Automotive Tech (AUTM)

**Courses**

**AUTM 0100E Electrical Systems: 3 semester hours.**
Basic electrical theory, wiring diagrams, test equipment, diagnosis, repair, replacement of electrical components; including battery, starting, charging, and lighting systems. Upon successful completion, the student will be able to properly use wiring diagrams and test equipment to diagnose, test, and repair wiring and lighting in accordance with Automotive Service Excellence (ASE) standards. F

**AUTM 0100M Engine Repair: 3 semester hours.**
Theory, construction, inspection, diagnosis, and repair on internal combustion engines and related systems. Topics include fundamental operating principles of engines and diagnosis, inspection, adjustment, and repair of automotive engines using appropriate service information. Upon successful completion, student will be able to perform basic diagnosis, measurement and repair of automotive engines using appropriate tools, equipment, procedures and service information in accordance with Automotive Service Excellence (ASE) standards. F

**AUTM 0100S Automotive Technology Fundamentals and Safety: 2 semester hours.**
An introduction to the automotive industry including safety practices, shop equipment and tools, vehicle subsystems, service publications, professional responsibilities and basic automotive maintenance. F

**AUTM 0101 Advanced Engine Mechanical and Repair: 4 semester hours.**
In-depth examination of engine mechanical operation, engine rebuilding, and technical measurements of engine components for proper fit. Engine machining process, engine installation, and customer invoicing will be covered. Students will be competent in over-head cam service, timing belt removal/replacement and adjustment, engine lubrication, and cooling systems, and valve adjustment to ASE standards. PREREQ: AUTM 0100M. S

**AUTM 0102 Automotive Electrical: 8 semester hours.**
Electronic theory, wiring diagrams, test equipment, and diagnosis of electrical/electronic devices and their function in modern automobiles to include networking and module communications through the use of labscopes and other modern diagnostic methods in all maintenance that requires testing, calibration, and repair. COREQ: AUTM 0100E, AUTM 0100M, AUTM 0100S. F

**AUTM 0103 Engine Performance: 8 semester hours.**
An overview of engine operation, ignition components and systems, fuel delivery, injection components and emission control devices, including networking and module communication, circuit construction, wiring diagrams, circuit testing, and troubleshooting using labscopes and other diagnostic equipment. COREQ: AUTM 0107, AUTM 0108. F

**AUTM 0105 Steering/Suspension: 4 semester hours.**
Principles of operation, types, and diagnosis/repair of suspension and steering systems to include steering geometry. Topics include manual and power steering systems and standard and electronically controlled suspension and steering systems. Upon completion, students will be able to service and repair steering and suspension components, check and adjust alignment angles, repair tires, and balance wheels in accordance with Automotive Service Excellence (ASE) standards. COREQ: AUTM 0101, AUTM 0106 and AUTM 0120. S

**AUTM 0106 Brakes: 4 semester hours.**
Principles of operation and types, diagnosis, service, and repair of brake systems. Topics include drum and disc brakes involving hydraulic, vacuum boost, hydra-boost, electrically powered boost, and anti-lock and parking brake systems. Upon completion, students will be able to diagnose, service, and repair various automotive braking systems in accordance with Automotive Service Excellence (ASE) standards. COREQ: AUTM 0101, AUTM 0105, AUTM 0120. S

**AUTM 0107 Manual Drivetrains and Axles: 4 semester hours.**
Operation, diagnosis, and repair of manual transmissions/transaxles, clutches, driveshafts, axles, and final drives. Topics include theory of torque, power flow, and manual drive train servicing and repair using appropriate service information, tools, and equipment. Upon completion, students will be able to explain operational theory, diagnose and repair manual drive trains in accordance with Automotive Service Excellence (ASE) standards. COREQ: AUTM 0103, AUTM 0108. F

**AUTM 0108 Automatic Transmissions/Transaxles: 4 semester hours.**
Operation, diagnosis, and repair of manual transmissions/transaxles, clutches, driveshafts, axles, and final drives. Topics include theory of torque, power flow, and manual drive train servicing and repair using appropriate service information, tools, and equipment. Upon completion, students will be able to explain operational theory, diagnose and repair manual drive trains in accordance with Automotive Service Excellence (ASE) standards. COREQ: AUTM 0103 and AUTM 0107. F

**AUTM 0109 Live Work: 8 semester hours.**

**AUTM 0120 Automotive Heating and Air Conditioning: 4 semester hours.**
Provides a study of refrigeration systems, temperature controls, and automotive HVAC vacuum/electrical circuits. Emphasis placed on environmental impact of refrigerants, environmentally safe refrigerator technology and applicable legislation. Laboratory experiences provide the opportunity to study the use of air conditioning system diagnostic tools, refrigerant recovery/recycling equipment, and diagnostic and repair services in accordance with Automotive Service Excellence (ASE) standards. COREQ: AUTM 0101, AUTM 0105 and AUTM 0106. S

**AUTM 0198 Special Topics: 1-8 semester hours.**
Addresses the specific needs of individuals, enabling students to upgrade their technical skills through part-time enrollment in units of instruction that are currently available through the program's full-time pre-employment curriculum. PREREQ: Permission of instructor. D

**AUTM 0201 Advanced Electrical Systems: 8 semester hours.**
Multiplexing communication protocols, lab scoping senders, controls, actuators, pumps, and motors. Use electronic chassis controls to diagnose vehicle traction and stability control, emission control systems, electronic shift, and immobilizer systems; conduct drivability tests on a chassis dynamometer, and use hand held diagnostic tools. S, Su

**AUTM 0296 Independent Study: 1-8 semester hours.**
Addresses specific learning needs of individuals for the enhancement of knowledge and skills within the program area under the guidance of an instructor. May be repeated. Graded S/U, or may be letter-graded. PREREQ: Permission of the instructor. D

**AUTM 0298 Special Topics: 1-8 semester hours.**
Addresses the specific needs of industry, enabling students to upgrade technical skills that are not included in the current program curriculum. May be repeated. Graded S/U, or may be letter-graded. PREREQ: Permission of the instructor. D