

Automotive Technology

Description

The purpose of this program is to provide specialized classroom instruction and practical shop experience to prepare individuals to engage in entry-level service and maintenance positions in the automotive industry. The program prepares students to safely use and maintain hand tools, power tools, jacks, and hoisting equipment. Instruction in the diagnosis and repair of engines, fuel systems, drive train, electrical systems, brake systems, and suspension systems are included. The competencies in the automotive technology training program directly correlate with the knowledge required for the certification test given by the National Institute for Automotive Service Excellence (ASE).

Program Learning Objectives

1. Demonstrate knowledge of proper safety procedures in the shop.
2. Demonstrate ability to set-up, operate and maintain hand and power tools, jacks, and hoisting equipment.
3. Demonstrate a working knowledge of diagnosis of malfunctions of engines, fuel, electrical, cooling, and brake systems, drive train, and suspension systems.
4. Demonstrate the ability to repair malfunctions of engines, fuel, electrical, cooling, and brake systems, drive train, and suspension systems.
5. Demonstrate ability to use diagnostic equipment and interpret codes.
6. Demonstrate fundamental knowledge of engines and the ability to use the information to provide quality customer service to patrons.

Curriculum

Course #	Course Title	Lecture/ Lab Hours	Credit Hours	Clock Hours
LEAD 1003	Work Readiness	2/2	3	90
AUTO 1002	Introduction to Automotive Technology	2/0	2	60
AUTO 1542	Brakes	1/3	4	150
AUTO 1671	Electronics I	1/4	5	185
AUTO 1680	Electronics II	0/5	5	185
AUTO 1343	Transmission, Transaxle, & Manual Drives	1/3	4	180
AUTO 1860	Engine Performance I	1/4	5	185
AUTO 1870	Engine Performance II	0/4	4	150
AUTO 1451	Steering and Suspension	1/5	6	210
AUTO 1140	Engine Repair	1/3	4	180
AUTO 1750	Heating and AC	1/3	4	180
TD – Automotive Technician			46	1755
Automotive Credentials Available				
LEAD 1003	Work Readiness	2/2	3	90
AUTO 1002	Introduction to Automotive Technology	2/0	2	60
AUTO 1140	Engine Repair	1/3	4	180
AUTO 1860	Engine Performance I	1/4	5	185
AUTO 1870	Engine Performance II	0/4	4	150
CTS - Automotive Engine Performance			18	665
LEAD 1003	Work Readiness	2/2	3	90
AUTO 1002	Introduction to Automotive Technology	2/0	2	60
AUTO 1671	Electronics I	1/4	5	185
AUTO 1680	Electronics II	0/5	5	185
AUTO 1860	Engine Performance I	1/4	5	185
AUTO 1870	Engine Performance II	0/4	4	150
CTS - Automotive Electrical Technician			24	855
LEAD 1003	Work Readiness	2/2	3	90
AUTO 1002	Introduction to Automotive Technology	2/0	2	60
AUTO 1343	Transmission, Transaxle, & Manual Drives	1/3	4	180
AUTO 1451	Steering and Suspension	1/5	6	210
AUTO 1542	Brakes	1/3	4	150
AUTO 1750	Heating and AC	1/3	4	180
CTS - Automotive Power Train Technician			23	870

Course Descriptions
AUTO 1002 Intro to Automotive Technology

This course teaches identification of basic gasoline engines and their related parts. Shop and classroom safety will also be taught in this course as well as every semester.

AUTO 1140 Engine Repair

This course teaches engine cooling systems, lubrication systems, engine mechanical problems, engine removal disassembly and cleaning. Course also teaches engine short block rebuilding and machining, engine top end and engine front end rebuilding. It will also teach how to reassemble, install, and break in an engine.

AUTO 1343 Trans., Transaxle, & Manual Dr

This course teaches how to identify and name parts and repair procedures for automatic transmissions, manual transmissions, transaxles, and differentials in today's modern automobiles.

AUTO 1451 Steering & Suspension

This course teaches the procedures and methods used in diagnosing steering systems, suspension systems, wheel and tire assemblies, and wheel alignment.

AUTO 1542 Brakes

This course teaches the principles of physics as related to fluid pressures and hydraulics, disc brakes, drum brakes, power assist units, antilock brakes, and traction control units.

AUTO 1671 Electronics I

This course teaches the electrical principles of Ohms Law, Series Circuits, Parallel Circuits, and Series Parallel circuits. It also teaches the basic methods of electrical diagnosis and use of schematic and wiring diagrams. This course will teach the procedures, methods, and tools necessary to diagnose and repair the battery and starting systems and associated electrical components.

AUTO 1680 Electronics II

Upon completion of this course, the student will understand procedures and methods necessary to diagnosis and repair charging systems, lighting systems, gauges, warning devices, driver information system, windshield and wiper systems, horns, power windows, power locks, stereo, GPS navigation systems, including removal and installation of components with the proper tools.

AUTO 1750 Heating & AC

This course teaches the principles of refrigeration, heating, and ventilation systems of the modern automobile. The course will teach proper methods and procedures necessary to diagnose and repair automotive air conditioning, heating, and ventilation systems. It will also teach electrical, vacuum, and automatic temperature systems. It will teach proper methods necessary to handle and store refrigerants.

AUTO 1860 Engine Performance I

This course teaches the principles of internal combustion engines and the procedures and methods necessary to diagnose general engine mechanical problems.

AUTO 1870 Engine Performance II

This course teaches the procedures and methods necessary to diagnose and repair fuel supply and fuel delivery systems. It also teaches the repair procedures for intake and exhaust systems.

LEAD 1003 Work Readiness

This course is designed to prepare for job readiness by reviewing the skills necessary for employment, including time management, communication, teamwork, and professionalism. The student will engage in a variety of skill-building activities, create a resume, participate in a simulated interview process, and review basic math and English skills necessary for their chosen program of study.