

**AUTOMOTIVE SERVICE TECHNOLOGY  
COURSE DESCRIPTIONS**

**COURSE #AER 0014: AUTOMOTIVE SERVICES ASSISTOR – 300 HOURS**

**Automotive Fundamentals  
Safety with Policy and Procedures**

This course is designed to introduce the student to various systems of the automobile. It will include instruction in shop SAFETY practices, service manuals, pay structures, and personal relationships needed to succeed in the automotive field. 1.0 Credit

**Automotive Maintenance  
Basic Vehicle Maintenance**

The student will be introduced to basic vehicle preventative maintenance schedules and services performed for proper vehicle maintenance. Hands-on work will be completed by the students on customer vehicles. 2.0 Credits

**Automotive Service  
Basic Vehicle Service Procedures**

This student will be introduced to basic non-maintenance service procedures. Hands-on performance will be observed and used for student assessment. 2.0 Credits

**Electrical I  
Basic Electrical and Electronics**

The student will be introduced to basic electricity and electronic theory, circuits, OHM's Law, electrical test equipment, circuit and component testing, lighting systems, gauges, warning devices, horn wiper/washers, power seats and windows, and other electrical options. 5.0 Credits

***COMPLETED OCP A: AUTOMOTIVE SERVICES ASSISTOR – 300 HOUR***

**COURSE #AER 0453: AUTOMOTIVE SUSPENSION AND STEERING  
TECHNICIAN – 150 HOURS**

**Automotive Steering and Suspension Systems**

**Theory, Operation, Diagnosis and Alignment**

The student will study the theory and operation of steering and suspension systems and develop the knowledge and skills needed for diagnosis and repair of these systems. Alignment, testing, and diagnosis of modern vehicle systems will be emphasized. 5.0 Credits

***COMPLETED OCP E: AUTOMOBILE SUSPENSION AND STEERING TECHNICIAN – 150 HOURS***

**COURSE #AER 0418: AUTOMOTIVE BRAKE SYSTEM TECHNICIAN – 150 HOURS**

**Basic Brakes**

**Brake System Theory, Operation, and Diagnosis**

This course will cover theory and operation of automotive brake systems. Students will learn all aspects of the diagnosis, repair, and testing of brake systems including disc brakes, drum brakes, and power brake operation and repair. 2.0 Credits

**Antilock Brakes and Traction Control**

**Theory of Operation and Diagnosis**

This course will cover theory and operation, diagnosis and testing and repairs of, antilock brake and traction control of domestic and asian vehicles. Also covered will be the new active brake systems installed on some newer vehicles. 3.0 Credits

***COMPLETED OCP F: AUTOMOBILE BRAKE SYSTEM TECHNICIAN – 150 HOURS***

**COURSE #AER 0360: AUTOMOTIVE ELECTRICAL/ELECTRONIC SYSTEM  
TECHNICIAN – 300 HOURS**

**Scan Tools**

**Scan Tool Usage**

This course is designed to introduce the student to proper Scan Tool usage. Basic DTC retrieval; live stream data reading and base engine diagnosis will be emphasized. 2.0 Credits

## **Electrical II**

### **Advanced Electrical and Electronics Theory and Diagnosis**

This course will continue the study of automotive electricity and electronics. Beginning with Electronic Systems, we will study microprocessors, semi-conductors, digital devices and their theory and operation. The course will continue on to advanced troubleshooting and repair of electronic systems in today's sophisticated automobiles. The use of scan tools for the diagnosis of body electronics will be emphasized. 4.0 Credits

### **Chassis Electronics/Networks and Multiplexing Advanced Theory and Diagnosis**

This course will continue the studies of Electrical II and studies will center around operation, diagnosis and testing of Chassis Electronic systems, operation, diagnosis, and testing of automotive electronics, operation and diagnosis of networks and multiplex systems. 4.0 Credits

***COMPLETED OCP G: AUTOMOTIVE ELECTRICAL/ELECTRONICS SYSTEM  
TECHNICIAN – 300 HOURS***

### **COURSE #AER 0172: AUTOMOTIVE HEATING AND AIR CONDITIONING TECHNICIAN – 150 HOURS**

#### **Automobile Heating and Air Conditioning Theory and Operation of Auto HVAC Systems**

This course is designed to develop an understanding of the theory and operation of heating and air conditioning systems used in the modern automobile. 2.0 Credits

#### **Automobile Heating and Air Conditioning Diagnosis and Repair**

This class will cover the diagnosis, trouble-shooting, and repair of modern automotive air conditioners. 2.0 Credits

**Air Management System Diagnosis and Repair  
Advanced Diagnosis**

This course will cover the Diagnosis and Repair of Air Management Systems including computer controlled, automatic, and dual climate control. 1.0 Credit

***COMPLETED OCP H: AUTOMOTIVE HEATING AND AIR CONDITIONING  
TECHNICIAN - 150 HOURS***

**COURSE #AER 0274: MANUAL DRIVETRAIN AND AXLE TECHNICIAN – 150  
HOURS**

**Differential and Driveline Repair  
Theory, Operation, Diagnosis, and Repair**

This course will cover the diagnosis and repair of differentials and drivelines. Rear wheel drive and front wheel drive vehicles will be covered. Rear end overhaul, CV axles and drive shafts will be emphasized. 2.0 Credits

**Manual Transmission and Transaxle Repair  
Theory and Operation. Diagnosis and Repair**

This course covers the operation of modern manual transmission/transaxles and drivetrain Components. Operation, testing, diagnosis, and repair procedures are covered in detail. 3.0 Credits

***COMPLETED OCP D: MANUAL DRIVETRAIN AND AXLE TECHNICIAN – 150 HOURS***

**COURSE #AER 0257: AUTOMATIC TRANSMISSION AND TRANSAXLE  
TECHNICIAN - 150 HOURS**

**Automatic Transmission and Transaxle  
Theory and Operation. Diagnosis and Advanced Troubleshooting**

This course will cover modern automatic transmissions and transaxle components. Overhaul, testing, diagnosis and repair procedures will be covered in detail. 2.5 Credits

### **Automatic Transmission and Transaxle Electrical Diagnosis**

This course will cover the electrical and electronic controls of automatic transmissions and transaxles. Electronic valve bodies, shift solenoids, convertor clutches and control units testing, and diagnosis and repair will be emphasized. 2.5 Credits

***COMPLETED OCP C: AUTOMATIC TRANSMISSION AND TRANSAXLE TECHNICIAN – 150 HOURS***

### **COURSE #AER 0110: AUTOMOTIVE ENGINE REPAIR TECHNICIAN – 150 HOURS**

#### **Basic Gas Engines**

##### **Theory and Operation. Precision Measurement**

This course will study the design, construction and principles and theory of operation of Gas and Diesel Internal combustion Engines. Similarities and differences in construction and operation will be covered. 1.0 Credit

#### **Gas Engine Overhaul and Repair**

##### **Disassembly, Precision Measurement**

Engines will be properly disassembled, parts identified and inspected. Measurement of internal engine parts to check for wear and proper fit will be practiced. Correct reassembly techniques will be stressed including torque techniques, testing and break-in procedures. Both electronic and manual troubleshooting of engine problems and condition will be covered. 2.0 Credits

#### **Engine Lubrication and Cooling Systems**

##### **Theory, Operation and Diagnosis**

This course will study cooling and lubrication systems operation with correct trouble-shooting techniques being emphasized. 2.0 Credit

***COMPLETED OCP B: AUTOMOTIVE ENGINE REPAIR TECHNICIAN – 150 HOURS***

**COURSE #AER 0503: AUTOMOTIVE ENGINE PERFORMANCE TECHNICIAN – 300 HOURS**

**Ignition System Operation and Diagnosis  
Theory and Operation with Diagnosis and Repair Techniques**

This course will cover the theory and operation of today's automobile ignition systems. Correct diagnosis and repair techniques will be included along with hands on practice.  
2.5 Credits

**Fuel Systems, Emission Control and Essentials of Drivability  
Theory and Operation with Diagnosis and Repair Procedures**

This course will cover the theory and operation of fuel systems, emission controls, and essentials of drivability. Correct diagnostic techniques and repair procedures will be covered in detail. 3.0 Credits

**Electronic Engine Controls  
Theory and Operation with Diagnosis and Repair**

This course will introduce the student to the engine electronic control systems. Theory of Operation, diagnostics, testing, and repair will be emphasized. Fuel injection systems, EGR, evaporative emissions, PCV, fuel control, and micro processors will be covered in Detail. 2.0 Credits

**Advanced Drive Diagnosis and Repair  
Advance Drivability Techniques**

This course will continue the drivability curriculum introducing advanced drivability diagnosis. Course content will include but limited to drivability concerns caused by brake systems, steering and suspension systems, transmission and drive train, base engine concerns, and engine performance diagnosis including controlled systems. 2.5 Credits

***COMPLETED OCP I: AUTOMOTIVE ENGINE PERFORMANCE TECHNICIAN – 300 HOURS***