

# Automotive Tech (AUTM)

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## Courses

### ***AUTM 1100E 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. PREREQ: Minimum score of 14 on ALEKS or equivalent. F

### ***AUTM 1100M 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. PREREQ: Minimum score of 14 on ALEKS or equivalent. F

### ***AUTM 1100S 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. PREREQ: Minimum score of 14 on ALEKS or equivalent. F

### ***AUTM 1101 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: Minimum score of 14 on ALEKS or equivalent. F

### ***AUTM 1102 Automotive Electrical: 7 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 labsopes and other modern diagnostic methods in all maintenance that requires testing, calibration, and repair. S

### ***AUTM 1103 Engine Performance: 7 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 labsopes and other diagnostic equipment. F

### ***AUTM 1105 Steering/Suspension: 3 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. S

### ***AUTM 1106 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, hydro-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. PREREQ: minimum score of 14 on ALEKS or equivalent. F

### ***AUTM 1107 Manual Drivetrains and Axles: 3 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. S

### ***AUTM 1108 Automatic Transmissions/Transaxles: 3 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. F

### ***AUTM 1109 Live Work: 7 semester hours.***

Work on customer-owned, current, and late model vehicles in a shop environment. Prepares students for ASE certification via work on customer-owned, current, and late model vehicles in a shop environment. Shop management and customer relations. PREREQ: AUTM 1100E, AUTM 1100M, AUTM 1100S, AUTM 1101, AUTM 1102, AUTM 1105, AUTM 1106, AUTM 1120. S, Su

### ***AUTM 1120 Automotive Heating and Air Conditioning: 3 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 refrigerant 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. F

### ***AUTM 1198 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 2201 Advanced Electrical Systems: 7 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 2296 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 2298 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