AUTOMOTIVE SERVICE TECHNOLOGY

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)

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. Prerequisite: Course requires Reading Placement Test Score-Category One and Concurrent enrollment in Automotive Service Technology 1100 or consent of instructor. (1 lecture hour, 4 lab hours)

AUTO 1120
Manual Drive Train and Axles
3 Credit Hours
The course covers automotive manual drive trains, clutch hydraulics, axle systems, diagnostics and inspection. Prerequisite: Course requires Reading Placement Test Score-Category One and Automotive Service Technology 1100 or consent of instructor. (1 lecture hour, 4 lab hours)

AUTO 1131
Automotive Basic Electricity
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. Prerequisite: Course requires Reading Placement Test Score-Category One or consent of instructor. (1 lecture hour, 4 lab hours)

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. Prerequisite: Course requires Reading Placement Test Score - Category One and Concurrent enrollment in Automotive Service Technology 1100 or consent of instructor. (1 lecture hour, 4 lab hours)

AUTO 1232
Automotive Engine Electricity
4 Credit Hours
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)

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. Prerequisite: Course requires Reading Placement Test Score-Category One and Automotive Service Technology 1131 with a grade of C or better, or equivalent or consent of instructor. (1 lecture hour, 4 lab hours)

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. Prerequisite: Course requires Reading Placement Test Score-Category One and Automotive Service Technology 1131 with a grade of C or better, or equivalent, or consent of instructor. (1 lecture hour, 4 lab hours)

AUTO 1261
Engine Controls & Emissions I
4 Credit Hours
Engine computer controls including theory, inspection, testing, and diagnosis of sensors, outputs, emission controls, and fuel systems. Automotive Service Technology 1110 is recommended. Prerequisite: Course requires Reading Placement Test Score-Category One and Automotive Service Technology 1131 with a grade of C or better, or equivalent, or consent of instructor. (3 lecture hours, 2 lab hours)

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

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. Prerequisite: Course requires Reading Placement Test Score-Category One and Automotive Service Technology 1301 with a grade of C or better, or equivalent or consent of instructor. (3 lecture hours)
AUTO 1820
Selected Topics
1 to 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 to 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. Prerequisite: Consent of instructor is required. Course requires Reading Placement Test Score-Category One. (1 to 4 lecture hours)

AUTO 2120
Automatic Transmission
3 Credit Hours
Inspection, construction, nomenclature, diagnosis, disassembly, and assembly of automatic transmissions and transaxles. Topics also include 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 and Automotive Service Technology 1120 with a grade of C or better, or equivalent or consent of instructor. (1 lecture hour, 4 lab hours)

AUTO 2133
Automotive Body Electricity
3 Credit Hours
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 with a grade of C or better, or equivalent, or consent of instructor. Course requires Reading Placement Test Score-Category One. (1 lecture hour, 4 lab hours)

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. Prerequisite: Course requires Reading Placement Test Score-Category One. Automotive Service Technology 1120, 1131, 1140 and 1240, all with a grade of C or better, or equivalent or consent of instructor. (1 lecture hour, 4 lab hours)

AUTO 2162
Engine Controls and Emissions II
4 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. Prerequisite: Course requires Reading Placement Test Score-Category One and 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. (3 lecture hours, 2 lab hours)

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. Prerequisite: Course requires Reading Placement Test Score-Category One and Automotive Service Technology 1120, Automotive Service Technology 1131 and Automotive Service Technology 2120 with a grade of C or better, or, equivalent or consent of instructor. (1 lecture hour, 4 lab hours).

AUTO 2240
Advanced Automotive Service
6 Credit Hours
Trade experience for the advanced automotive student. Prerequisite: Course requires Reading Placement Test Score-Category One and 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. (1 lecture hour, 10 lab hours).

AUTO 2234
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. Prerequisite: Course requires Reading Placement Test Score-Category One and Automotive Service Technology 1131 with a grade of C or better, or equivalent or consent of instructor. (1 lecture hour, 2 lab hours)

AUTO 2264
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. Prerequisite: Course requires Reading Placement Test Score-Category One and Automotive Service Technology 1232 or equivalent or Automotive Service Technology 1261 or equivalent or consent of instructor. (2 lab hours)

AUTO 2345
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. Prerequisite: Course requires Reading Placement Test Score-Category One and Automotive Service Technology 1232 or equivalent or Automotive Service Technology 1261 or equivalent or consent of instructor. (2 lab hours)

AUTO 2364
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. Prerequisite: Course requires Reading Placement Test Score-Category One
and Automotive Service Technology 1110 and Automotive Service Technology 1261 with a grade of C or better, or equivalent or consent of instructor. (1 lecture hour, 2 lab hours)

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. Prerequisite: Course requires Reading Placement Test Score-Category One. (2 lecture hours)

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

AUTO 2860
**Internship (Career & Technical Ed)**
1 to 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. 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.

AUTO 2865
**Internship Advanced (Career & Tech Ed)**
1 to 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. 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.