadvantages of existing, new, and emerging
systems and the effects of those systems on the environment.

C1.5 Use appropriate personal protective equipment and safety practices

C2.0 Students understand the safe and appropriate use of tools, equipment, and work processes:

C2.1 Understand and use appropriate tools and equipment, such as wrenches, sockets, and pliers, to maintain and repair systems and components.

C2.2 Use tools, equipment, and machines to safely measure, test, diagnose, and analyze components and systems (e.g., electrical and electronic circuits, alternating-and direct-current applications, fluid/hydraulic and air/pneumatic systems).

C2.3 Select and use the appropriate measurement device(s) and use mathematical functions necessary to perform required fabrication, maintenance, and operation procedures.

C2.4 Know and understand the elements of precision measuring using standard and metric system

C2.5 Use measurement scales, devices, and systems, such as dial indicators, and micrometers to design, fabricate, diagnose, maintain, and repair vehicles and components following appropriate industry standards.

C2.6 Know and understand how to access technical reports, manuals, electronic retrieval systems, and related technical data resources.

C2.7 Comprehend the importance of calibration processes, systems, and techniques using various measurement and testing devices.

C4.0 Students perform and document maintenance procedures in accordance with the recommendations of the manufacturer:

C4.1 Understand the procedures and practices of various manufacturers regarding repair and maintenance schedules.

C4.2 Know how to properly document maintenance procedures in accordance with applicable rules, laws, and regulations (e.g., Bureau of Auto Repair [BAR], Occupational Health and Safety Administration [OSHA], and the California Air Resources Board [CARB]).

C4.3 Use reference books, technical service bulletins, and other documents and

materials related to the automotive service industry available in print and through electronic retrieval systems to accurately diagnose and repair vehicles.

C4.4 Complete a work order, including customer information, description of repairs, and billing information, in accordance with applicable rules, laws, and regulations.

C5.0 Students understand and apply appropriate business practices:

C5.1 Understand work-related systems common to the transportation service industry.

C5.2 Know the laws and regulations applicable to recordkeeping and the appropriate handling and disposal of hazardous materials.

C5.3 Understand the importance of and the procedures for maintaining accurate records (e.g., business licenses, repair orders, billing and tax records).

C5.4 Understand the concept and application of accepted ethical business practices.

C5.5 Understand the concept and application of acceptable customer relations practices.

C5.6 Understand the need for maintenance of components and systems and the

Second Quarter Key Standards:

C8.0 Students understand the function and principles of automotive drive-train, steering and suspension, brake, and tire and wheel components and systems in accordance with portable national industry standards, such as the National Automotive Technicians Education Foundation.

C8.5 Understand tire and rim sizing to select appropriate wheels and tires for vehicles.

ASE/NATEF : Engine Repair(A1), Engine Performance(A8), Heating and Air Conditioning (A7), Electrical /Electronics(A6), Brake/Brake Repair(A5)

2. Scope and Sequence for [Course Title]

First Year: Students will receive 270 hours of instruction in Engine Repair, Engine Performance, Heating and Air Conditioning, Electrical/Electronics, and Brake repair

3. Description of Benchmark Assessments

First Quarter: **Safety/Safe Practices Test. 100%**
Tool Usage and measurement Test. 76%
General Vehicle information Assessment. 76%

Second Quarter: **Assessment on: General Lubrication. 5%**
Engine maintenance 5%
Performance maintenance 5%
Brake system maintenance 5%
Electronic maintenance 5%
Tire and Wheel Diagnosis and Repair 5%
95% Priory 1 tasks 20%
80% Priority 2 tasks 20%
50% Priority 3 tasks 20%
PDP's (skills use) 10%