Automotive Service Technology

Automotive for Non-Majors

AUTO 1040 - 3 Credits

Overview of personal auto maintenance principles. Topics include proper maintenance for longevity, resale value, and safety; how vehicle systems work; and how to complete some light vehicle repairs. (2 lecture hours, 2 lab hours)

Engine Design and Operation

AUTO 1110 - 3 Credits

Design, operation and troubleshooting procedures of the gasoline engine. Includes disassembly, identification and inspection of parts, use of service manuals, safety and shop procedures. Prerequisite: Course requires Reading Placement Test Score-Category One or consent of instructor (1 lecture hour, 4 lab hours)

Manual Drive Train and Axles

AUTO 1120 - 4 Credits

Inspection, construction, nomenclature, diagnosis, disassembly and assembly of manual drive train components including clutch, manual transmission, driveshaft, universal joint, constant velocity joint, final drive, manual transaxle, transfer case and locking hub assemblies. Prerequisite: Course requires Reading Placement Test Score-Category One (3 lecture hours, 2 lab hours)

Automotive Basic Electricity

AUTO 1131 - 4 Credits

Automotive circuit construction emphasizing meter usage. Analog and digital meters and oscilloscopes are stressed. Practical approach to reading wiring diagrams, service manuals and manufacturers' repair procedures, including diagnosis of selected vehicle accessory circuits. Prerequisite: Course requires Reading Placement Test Score-Category One (3 lecture hours, 2 lab hours)

Suspension, Steering and Alignment

AUTO 1140 - 3 Credits

Front and rear suspension systems for front-wheel drive and rear-wheel drive vehicles. Steering systems, including rack and pinion, are diagnosed and repaired. Wheels and tires and their effect on handling and ride. Wheel alignment angles are measured and adjusted. Prerequisite: Course requires Reading Placement Test Score-Category One or consent of instructor (1 lecture hour, 4 lab hours)

Automotive Engine Electricity

AUTO 1232 - 4 Credits

Starting and charging systems, including starting and charging components. System testing for both no-start and preventive maintenance conditions and charging system construction and on-car testing. Construction, operation, function and testing of ignition systems of current vehicles, including electronic ignition, distributorless ignition and oscilloscope testing. Prerequisite: Automotive Service Technology 1131 with a grade of C or better or equivalent or consent of instructor. Course requires Reading Placement Test Score-Category One (3 lecture hours, 2 lab hours)

Braking Systems

AUTO 1240 - 4 Credits

Automotive braking systems including rotor and drum machining, caliper and wheel cylinder rebuilding, wheel-bearing service, brake pad and shoe replacement, and diagnosis and service of anti-lock systems. Prerequisite: Automotive Service Technology 1131 with a grade of C or better or equivalent, or consent of instructor. Course requires Reading Placement Test Score-Category One (3 lecture hours, 2 lab hours)

Automotive Air Conditioning and Heating

AUTO 1250 - 4 Credits

The servicing of automotive air conditioning and heating systems, including refrigerant recovery and recycling, compressor clutch and seal repair, performance testing, and system diagnosis and repair. Prerequisite: Automotive Service Technology 1131 with a grade of C or better or equivalent, or consent of instructor. Course requires Reading Placement Test Score-Category One (3 lecture hours, 2 lab hours)

Engine Controls & Emissions I

AUTO 1261 - 4 Credits

General Motors engine computer controls, including inspection, testing, and diagnosis of sensors, fuel injectors, emission controls, and fuel delivery by using scan tools, electrical meters, and exhaust gas infrared analyzers. Prerequisite: Automotive Service Technology 1131 with a grade of C or better or equivalent, or consent of instructor. Course requires Reading Placement Test Score-Category One (3 lecture hours, 2 lab hours)

Automotive Service Technology

Independent Study

AUTO 1840 - 1-4 Credits

Exploration and analysis of topics within the discipline to meet individual student-defined course description, goals, objectives, topical outline and methods of evaluation in coordination with and approved by the instructor. This course may be taken four times for credit as long as different topics are selected. Prerequisite: Consent of instructor is required. Course requires Reading Placement Test Score-Category One (1 to 4 lecture hours)

Automatic Transmission

AUTO 2120 - 3 Credits

Inspection, construction, nomenclature, diagnosis, disassembly and assembly of automatic transmissions and automatic transaxles, including fundamental operation and construction, inspection and rebuilding of apply devices, planetary gear sets, oil pumps, valve bodies and one-way clutches. Prerequisite: Course requires Reading Placement Test Score-Category One or consent of instructor (1 lecture hour, 4 lab hours)

Automotive Body Electricity

AUTO 2133 - 3 Credits

Selected automotive electrical accessories will be emphasized. Diagnose and repair causes of poor, intermittent, and/or no operation of accessories, such as windshield wipers and washers, power windows, power seats, power mirrors, power antennas, cruise controls, window de-icers, automatic headlights, power door locks, vehicle networks, and security systems. Completion of Automotive Service Technology 1261 is recommended prior to enrollment. Prerequisite: Automotive Service Technology 1131 and Automotive Service Technology 1232, both courses with a grade of C or better or equivalent, or consent of instructor. Course requires Reading Placement Test Score-Category One (1 lecture hours, 4 lab hours)

Engine Controls and Emissions II

AUTO 2162 - 4 Credits

Computerized engine control systems common to Ford and Daimler Chrysler vehicles. Testing of sensors, components, systems, circuits, on-board diagnosing, scan-tool use, and fuel injectors. Prerequisite: Automotive Service Technology 1131, Automotive Service Technology 1232, and Automotive Service Technology 1261, all with a grade of C or better or equivalent, or consent of instructor. Course requires Reading Placement Test Score-Category One (3 lecture hours, 2 lab hours)

Advanced Automotive Drivetrains

AUTO 2220 - 3 Credits

Inspection, construction, operation, and diagnosis of automatic and manual transmission, transaxle, transfer case, and driveline electrical components and controls. Includes fundamental theory, operation, construction, inspection, and diagnosis of switches, sensors, solenoids, motors, and control devices. Prerequisite: Automotive Service Technology 1120, Automotive Service Technology 1131 and Automotive Service Technology 2120 with a grade of a C or better or equivalent or consent of instructor. Course requires Reading Placement Test Score-Category One (1 lecture hour, 4 lab hours).

Automotive Service

AUTO 2280 - 6 Credits

Trade experience for the advanced automotive student. Prerequisite: Automotive Service Technology 1110, Automotive Service Technology 1120, Automotive Service Technology 1140, Automotive Service Technology 1232, Automotive Service Technology 1240, Automotive Service Technology 1250, Automotive Service Technology 1261 and Automotive Service Technology 2120 or equivalent or consent of instructor. Course requires Reading Placement Test Score-Category One (1 lecture hour, 10 lab hours).

Automotive Hybrid Technology

AUTO 2345 - 2 Credits

An overview of hybrid vehicles. Terminology, safety requirements, theory of operation, and modification to other automotive systems are reviewed. Inspection and diagnosis of hybrid systems using specialized tools. Also examined is the impact of hybrid technology on the automotive industry. Prerequisite: Course requires Reading Placement Test Score-Category One (1 lecture hour, 2 lab hours)

Automotive ScanTool Usage & Exploration

AUTO 2364 - 1 Credits

Hands-on practice and experience with multiple manufacturer-specific and generic OBD2 ScanTools. Students will explore the many different functions of original equipment and aftermarket ScanTools for diagnosis and programming capabilities on multiple vehicle systems. Prerequisite: Automotive Service Technology 1232 or equivalent or Automotive Service Technology 1261 or equivalent or consent of instructor. Course requires Reading Placement Test Score-Category One. (2 lab hours)

Automotive Service Technology

Intro to Diesel Fuel Systems & Emissions

AUTO 2365 - 2 Credits

A generic course designed to increase the knowledge of diesel engine design, fuel control systems, and emission controls. Topics of discussion include direct and indirect injection, mechanical fuel systems, unit injection systems, electronic diesel control, hydraulically actuated electronic unit injectors (HEUI), common-rail fuel systems and related emission control devices. Prerequisite: Automotive Service Technology 1110 and Automotive Service Technology 1261 with a grade of C or better, or equivalent or consent of instructor. Course requires Reading Placement Test Score-Category One. (1 lecture hour, 2 lab hours)

A.S.E. Certification Analysis & Tech

AUTO 2370 - 2 Credits

An integrative course teaching a higher level of skills to combine previous courses and introduce updates in technology to prepare for the National Institute for Automotive Service Excellence (ASE) certification exams. Prerequisite: Course requires Reading Placement Test Score-Category One (2 lecture hours)

Experimental/Pilot Class

AUTO 2840 - 1-6 Credits

Exploration and analysis of topics within the discipline. This course is used to pilot a proposal for a permanent discipline course. This course may be taken four times for credit as long as different topics are selected. Prerequisite: Course requires Reading Placement Test Score-Category One (6 lecture hours, 12 lab hours)

Internship (Career & Technical Ed)yCoop Ed/Internship Occup

AUTO 2860 - 1-4 Credits

Course requires participation in Career and Technical Education work experience with onsite supervision. Internship learning objectives are developed by student and faculty member, with approval of employer, to provide appropriate work-based learning experiences. Credit is earned by working a minimum of 75 clock hours per semester credit hour, up to a maximum of four credits. Prerequisite: 2.0 cumulative grade point average; 12 semester credits earned in a related field of study; students work with Career Services staff to obtain approval of the internship by the Associate Dean from the academic discipline where the student is planning to earn credit.

Internship Advanced (Career & Tech Ed)

AUTO 2865 - 1-4 Credits

Continuation of Internship (Career and Technical Education). Course requires participation in Career & Technical Education work experience with onsite supervision. Internship learning objectives are developed by student and faculty member, with approval of employer, to provide appropriate work-based learning experiences. Credit is earned by working a minimum of 75 clock hours per semester credit hour, up to a maximum of four credits. Prerequisite: 2.0 cumulative grade point average; 12 semester credits earned in a related field of study; students work with Career Services staff to obtain approval of the internship by the Associate Dean from the academic discipline where the student is planning to earn credit.