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| **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 LiftsRight-to-Know Laws, Safety Data Sheets, PPESafety 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 BoltsPrecision Measuring Tools**Brakes**Fabricating Brake LinesWheel InstallationRemove/Inspect Caliper AssembliesReassemble, Lubricate and Reinstall Caliper AssembliesRemove/Reinstall RotorRefinishing RotorsWheel Bearings, RACES and SealsBrake Stop Light SystemsInspecting/Replacing Wheel Studs | **3rd Quarter****Suspension/Steering**Suspension/Steering Rack & Pinion Steering GearPower Steering FluidsTie RodsLower Ball JointsStabilizersShock AbsorbersLubricating Suspension/SteeringPre-alignment InspectionTire ConditionsTire RotationTire MeasurementsChanging TiresTire Repair**Engine Repair**Drive Belts, Tensioners and PulleysCoolants | **4th Quarter****Electrical/Electronic Systems**Electrical CircuitsTesting Fusible Links, Circuit Breakers and FusesRepairing Wiring HarnessesBattery State-of-Charge TestBattery Capacity TestingBattery ReplacementBattery ChargingJumper CablesStarter Current Draw TestsCharging System Output TestRemove/Reinstall Door Panels**Engine Performance**Cooling System Pressure TestReplacing Fuel FiltersEngine Oil and Filter Changes |
| **Level II** | **1st Quarter** **Orientation**Shop ManagementParts OrderingCareer PathsWork OrdersVehicle Service InformationVehicle/Component Identification Numbers**Safety**EPA and OSHA Regulations**Tools/Fasteners**Drilling and Re-Threading Tools**Steering and Suspension**Flushing, Filling, Bleeding Power Steering SystemsPower Steering Fluid LeakageRemoving/Reinstalling Power Steering PumpsInspect, Replace Power Steering componentsWheel AlignmentMeasure Wheel, Tire, Axle Flange, Hub RunoutPOS Task 537POS Tasks 539, 540 | **2nd Quarter****Brakes**Brake System ConcernsMeasurement Master CylindersInspecting Brake Lines, Hoses, FittingsReplacing Brake LinesBleeding/Flushing BrakesDiagnosing Brake IssuesBrake DrumsBrake Shoes, Springs, Pins, Clips, Levels, Adjusters, Backing Support PlatesWheel CylindersBrake Shoes and Parking BrakesInspecting RotorsChecking Parking Brake CableWheel Bearing AssembliesBleeding Electronic Brake Control System Hydraulic CircuitsTraction Control/Vehicle Stability Control System**Engine Repair**Instrument Panel Engine WarningsInstalling Engine Covers Using Gaskets, Seals, Sealers | **3rd Quarter****Electrical/Electronic Systems**Remove/Replace Terminal End from ConnectorsElectronic Memory FunctionsStartersSwitches, Connectors, WiresDiagnosing Charging SystemsRemove/Install GeneratorsHeadlights and BulbsHorn OperationWasher OperationMotor-Driven AccessoriesDigital Multimeters**Manual Transmission**Drain/Refill Manual Transmission/Transaxle and Final Drive UnitChecking Clutch Master Cylinder Fluid LevelsChecking for System LeaksReplacing Manual Drivetrain and Axle Components | **4th Quarter****Engine Performance**Components and Inspection of Engine AssemblyEngine Absolute Manifold Pressure TestsCylinder Power Balance TestEngine Operating TemperatureDiagnostic Trouble Codes, OBD Monitor Status, Freeze Frame DataService InformationTests of ActuatorsInspect/Test Fuel PumpsTesting Throttle Body, Air Induction, Intake Manifold and Gaskets Fuel InjectorsIdle ControlPOS Tasks 831-835**Automatic Transmission and Transaxle**Fluid level and Fluid Condition Drivetrain Components and ConfigurationLeakage at External Seals, Gaskets and BushingsInspect, 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 InspectionEPA 609 Refrigerant Recovery and RecyclingEmission Inspection | **2nd Quarter****Suspension/Steering**Remove/Reinstall Press Fit Power Steering Pump PulleyInspect/Replace Power Steering Hoses and Fittings**Brakes**Inspect, Test and/or Replace Brake Warning Light System ComponentsBrake Pad Wear Indicator SystemCheck Vacuum SupplyInspect Electronic Brake Control System ComponentsDiagnose Electronic Brake Control System Electronic Controls and ComponentsRegenerative Braking Systems | **3rd Quarter****Electrical/Electronic Systems** Electrical/Electronic System ConcernsUsing Wiring Diagrams During DiagnosisLocating Shorts, Grounds, Opens and Resistance ProblemsExcessive Parasitic DrawInspecting and Testing Switches, Connectors, Relays, Solenoid Devices and WiresHybrid Vehicle High Voltage Circuit Disconnect Location and Safety ProceduresElectronic Modules, Security Systems, Radios and Other AccessoriesStarter Circuit Voltage Drop TestsTesting Starter Relays and SolenoidsDiagnosing Incorrect Operation of Warning Devices/Driver InformationDiagnosing Incorrect Wiper Operation, Wiper Speed Control and Park Problems | **4th Quarter****Engine Performance**Engine Performance ConcernsAbnormal Engine Noise or VibrationAbnormal Exhaust IssuesCylinder Cranking and Running Compression TestsCylinder Leakage TestEngine Mechanical, Electrical, Electronic, Fuel and Ignition ConcernsCauses of Emissions or Drivability ConcernsOBDII MonitorsPOS Task 822Test Crankshaft and Camshaft Position SensorsPOS Tasks 824, 825, 838, 843**Engine Repair**Adjust Valves (Mechanical or Hydraulic Lifters)**Automatic Transmission and Transaxle**Drain/Replace Fluid and FiltersPOS Task 1006 |
| **Level IV** | **1st Quarter**Certifications Engine Performance ReviewAutomatic Transmission and Transaxle ReviewNOCTI PrepCo-op | **2nd Quarter**Certifications Engine Performance ReviewAutomatic Transmission and Transaxle ReviewNOCTI PrepCo-op | **3rd Quarter**Certifications Engine Performance ReviewAutomatic Transmission and Transaxle ReviewNOCTI PrepCo-op | **4th Quarter**CertificationsEngine Performance ReviewAutomatic Transmission and Transaxle ReviewNOCTI TestingCo-op |