

SLO Presentation

AUTO

Date: 09-15-2022

ISLO

Civic Engagement

- Students will develop values and beliefs in their role as a member of local, national and global societies to promote truth, fairness and goodwill to others. They will use the democratic process to further their values and beliefs and recognize and accept differing perspectives based on cultural diversity. They will engage in actions which provide service to others and have a positive impact on their local community.

Communication and Expression

- Students will demonstrate the ability to effectively and appropriately communicate their thoughts and ideas both in written and oral forms. They will develop verbal and non-verbal delivery skills, in an appropriate manner, to communicate their ideas as well as evaluate the ideas of others in a wide variety of contexts.

Critical Thinking and Quantitative Reasoning

- Students will demonstrate the ability to recognize assumptions within an argument and actively and skillfully analyze underlying reasoning to develop a conclusion. They will apply qualitative and/or quantitative analysis to solve problems, predict outcomes, test hypotheses, and explore alternatives in an ethical manner.

Information Literacy

- Students will demonstrate the ability to determine when gathering additional information is necessary. They will use appropriate resources and technologies to locate, evaluate and incorporate the information when developing supporting arguments and drawing conclusions. Students will also develop the ability to understand any legal, ethical or social issues regarding the use of information.

Personal Knowledge and Responsibility

- Students will develop the necessary skills to define, maintain and complete their personal educational goals. They will learn to work independently to accomplish personal goals toward realizing their full potential academically, physically and emotionally whether for personal enrichment, further education or career advancement.

Technology
AUTO
Alternative Fuels Service Technician--Cert <ul style="list-style-type: none">• Correlate energy resources with transportation and infrastructures.• Distinguish between AC and DC voltage, primary and secondary ignition, and data bus communication systems.• Employ appropriate safety practices while conducting automotive service.• Explain the advantages and disadvantages of various alternative fuels.• Identify the electrical hazards for servicing electrically powered vehicles.• Use wiring diagrams to assist in electrical diagnosis.
Alternative Fuels Service Technician--Degree <ul style="list-style-type: none">• Explain the advantages and disadvantages of various alternative fuels.• Correlate energy resources with transportation and infrastructures.• Distinguish between AC and DC voltage, primary and secondary ignition, and data bus communication systems.• Employ appropriate safety practices while conducting automotive service.• Identify the electrical hazards for servicing electrically powered vehicles.• Use wiring diagrams to assist in electrical diagnosis.
Automotive Heavy Line and Chassis Technician <ul style="list-style-type: none">• Demonstrate safe practices when working on all types of vehicles.• Demonstrate how to find repair procedures using service information.• Analyze service information in order to diagnose and repair vehicle faults.• Demonstrate appropriate diagnostic skills for automotive braking, suspension, and steering systems.• Use appropriate tools to disassemble, inspect, and reassemble engines.

- Gain work experience in the field.

Automotive Management--Cert

- Students employ appropriate safety practices while conducting automotive service.
- Students employ effective automotive communication skills.
- Students examine automotive organizational management.
- Students recognize appropriate automotive marketing strategies.
- Students develop a retail automotive follow-up system.
- Students explain BAR "Write It Right" regulations.

Automotive Management--Degree

- Students develop a retail automotive follow-up system.
- Students employ appropriate safety practices while conducting automotive service.
- Students employ effective automotive communication skills.
- Students examine automotive organizational management.
- Students explain BAR "Write It Right" regulations.
- Students recognize appropriate automotive marketing strategies.

Drivetrain & HVAC Technician

- Demonstrate safe practices when working on all types of vehicles.
- Demonstrate how to find repair procedures using service information.
- Analyze service information in order to diagnose and repair vehicle faults.
- Perform manual transmission/transaxle diagnosis and repair.
- Perform drive axle diagnosis and repair.
- Perform four-wheel drive/all-wheel drive component diagnosis and repair.
- Perform automatic transmission/transaxle diagnosis and repair.
- Demonstrate how to perform a HVAC performance test.
- Diagnose HVAC concerns related to air delivery and compressor controls.
- Gain experience working in the field.

Electrical & Drivability Technician

- Demonstrate safe practices when working on all types of vehicles.
- Demonstrate how to find repair procedures using service information.
- Analyze service information in order to diagnose and repair vehicle faults.
- Perform general electrical/electronics diagnosis and repair.
- Use wiring diagrams to assist in electrical and engine performance diagnosis.
- Demonstrate how to check diagnostic trouble codes (DTCs) and interpret data.
- Practice repairing faults related to engine performance.
- Gain experience working in the field.

Electrical/Diagnosis Technician--Cert

- Student recognize the 1997 Standards for California Smog Technician Exam.
- Students conduct the AC performance test on expansion valve and orphus tube systems.
- Students distinguish between AC and DC voltage, primary and secondary ignition, and data bus communication systems.
- Students distinguish between electronic engine control fuel system and emission control components.
- Students employ appropriate safety practices while conducting automotive service.
- Students use proper engine diagnosis and service techniques.

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- Student recognize the 1997 Standards for California Smog Technician Exam.
- Students conduct the AC performance test on expansion valve and orphus tube systems.
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- Students distinguish between electronic engine control fuel system and emission control components.
- Students employ appropriate safety practices while conducting automotive service.
- Students use proper engine diagnosis and service techniques.

Engine/Machining Technology--Cert

- Students identify properly appropriate machining procedure for engine reconditioning.
- Students identify the primary engine performance enhancing techniques.
- Students use proper engine diagnosis and service techniques.
- Students employ appropriate safety practices while conducting engine machining procedures.

Engine/Machining Technology--Degree

- Students employ appropriate safety practices while conducting engine/machining procedures.
- Students identify properly appropriate machining procedure for engine reconditioning.
- Students identify the primary engine performance enhancing techniques.
- Students use proper engine diagnosis and service techniques.

Entry Level Quick Service Technician

- Students perform a thorough automobile safety inspection.
- Students perform basic preventative maintenance on an automobile.
- Students describe suspension system components and operation.
- Students identify electronic suspension component operation and service.
- Students describe braking system components and operation.
- Demonstrate proper use of proper diagnostic tools.

Essential Level Service Technician

- Students will demonstrate proper safety precautions in using tools and equipment.
- Students will compare different measurements mean in both U.S. and metric measurement systems.
- Students will identify and describe different cylinders and valve arrangements.
- Students identify the components of an A/C system.
- Students explain the A/C leak testing procedure.
- Students identify all fuel system components and their relationship to one another.
- Students will operate the scan-tool to identify D.T.C. (Diagnostic Trouble Codes).
- The student will identify the emission control systems components on the vehicle.
- Students identify the symbols used in an electrical diagram.
- Students demonstrate the use of the digital multi-meter
- Students identify electrical/electronic components.

Fleet Technician

- Students use the appropriate personal protective equipment
- Students identify the proper thread repair tool to repair damaged threads
- Students can identify the common automotive hand tools
- Students describe hydraulic system components and operation.
- Students demonstrate hydraulic system diagnostic and service.

- Students practice disk brake diagnostic and service.
- Students demonstrate air brake diagnostic and service.
- Students practice power brake service diagnosis and service.
- Students describe operation and function of CNG system.
- Students explain the CNG ignition combustion process.
- Students describe the primary and secondary function of the ignition system.
- Students describe the function of the starting system.
- Students describe the function of the charging system.
- Students use wiring schematics to identify faults.

General Motors Advanced

- Demonstrate safe practices when working on all types of vehicles.
- Demonstrate how to find repair procedures using service information databases.
- Use wiring diagrams to assist in electrical diagnosis.
- Analyze service information in order to diagnose and repair vehicle faults.
- Demonstrate how to check for diagnostic trouble codes (DTC) using a General Motors specific scan tool.
- Practice repairing faults related to automatic transmission/transaxle, HVAC, advanced engine performance, hybrid and electric vehicle technology, and light duty diesel systems.

General Motors Essentials

- Demonstrate safe practices when working on all types of vehicles.
- Demonstrate how to find repair procedures using service information databases.
- Use wiring diagrams to assist in electrical diagnosis.
- Analyze service information in order to diagnose and repair vehicle faults.
- Practice general electrical/electronic diagnosis and repair.
- Demonstrate how to check for diagnostic trouble codes (DTC) using a General Motors specific scan tool.
- Practice repairing faults related to maintenance and light repair (MLR), engine repair, automatic transmission/transaxle, manual drivetrain and axle, suspension and steering, brakes, electrical/electronics, HVAC, engine performance, hybrid and electric vehicle technology, and light duty diesel systems

General Technician--Cert

- Students demonstrate appropriate diagnostic skills for automotive braking systems.
- Students demonstrate appropriate diagnostic skills for automotive suspension and steering systems.
- Students distinguish between AC and DC voltage, primary and secondary ignition, and data bus communication systems.
- Students employ appropriate diagnostic and service skills while repairing manual drive train systems.
- Students employ appropriate safety practices while conducting automotive service.
- Students use proper automatic transmission diagnostic and service techniques.
- Students use proper engine diagnosis and service techniques.

General Technician--Degree

- Students demonstrate appropriate diagnostic skills for automotive braking systems.
- Students demonstrate appropriate diagnostic skills for automotive suspension and steering systems.
- Students distinguish between AC and DC voltage, primary and secondary ignition, and data bus communication systems.
- Students employ appropriate diagnostic and service skills while repairing manual drive train systems.
- Students employ appropriate safety practices while conducting automotive service.
- Students use proper automatic transmission diagnostic and service techniques.
- Students use proper engine diagnosis and service techniques.

Industrial Technician

- Identify the proper materials and equipment to protect a vehicle during service
- Properly set up the safety equipment for servicing a hybrid or electric vehicle
- Identify the common hand tools and explain their uses
- Identify tool sets for various automotive service areas
- Demonstrate the safe and proper way to use common automotive hand tools
- Identify the common automotive measuring tools
- Identify the common automotive measuring tools
- Identify and demonstrate the proper use of common automotive power tools
- Describe the function of fasteners and the fastener nomenclature
- Identify fuel handling and safety procedures
- Discuss origins and nature of natural gas
- Discuss the various alternative fuels 1. Propane 2. Methanol 3. Hydrogen
- Understand physical and chemical properties of natural gas
- Define internal combustion process
- Examine natural gas pressures at various stages in CNG system
- Identify general operation and function of components
- Define pneumatic systems and components
- Define hydraulic systems and components
- Describe the operating principles of pneumatics
- Describe the operating principles of hydraulics
- Provide applications for pneumatics and hydraulics
- Provide the generally accepted dangers of pneumatics and hydraulics
- Define automotive electrical systems and components
- Describe the operating principles of electrical systems
- Create series, parallel, and series-parallel circuit
- Perform Ohm's law calculations
- Calculate total resistance and amperage for series and parallel circuits
- Use a digital multimeter (DMM) to test voltage, amperage, and resistance
- Perform a parasitic draw test using an inductive meter and multimeter
- illustrate advances that EV's bring to vehicular travel and emission reduction
- Identify key features of EV technology that meet existing transportation needs as well as environmental requirements today
- Examine the differences between "real transportation performance requirements and what the general public "perceives" as their transportation performance requirement
- List the required components of a basic Electric Vehicle and a source for each component
- Demonstrate safe methods of EV operation, repair, and conversion

Intermediate Level Technician

- List safety precaution in using tools and equipment
- Understand what different measurements mean in both United States customary and metric measurement systems
- Locate applicable service information and specifications using factory manuals and shop computer program (All Data)
- List the functions that the different kinds of equipment can test and the problems they can diagnose
- Operate hand held (scan-tool) diagnostic tools to perform cylinder balance and compression testing
- Accurately identify automatic transmissions by using identification tags, serial numbers, bellhousing and pan gaskets
- Describe how and why automatic transmissions require periodic service

- Describe how transmission/transaxle hydraulics use force, pressure, and mechanical advantage
- Describe how mainline, throttle, and governor pressure are used in automatic transmissions
- State why it is important to keep components in subassemblies when disassembling a transmission or transaxle
- Identify the parts of a planetary gearsets
- Measure and adjust the clutch pedal free travel for the following types 1. Mechanical linkage 2. Cable type 3. Hydraulic
- Identify all the components of a manual transmission
- Remove and replace manual transmission
- Overhaul manual transmission with overdrive
- Measure and adjust manual transmission shift linkage
- Recognize advanced electrical automotive problems and determine appropriate repairs
- Identify correct diagnosis procedures for detecting and repairing electrical faults on modern vehicles
- Complete diagnosis and repair of advanced electrical faults in controller area networking (CAN) systems utilizing diagnostic equipment
- Describe the operation and function of high voltage electric and hybrid vehicles

Manufacture Specialty--Cert

- Students conduct the AC performance test on expansion valve and orphus tube systems.
- Students demonstrate appropriate diagnostic skills for automotive braking, suspension, and steering systems.
- Students distinguish between AC and DC voltage, primary and secondary ignition, and data bus communication systems.
- Students distinguish between electronic engine control fuel system and emission control components.
- Students use proper automatic and manual transmission diagnostic and service techniques.
- Students use proper engine diagnosis and service techniques.

Manufacture Specialty--Degree

- Students conduct the AC performance test on expansion valve and orphus tube systems.
- Students demonstrate appropriate diagnostic skills for automotive braking, suspension, and steering systems.
- Students distinguish between AC and DC voltage, primary and secondary ignition, and data bus communication systems.
- Students distinguish between electronic engine control fuel system and emission control components.
- Students use proper automatic and manual transmission diagnostic and service techniques.
- Students use proper engine diagnosis and service techniques.

PSLOs

- Demonstrate safe practices when working on all types of vehicles.
- Demonstrate how to find repair procedures using service information databases.
- Use wiring diagrams to assist in electrical diagnosis.
- Analyze service information in order to diagnose and repair vehicle faults.
- Practice general electrical/electronic diagnosis and repair.
- Demonstrate how to check for diagnostic trouble codes (DTC) using a General Motors specific scan tool.
- Practice repairing faults related to maintenance and light repair (MLR), engine repair, automatic transmission/transaxle, manual drivetrain and axle, suspension and steering, brakes, electrical/electronics, HVAC, engine performance, hybrid and electric vehicle technology, and light duty diesel systems.

CSLO

AUTO54 - Introduction To Electric Vehicle

- Eighty percent (80%) of the completing students will be able to use electrical test equipment to service and troubleshoot electrically powered vehicles.
- Students will explain electrical theory, including Ohm's law and Watt's law
- Students will identify high voltage drive-train components and explain their function

- Students will be able to disassemble an electric vehicle battery pack and identify specifications

AUTO55 - Advanced Technology Electric Vehicle

- Eighty percent (80%) of the completing students will have the ability to describe and apply the concepts of electrical energy production and how it operates the vehicle propulsion systems.
- Students will identify calculate electrical theory equations using Ohm's and Watts laws
- Students will identify high voltage components on electric vehicles
- Students will explain the difference between vehicle manufacturer high voltage systems

AUTO73 - Automotive Mechanical Repair Occupational Work Experience

- Complete the assigned ASE technical tasks related to this subject.

AUTO80 - Bureau of Automotive Repair (BAR) ASE Alternative Courses for Advanced Emissions Special

- Compare emissions, gases, HC, CO, NOX, CO2, and O2 with factory specifications
- Demonstrate whether driveability problems are mechanically or electronically endured
- Describe the operation of emission control systems
- Employ appropriate safety practices while conducting automotive service
- Identify the emission control systems components on the vehicle
- Operate the scan-tool to identify Diagnostic Trouble Codes(D.T.C.)
- Use the proper tools to diagnose and repair electrical problems

AUTO98 - Directed Studies

- Describe the purposes and outcomes of the project
- Prepare and carry out a written learning agreement

AUTO100 - Automotive Maintenance and Operation

- Perform a thorough vehicle safety inspection.
- Perform basic preventative maintenance on a vehicle.
- Describe base engine components and the process of internal combustion.
- Explain the major concepts of electrical theory.
- Identify the braking system components.
- Explain the operation of the fuel and ignition systems.

AUTO101 - Auto Service Tools & Equipment

- Use the appropriate personal protective equipment
- Identify the proper thread repair tool to repair damaged threads
- Identify the common automotive hand tools
- Explain the different types of sealers used in automotive service
- Differentiate between metric and standard fasteners

AUTO105 - Hydraulics and Pneumatics

- A. Identify the principal components of pneumatics and hydraulics
- B. Calculate the appropriate pressure or force required to operate pneumatic and hydraulic system appropriately
- C. Select the appropriate material and construction design of components for pneumatic or hydraulic operation
- D. Identify differing types of valves and explain their operation
- E. Compare and contrast pneumatic versus hydraulic applications
- F. Identify components schematics of pneumatic and hydraulic systems

AUTO107 - Diesel Exhaust Emission Control and Servicing

- Describe diesel emissions system diagnosis

- Describe general diesel inspection and diagnosis
- Describe how to diagnose diesel air induction systems
- Describe how to perform diesel fuel system diagnosis
- Describe how to perform electronic diesel engine controls diagnosis

AUTO108 - Energy and Transportation Systems

- Demonstrate a practical knowledge of solid-state electronics.
- Demonstrate practical knowledge of systems designed to improve air quality.
- Demonstrate the skills necessary to service, maintain, and repair heating, air-conditioning, and refrigeration system components and accessories.
- Analyze the effects and reactions of fluids, pressures, and temperatures on refrigerants.
- Identify various conventional electric power generation fuel sources and the cost and efficiency issues associated with each.

AUTO109 - Automotive Diesel Systems

- Demonstrate how to find repair procedures using online service information
- Demonstrate how to perform general diesel engine diagnosis
- Explain the four stroke cycle of a diesel engine
- Identify five special service tools used in diesel engine repair
- Identify internal diesel engine components such as pistons, connecting rods, crankshaft, camshaft, engine block, and the valve train

AUTO110 - Automotive Engines

- Demonstrate proper safety precautions using tools and equipment.
- Demonstrate how to use both standard and metric precision measuring instruments.
- Identify and describe different cylinder and valve arrangements.
- Describe overhead camshaft engine components.
- Describe proper techniques that apply to torque-to-yield fasteners.
- Demonstrate proper engine disassembly and assembly using special tools and equipment.

AUTO111 - Automotive Engines

- Students demonstrate proper safety precautions using tools and equipment
- Students compare different measurements using both standard and metric measuring tools
- Students identify and describe different engine configurations
- Students describe overhead camshaft engine components for proper timing
- Students describe proper techniques in loosening and torquing fasteners that are torque to yield
- Students demonstrate proper engine disassembly and assembly using special tools and equipment

AUTO120 - Automatic Transmissions and Transaxles

1. Use appropriate safety practices while conducting automotive transmission service
2. Identify the four major areas of the automatic transmission design: electrical, hydraulic, torque converters, and gear train
3. Demonstrate the overhaul procedures for an automatic transmission clutch assembly
4. Employ a scan tool supporting transmission diagnostics
5. Explain the methods used in valve body service

AUTO121 - Drivetrain Transmissions and Axles

- Demonstrate appropriate safety practices while conducting automotive transmission service.
- Identify the major components of a manual clutch system.
- Demonstrate knowledge of calculations to determine torque multiplication.
- Explain the difference between all-wheel drive systems and four wheel drive systems.
- Explain the theory and operation of transfer cases.

- Identify the four major areas of automatic transmission design. Electrical, hydraulic, torque converter, and gear train.
- Demonstrate the overhaul of an automatic transmission clutch assembly.
- Use a scan tool supporting transmission diagnostics.
- Demonstrate diagnosis and repair of a clutch.
- Interpret service information for transmission diagnosis and repair.

AUTO130 - Manual Drivetrain and Axles

- Students use appropriate safety practices while conducting automotive transmission and drive train service.
- Students use appropriate lifting equipment for vehicles and components.
- Students identify the major components of a manual clutch system.
- Students use appropriate methods for calculating simple gear ratios.
- Students explain the difference between all-wheel drive systems.
- Students explain the four common selector positions of a simple transfer case.
- Students complete universal joint service using one of the three common techniques.
- Students explain the power flow through a manual transmission or transaxle.

AUTO140 - Automotive Steering and Suspension

- Students practice proper classroom and shop safety practices.
- Students describe suspension system components and operation.
- Students demonstrate front suspension diagnosis and service.
- Students practice rear suspension diagnosis and service.
- Students demonstrate power steering diagnosis and service.
- Students identify electronic suspension component operation and service.

AUTO150 - Automotive Brakes

- Students demonstrate proper safety procedures while servicing automotive brake systems.
- Students describe braking system components and operation.
- Students demonstrate hydraulic system diagnostic and service.
- Students practice disk brake diagnostic and service.
- Students demonstrate drum brake diagnostic and service.
- Students demonstrate drum brake diagnostic and service.

AUTO151 - Automotive Alignment Brake and Suspension

- Identify the components of the braking system.
- Explain the hydraulic brake system.
- Recognize normal brake system operations.
- Identify the components of the anti-lock brake and the traction control system.
- Explain the construction and function of tires and wheels.
- Demonstrate how to perform steering systems diagnosis and repair.
- Measure wheel alignment and perform necessary adjustments. Expected SLO Performance: 100.0

AUTO155 - Medium/Heavy Duty Brake Systems

- Identify the principal components of pneumatic braking systems
- Calculate the appropriate pressure or force required to operate pneumatic braking systems
- Select the appropriate material and construction design of components for pneumatic brake operation
- Identify differing types of pneumatic valves and explain their operation
- Compare and contrast pneumatic versus hydraulic brake systems

- Identify component schematics of pneumatic brake systems

AUTO160 - Introduction to Automotive Electrical

- Students employ appropriate safety practices while conducting automotive service.
- Students describe the function of the starting system.
- Students describe the function of the charging system.
- Students use wiring schematics to identify faults.
- Use a digital multimeter to measure resistance, voltage, and amperage
- Students demonstrate proper use of proper diagnostic tools.

AUTO161 - Automotive Electricity

- Students explain the basic principles of electricity.
- Students differentiate between the different electrical circuits.
- Students use the proper tools to diagnose and repair electrical problems.
- Students identify the basic components of automotive electrical wiring.
- Students describe the relationship between the battery, starting, and charging systems.
- Students recognize the basic components of automotive lighting and accessories.

AUTO170 - Automotive Air Conditioning

- Students identify the components of an A/C system.
- Students name the control types of the A/C system.
- Students demonstrate the use of the A/C charging station.
- Students explain the A/C leak testing procedure.
- Students identify the two types of A/C system designs.

AUTO179 - Automotive Air Conditioning

- Identify the components of the A/C system.
- Demonstrate cooling system pressure testing.
- Demonstrate the use of the A/C charging station.
- Explain the A/C leak testing procedure.
- Identify the two types of A/C system designs.

AUTO180 - Electronic Engine Management Systems

- Identify and interpret engine performance concerns; determine needed action.
- Perform cylinder power balance test; determine needed action.
- Perform cylinder cranking and running compression tests; determine needed action.
- Perform cylinder leakage test; determine needed action.
- Diagnose engine mechanical, electrical, electronic, fuel, and ignition concerns; determine needed action.
- Retrieve and record diagnostic trouble codes (DTC), Onboard Diagnostic (OBD) monitor status, and freeze frame data; clear codes when applicable.
- Diagnose emissions or driveability concerns without stored or active diagnostic trouble codes; determine needed action.

AUTO181 - Electronic Engine Management Systems-Corporate

- Demonstrate whether driveability problems are mechanically or electronically endured.
- Identify all fuel system components and their relationship to one another.
- Describe the process to clean and test fuel injections for proper fuel flow.
- Describe the operation of emission control systems.

- Complete a under hood visual inspection of fuel system components.
- Operate the scan-tool to identify D.T.C. (Diagnostic Trouble Codes).
- Identify the emission control systems components on the vehicle.

AUTO182 - Introduction To Alternative Fuel

1. Describe operation and function of CNG system
2. Explain the CNG ignition combustion process
3. Differentiate between the three types of alternative fuels
4. Interpret the trouble shooting charts
5. Explain the general maintenance procedures

AUTO183 - Compressed Natural Gas Engines

- A. Demonstrate safe working procedures in working with high pressure and low temperature fuels
- B. Compare major fuel system components on light and heavy duty CNG vehicle chassis
- C. Collect measurements and perform diagnostics in relation to the CNG fuel system chassis components
- D. Identify major fuel system components on the Cummins engine model ISL-G heavy duty engine
- E. Identify common circuit problems in relation to the electrical components of the Cummins model ISL-G heavy duty engine
- F. Extract diagnostic information in relation to the electrical components of the Cummins model ISL-G heavy duty engine

AUTO190 - Automotive Management

- Students examine automotive organizational management.
- Students design an automotive shop layout.
- Students evaluate automotive shop equipment.
- Students recognize the importance of shop safety.
- Students demonstrate automotive accounting and bookkeeping practices.
- Students prepare an automotive management business plan.
- Students examine personnel management and motivation.
- Students identify automotive service quality control methods.

AUTO193 - Automotive Service Information Management

- Students examine 'B.A.R./Write It Right' service repair order regulations.
- Students design customer relations information management systems.
- Students assemble computerized service advisor repair order information system.
- Students assess vendor and supplier service information systems.
- Students formulate automotive service paper based references.
- Students interpret automotive service government regulations.

AUTO194 - Retailing Automotive Service

- Students formulate a retail automotive service labor rate.
- Students analyze retail automotive labor guides.
- Students interpret retail automotive technician productivity reports.
- Students create a retail automotive shop environment.
- Students setup a retail automotive customer environment.
- Students develop retail automotive customer follow up and promotional systems.

AUTO195 - Automotive Customer Relations

- Students recognize effective automotive service communication skills.
- Students manage automotive service customer conflict.
- Students will illustrate automotive service goal setting techniques.
- Students identify automotive service areas of improvement.
- Students examine ethical principles automotive customer service.
- Students demonstrate automotive service customer relationship management.

AUTO200 - General Motors Fundamentals

- Explain Ohm's and Watt's Laws.
- Analyze service information in order to diagnose and repair vehicle faults.
- Demonstrate how to find repair procedures using General Motors Service Information (SI).
- Identify five General Motors Special Service Tools (SST).
- Explain the General Motors strategy based diagnostic procedure.

Auto201 - General Motors Engine Repair

- Explain the four stroke cycle.
- Demonstrate how to find repair procedures using General Motors Service Information (SI).
- Analyze service information in order to diagnose and repair vehicle faults.
- Identify internal engine components such as pistons, connecting rods, crankshaft, camshaft, engine block, and the valve train.
- Identify five General Motors Special Service Tools (SST) used in engine repair.

Auto202 - General Motors Automatic Transaxle/Transmission

- Analyze service information in order to diagnose and repair vehicle faults related to automatic transmission/transaxle.
- Demonstrate how to find automatic transmission/transaxle repair procedures using General Motors Service Information (SI).
- Demonstrate how to properly use five General Motors Special Service Tools (SST) used for automatic transmission/transaxle diagnosis and repair.
- Demonstrate how to check for diagnostic trouble codes (DTC) using a General Motors specific scan tool.
- Explain Pascal's Law.

Auto203 - General Motors Manual Drivetrain and Axle

- Demonstrate diagnosis and repair of a clutch.
- Interpret service information for transmission diagnosis and repair.
- Use diagnostic tools to perform transaxle diagnosis and repair.
- Demonstrate how to diagnose drive/half shaft and universal/CV joint to determine the cause of noise and vibration.
- Inspect drive axles and determine necessary repair procedures.
- Test four-wheel drive and all-wheel drive system for proper operation.

Auto204 - General Motors Suspension and Steering Systems

- Demonstrate how to perform steering systems diagnosis and repair.
- Demonstrate how to perform suspension systems diagnosis and repair.
- Measure wheel alignment and perform necessary adjustments.
- Perform wheel and tire service.

Auto205 - General Motors Braking Systems

- Demonstrate how to perform hydraulic, power assist, and parking brake systems diagnosis and repair.
- Perform drum brake diagnosis and repair.
- Perform disc brake diagnosis and repair.

- Identify components in an electronic brake control system.

Auto206 - General Motors Electrical Systems 1

- Demonstrate how to perform battery diagnosis and repair.
- Demonstrate how to perform starting system diagnosis and repair.
- Demonstrate how to perform charging system diagnosis and repair.
- Perform general electrical/electronics diagnosis and repair.
- Use wiring diagrams to assist in electrical diagnosis.

AUTO207 - General Motors HVAC Systems

- Demonstrate how to perform heating, ventilation, air conditioning (HVAC) system service, diagnosis, and repair
- Demonstrate how to perform engine cooling system service, diagnosis, and repair.
- Identify refrigeration system components.
- Explain the refrigeration cycle.
- Test HVAC operating system controls.

AUTO208 - General Motors Engine Performance 1

- Perform general engine condition diagnosis.
- Test ignition systems.
- Demonstrate how to test fuel system concerns.
- Demonstrate how to test intake and exhaust systems.

AUTO209 - General Motors Diesel Technology

- Explain the four stroke cycle of a diesel engine.
- Demonstrate how to find repair procedures using General Motors Service Information (SI).
- Demonstrate how to perform general diesel engine diagnosis.
- Identify internal diesel engine components such as pistons, connecting rods, crankshaft, camshaft, engine block, and the valve train.
- Identify five General Motors Special Service Tools (SST) used in diesel engine repair.

AUTO210 - Automotive Upper Engine Machinist

- Recognize and avoid common accidents that occur in automotive repair and machine shops.
- Demonstrate the different machining processes used in engine repair and rebuilding.
- Demonstrate how to read micrometer scales in metric and inch units.
- Demonstrate how to check flatness of cylinder head deck surfaces.
- Demonstrate how to replace integral guides with valve guide bushings.
- Explain the different procedures for three-angle seat cutting and grinding.

AUTO211 - Automotive Lower Engine Machinist

- Recognize and avoid common accidents that occur in automotive repair and machine shops.
- Demonstrate the different machining processes used in engine repair and rebuilding.
- Demonstrate how to read micrometer scales in metric and inch units.
- Demonstrate how to check flatness of engine block deck surfaces.
- Demonstrate the cylinder honing process for new or oversize cylinders.
- Compare line-boring and line-honing procedures.

AUTO212 - Advanced High Performance Engines

- Develop skills set related to the topic outlined in consultation with the instructor
- Complete a summary evaluation of skills attained or knowledge acquired during the advanced high performance engines assigned projects
- Conduct research related to the topic outlined in consultation with the instructor

- Evaluate the research and compare with project results
- Students demonstrate proper techniques in operating the chassis dynamometer
- students demonstrate proper techniques in operating the flow bench

AUTO216 - General Motors Electrical Systems 2

- Diagnosis and repair lighting systems.
- Use diagnostic tools to diagnose and repair instrument cluster faults.
- Demonstrate how to perform driver information system diagnosis and repair.
- Test body electrical systems.

AUTO218 - General Motors Engine Performance 2

- Demonstrate how to test positive crankcase ventilation (PCV) systems.
- Diagnose and repair exhaust gas recirculation (EGR) systems.
- Diagnose and repair secondary air injection (AIR) systems.
- Test catalytic converters for proper function.
- Diagnose and repair evaporative emission controls (EVAP).
- Demonstrate how to test computerized engine controls.

AUTO226 - General Motors Electrical Systems 3

- Diagnose and repair high voltage battery system concerns.
- Test internal combustion engine (ICE) for proper operation.
- Test drive systems for proper operation.
- Diagnose and repair power electronics.
- Diagnose and repair hybrid supporting systems.

AUTO260 - Intermediate Automotive Electrical

- Explain Ohm's law as it relates to series and parallel circuits
- Identify the symbols used in an electrical diagram
- Interpret electrical troubleshooting charts
- Demonstrate use of a digital multimeter and digital oscilloscope
- Identify electrical/electronic components
- Describe computer networking systems in modern vehicles

AUTO265 - Advanced Automotive Electrical

- Develop skills related to the topic outlined in consultation with the instructor
- Complete a summary evaluation of skills attained or knowledge acquired during the advanced electrical assigned projects
- Conduct research related to the topic outlined in consultation with the instructor
- Evaluate the research and compare with project results

AUTO280 - Diagnostic Engine Performance

- Students demonstrate an understanding of on-car computers P.C.M. (Powertrain Control Modules).
- Students identify drivability problems by the use of D.T.C. (Diagnostic Trouble Codes).
- Students demonstrate knowledge of OBD-II operation.
- Students operate an oscilloscope to diagnose engine sensors.
- Students identify and repair emission control failures.

AUTO281 - Emission Control Systems -1997 Standards

- Students use the appropriate safety practices when performing automotive service.
- Students identify the emission control systems components on the vehicle.

- Students compare emissions, gases, HC, CO, NOX, CO2, and O2 with factory specifications.
- Students describe the operation of the emission control systems.
- Students demonstrate a ASM test(Acceleration Simulation Mode).
- Students complete a under hood visual inspection of fuel system components.
- Students operate the scan tool to identify D.T.C. (Diagnostic Trouble Codes).