|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Erie High School** | | **Automotive Technology Curriculum Map**  **CIP Code #47.0604** | | | **Industry Standards**  **EPA**  **S/P2**  **ALLDATA**  **OSHA** |
| **Level I** | **1stQuarter**  **Automotive Orientation**  Safety with Jack Stands and Lifts  Right-to-Know Laws, Safety Data Sheets, PPE  Safety with Hand and Power Tools  **Automatic and Manual Transmission/Transaxle**  Checking Fluid Levels/Condition in Automatic and Manual Transmissions  **Heating and Air Conditioning**  Inspecting Heating and Air Conditioning Systems | **2nd Quarter**    **Tools/Fasteners**  Fasteners and Bolts  Precision Measuring Tools  **Brakes**  Fabricating Brake Lines  Wheel Installation  Remove/Inspect Caliper Assemblies  Reassemble, Lubricate and Reinstall Caliper Assemblies  Remove/Reinstall Rotor  Refinishing Rotors  Wheel Bearings, RACES and Seals  Brake Stop Light Systems  Inspecting/Replacing Wheel Studs | **3rd Quarter**  **Suspension/Steering**  Suspension/Steering  Rack & Pinion Steering Gear  Power Steering Fluids  Tie Rods  Lower Ball Joints  Stabilizers  Shock Absorbers  Lubricating Suspension/Steering  Pre-alignment Inspection  Tire Conditions  Tire Rotation  Tire Measurements  Changing Tires  Tire Repair  **Engine Repair**  Drive Belts, Tensioners and Pulleys  Coolants | | **4th Quarter**  **Electrical/Electronic Systems**  Electrical Circuits  Testing Fusible Links, Circuit Breakers and Fuses  Repairing Wiring Harnesses  Battery State-of-Charge Test  Battery Capacity Testing  Battery Replacement  Battery Charging  Jumper Cables  Starter Current Draw Tests  Charging System Output Test  Remove/Reinstall Door Panels  **Engine Performance**  Cooling System Pressure Test  Replacing Fuel Filters  Engine Oil and Filter Changes |
| **Level II** | **1st Quarter**  **Orientation**  Shop Management  Parts Ordering  Career Paths  Work Orders  Vehicle Service Information  Vehicle/Component Identification Numbers  **Safety**  EPA and OSHA Regulations  **Tools/Fasteners**  Drilling and Re-Threading Tools  **Steering and Suspension**  Flushing, Filling, Bleeding Power Steering Systems  Power Steering Fluid Leakage  Removing/Reinstalling Power Steering Pumps  Inspect, Replace Power Steering components  Wheel Alignment  Measure Wheel, Tire, Axle Flange, Hub Runout  POS Task 537  POS Tasks 539, 540 | **2nd Quarter**  **Brakes**  Brake System Concerns  Measurement  Master Cylinders  Inspecting Brake Lines, Hoses, Fittings  Replacing Brake Lines  Bleeding/Flushing Brakes  Diagnosing Brake Issues  Brake Drums  Brake Shoes, Springs, Pins, Clips, Levels, Adjusters, Backing Support Plates  Wheel Cylinders  Brake Shoes and Parking Brakes  Inspecting Rotors  Checking Parking Brake Cable  Wheel Bearing Assemblies  Bleeding Electronic Brake Control System Hydraulic Circuits  Traction Control/Vehicle Stability Control System  **Engine Repair**  Instrument Panel Engine Warnings  Installing Engine Covers Using Gaskets, Seals, Sealers | | **3rd Quarter**  **Electrical/Electronic Systems**  Remove/Replace Terminal End from Connectors  Electronic Memory Functions  Starters  Switches, Connectors, Wires  Diagnosing Charging Systems  Remove/Install Generators  Headlights and Bulbs  Horn Operation  Washer Operation  Motor-Driven Accessories  Digital Multimeters  **Manual Transmission**  Drain/Refill Manual Transmission/Transaxle and Final Drive Unit  Checking Clutch Master Cylinder Fluid Levels  Checking for System Leaks  Replacing Manual Drivetrain and Axle Components | **4th Quarter**  **Engine Performance**  Components and Inspection of Engine Assembly  Engine Absolute Manifold Pressure Tests  Cylinder Power Balance Test  Engine Operating Temperature  Diagnostic Trouble Codes, OBD Monitor Status, Freeze Frame Data  Service Information  Tests of Actuators  Inspect/Test Fuel Pumps  Testing Throttle Body, Air Induction, Intake Manifold and Gaskets  Fuel Injectors  Idle Control  POS Tasks 831-835  **Automatic Transmission and Transaxle**  Fluid level and Fluid Condition  Drivetrain Components and Configuration  Leakage at External Seals, Gaskets and Bushings  Inspect, Replace and/or Align Powertrain Mounts |
| **Level III** | **1st Quarter**  **Orientation**  Telephone Courtesy  **Automotive Safety**  EPA and OSHA Regulations  **Tools/Fasteners**  Fastener and Thread Repairs  **Certifications:**  PA Safety Inspection  EPA 609 Refrigerant Recovery and Recycling  Emission Inspection | **2nd Quarter**  **Suspension/Steering**  Remove/Reinstall Press Fit Power Steering Pump Pulley  Inspect/Replace Power Steering Hoses and Fittings  **Brakes**  Inspect, Test and/or Replace Brake Warning Light System Components  Brake Pad Wear Indicator System  Check Vacuum Supply  Inspect Electronic Brake Control System Components  Diagnose Electronic Brake Control System Electronic Controls and Components  Regenerative Braking Systems | | **3rd Quarter**  **Electrical/Electronic Systems**  Electrical/Electronic System Concerns  Using Wiring Diagrams During Diagnosis  Locating Shorts, Grounds, Opens and Resistance Problems  Excessive Parasitic Draw  Inspecting and Testing Switches, Connectors, Relays, Solenoid Devices and Wires  Hybrid Vehicle High Voltage Circuit Disconnect Location and Safety Procedures  Electronic Modules, Security Systems, Radios and Other Accessories  Starter Circuit Voltage Drop Tests  Testing Starter Relays and Solenoids  Diagnosing Incorrect Operation of Warning Devices/Driver Information  Diagnosing Incorrect Wiper Operation, Wiper Speed Control and Park Problems | **4th Quarter**  **Engine Performance**  Engine Performance Concerns  Abnormal Engine Noise or Vibration  Abnormal Exhaust Issues  Cylinder Cranking and Running Compression Tests  Cylinder Leakage Test  Engine Mechanical, Electrical, Electronic, Fuel and Ignition Concerns  Causes of Emissions or Drivability Concerns  OBDII Monitors  POS Task 822  Test Crankshaft and Camshaft Position Sensors  POS Tasks 824, 825, 838, 843  **Engine Repair**  Adjust Valves (Mechanical or Hydraulic Lifters)  **Automatic Transmission and Transaxle**  Drain/Replace Fluid and Filters  POS Task 1006 |
| **Level IV** | **1st Quarter**  Certifications  Engine Performance Review  Automatic Transmission and Transaxle Review  NOCTI Prep  Co-op | **2nd Quarter**  Certifications  Engine Performance Review  Automatic Transmission and Transaxle Review  NOCTI Prep  Co-op | | **3rd Quarter**  Certifications  Engine Performance Review  Automatic Transmission and Transaxle Review  NOCTI Prep  Co-op | **4th Quarter**  Certifications  Engine Performance Review  Automatic Transmission and Transaxle Review  NOCTI Testing  Co-op |