AUTOMOTIVE SERVICE TECHNOLOGY (AUTO)

AUTO 1040
Automotive for Non-Majors
3 Credit Hours
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)
Course types: Contemporary Life Skills (A.A., A.S., A.A.S., A.G.S.)

AUTO 1100
Intro to Automotive Service Technology
1 Credit Hour
An introductory course in the fundamental knowledge and skills that an automotive student will need for the automotive program. Students will learn shop safety, use of service information, automotive lifts, use of hand tools, identification of fasteners, and automotive measurement techniques. (1 lecture hour, .5 lab hours)

AUTO 1110
Engine Design and Operation
3 Credit Hours
Design, operation and troubleshooting procedures of the gasoline engine. Includes disassembly, identification and inspection of parts, use of service manuals, safety, and shop procedures. (1 lecture hour, 4 lab hours)
Prerequisite: Course requires Reading Placement Category One or consent of instructor.
Course types: Contemporary Life Skills (A.A., A.S., A.A.S., A.G.S.)

AUTO 1120
Manual Drive Train and Axles
3 Credit Hours
The course covers automotive manual drive trains, clutch hydraulics, axle systems, diagnostics and inspection. (1 lecture hour, 4 lab hours)
Prerequisite: Course requires Reading Placement Category One or consent of instructor.

AUTO 1131
Automotive Electrical I
3 Credit Hours
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. (1 lecture hour, 4 lab hours)
Prerequisite: Course requires Reading Placement Category One or consent of instructor.

AUTO 1140
Suspension, Steering and Alignment
3 Credit Hours
Automotive 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. (1 lecture hour, 4 lab hours)
Prerequisite: Course requires Reading Placement Category One or consent of instructor.

AUTO 1150
Power Equipment Electrical Systems
3 Credit Hours
Basic electrical theory, circuit construction, and digital multimeter use. Service information and wiring diagrams used in power equipment diagnosis. Power equipment starting and charging systems. Small engine ignition systems. Electrical wiring repair techniques. Diagnosis of power equipment electrical systems. Credit cannot be earned for both AUTO 1150 and HORT 1150. (2 lecture hours, 2 lab hours)

AUTO 1151
2-Cycle Small Engine Repair/Maintenance
2 Credit Hours
Introduces principles of 2-cycle engine-powered devices used in the landscape industry. Topics Include 2-cycle engine function, use of technical literature, disassembly, repair, and troubleshooting techniques. Credit cannot be earned for both AUTO 1151 and HORT 1151. (1 lecture hour, 2 lab hours)

AUTO 1152
4-Cycle Small Engine Repair/Maintenance
3 Credit Hours
Introduces principles of 4-cycle small engine repair and maintenance. Includes troubleshooting, failure analysis and problem solving skills to repair and rebuild small engines used in landscape, industrial, and agricultural applications. Credit cannot be earned for both AUTO 1152 and HORT 1152. (2 lecture hours, 2 lab hours)

AUTO 1232
Automotive Electrical II
3 Credit Hours
Starting, charging, and lighting systems are covered with an introduction to vehicle immobilizer, motor accessories, vehicle network and Automated Driver Assist Systems (ADAS). (1 lecture hour, 4 lab hours)
Prerequisite: AUTO 1131 with a grade of C or better, or equivalent or consent of instructor. Course requires Reading Placement Category One.

AUTO 1240
Braking Systems
3 Credit Hours
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. (1 lecture hour, 4 lab hours)
Prerequisite: AUTO 1131 with a grade of C or better, or equivalent or consent of instructor. Course requires Reading Placement Category One.

AUTO 1250
Automotive Air Conditioning and Heating
3 Credit Hours
The servicing of automotive air conditioning and heating systems, including refrigerant recovery and recycling, performance testing, and system diagnosis and repair. (1 lecture hour, 4 lab hours)
Prerequisite: AUTO 1131 with a grade of C or better, or equivalent or consent of instructor. Course requires Reading Placement Category One.

AUTO 1261
Engine Controls & Emissions I
3 Credit Hours
Engine computer controls including theory, inspection, testing, and diagnosis of sensors, outputs, emission controls, fuel, and ignition systems. (1 lecture hour, 4 lab hours)
Prerequisite: AUTO 1110 and AUTO 1131, both with a grade of C or better, or equivalent, or consent of instructor. Course requires Reading Placement Category One.

AUTO 1301
Automotive Service Consulting
3 Credit Hours
Fundamentals of automotive customer service, sales skills, and writing effective repair orders will be covered. (3 lecture hours)
Prerequisite: Course requires Reading Placement Category One or consent of instructor.

AUTO 1302
Automotive Service Management
3 Credit Hours
Principles of service management and repair shop ownership will be covered. Shop operations, facilities, marketing, and employee management will be explored. (3 lecture hours)
Prerequisite: AUTO 1301 with a grade of C or better, or equivalent or consent of instructor. Course requires Reading Placement Category One.

AUTO 1820
Selected Topics
1-6 Credit Hours
Introductory exploration and analysis of selected topics with a specific theme indicated by course title listed in college class schedule. (1 to 6 lecture hours, 2 to 12 lab hours)

AUTO 1840
Independent Study
1-4 Credit Hours
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. (1 to 4 lecture hours)
Prerequisite: Consent of instructor is required. Course requires Reading Placement Test Score-Category One.

AUTO 2120
Automatic Transmission
3 Credit Hours
This course covers the theory of operation, diagnosis, and repair of automatic transmissions and transaxles. Course includes inspection and rebuilding of transmission apply devices, planetary gear sets, oil pumps, valve bodies, and one-way clutches. (1 lecture hour, 4 lab hours)
Prerequisite: AUTO 1120 with a grade of C or better, or equivalent or consent of instructor. Course requires Reading Placement Category One.

AUTO 2133
Automotive Electrical III
3 Credit Hours
Course covers theory of operation and diagnosis of standard body electrical systems. Topics include vehicle networks, power windows, wipers, door locks, seats, lighting, instrumentation, cruise control, Automated Driver Assistance Systems (ADAS), and supplemental restraints. Emphasis is placed on analysis of electrical diagrams and development and practice of diagnostic techniques. (1 lecture hour, 4 lab hours)
Prerequisite: AUTO 1232 with a grade of C or better, or equivalent, or consent of instructor. Course requires Reading Placement Category One. Recommended: AUTO 1261 with a grade of C or better, or equivalent.

AUTO 2140
Advanced Chassis Systems
3 Credit Hours
Advanced operation, diagnosis and testing of suspension and chassis systems. Topics include TPMS, electronic power steering and suspension systems, and NVH diagnostics. (1 lecture hour, 4 lab hours)
Prerequisite: AUTO 1120, AUTO 1131, AUTO 1140, and AUTO 1240, all with a grade of C or better, or equivalent or consent of instructor. Course requires Reading Placement Category One.

AUTO 2162
Engine Controls and Emissions II
3 Credit Hours
Advanced computerized engine control systems common to domestic and import vehicles. Testing of systems, sensors, components, circuits, scan-tool use, fuel injection, and On Board Diagnostics (OBD) II. (1 lecture hour, 4 lab hours)
Prerequisite: AUTO 1131, AUTO 1232, and AUTO 1261, all with a grade of C or better or equivalent, or consent of instructor. Course requires Reading Placement Category One.

AUTO 2220
Advanced Automotive Drivetrains
3 Credit Hours
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. (1 lecture hour, 4 lab hours)
Prerequisite: AUTO 1120, AUTO 1131, and AUTO 2120 with a grade of a C or better, or equivalent or consent of instructor. Course requires Reading Placement Category One.

AUTO 2280
Automotive Service
6 Credit Hours
This course provides hands-on automotive repair shop experience for the advanced automotive student. (1 lecture hour, 10 lab hours)
Prerequisite: AUTO 1140, AUTO 1232, AUTO 1240, AUTO 1250, AUTO 1261, and AUTO 2120 or equivalent, or consent of instructor. Course requires Reading Placement Category One.

AUTO 2345
Automotive Hybrid Technology
2 Credit Hours
Overview of Hybrid Electric Vehicles (HEV), Plug-in Hybrid Electric Vehicles (PHEV), and Battery Electric Vehicles (BEV) terminology, safety requirements, theory of operation, modification to other automotive systems, and specialized tool requirements. (1 lecture hour, 2 lab hours)
Prerequisite: AUTO 1131 with a grade of C or better, or equivalent or consent of instructor. Course requires Reading Placement Category One.

AUTO 2364
Automotive ScanTool Usage & Exploration
1 Credit Hour
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. (2 lab hours)
Prerequisite: AUTO 1232 or equivalent or AUTO 1261 or equivalent or consent of instructor. Course requires Reading Placement Category One.

AUTO 2365
Intro to Diesel Fuel Systems & Emissions
2 Credit Hours
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. (1 lecture hour, 2 lab hours)
Prerequisite: AUTO 1110 and AUTO 1261 with a grade of C or better, or equivalent or consent of instructor. Course requires Reading Placement Category One.

AUTO 2370
A.S.E. Certification Analysis & Tech
2 Credit Hours
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. (2 lecture hours)
Prerequisite: Course requires Reading Placement Category One.

AUTO 2455
Electric Vehicles (EV) and Equipment
3 Credit Hours
An overview of Battery Electric Vehicles (BEV), and Range Extender (REx) terminology, safety requirements, theory of operation, modification to other automotive systems, and specialized tool requirements. (2 lecture hours, 2 lab hours)
Prerequisite: AUTO 1232 with a grade of C or better, or equivalent, or consent of instructor. Course requires Reading Placement Category One. Recommended: AUTO 1261 or AUTO 2345 with a grade of C or better, or equivalent.

AUTO 2840
Experimental/Pilot Class
1-6 Credit Hours
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. (6 lecture hours, 12 lab hours)
Prerequisite: Course requires Reading Placement Test Score-Category One.

AUTO 2860
Internship (Career & Technical Ed)
1-4 Credit Hours
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. (5 to 20 lab hours)
Prerequisite: Consent of instructor and 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 Dean from the academic discipline where the student is planning to earn credit.
Course types: Contemporary Life Skills (A.A., A.S., A.A.S., A.G.S.)

AUTO 2865
Internship Advanced (Career & Tech Ed)
1-4 Credit Hours
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. (5 to 20 lab hours)
Prerequisite: Consent of instructor and 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 Dean from the academic discipline where the student is planning to earn credit.
Course types: Contemporary Life Skills (A.A., A.S., A.A.S., A.G.S.)