AUTOMOTIVE TECHNOLOGY (AUTO)

AUTO 112 Automotive Foundations and Safety
(3 Credits, Fall/Spring)
Introduction to the automotive industry including safety practices, shop equipment, tools, vehicle subsystems, service publications, professional responsibilities, basic automotive maintenance, service advising, and parts identification. PREREQ: Completion of (or placement into) ENGL 101 and MATH 118, program orientation, and Automotive Technology major. COREQ: AUTO 115 and AUTO 121. *(2 lecture hours, 3 lab hours, 3 credits)*

AUTO 115 Automotive Maintenance
(3 Credits, Fall/Spring)
Development of skills in the areas of automotive service, maintenance, and light repair. Includes shop and safety practices, tools and equipment, measuring, fasteners, vehicle inspections, minor maintenance, and tires. PREREQ: AUTO 112. COREQ: AUTO 121. *(2 lecture hours, 3 lab hours, 3 credits)*

AUTO 121 Automotive Electrical Systems I
(3 Credits, Fall/Spring)
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: AUTO 112. COREQ: AUTO 115. *(2 lecture hours, 3 lab hours, 3 credits)*

AUTO 125 Automotive Electrical Systems II
(3 Credits, Fall/Spring)
Fundamentals of theory, diagnosis, and repair of simple and complex electrical accessories, power windows, power seats, gauges, entertainment systems, cruise controls, and other convenience systems. PREREQ: AUTO 112, AUTO 115, and AUTO 121. COREQ: AUTO 131 and AUTO 135. *(2 lecture hours, 3 lab hours, 3 credits)*

AUTO 131 Brakes
(3 Credits, Fall/Spring)
Fundamentals of theory, diagnosis, and repair of various automotive brake systems, power assist units, ABS systems, and stability control systems. PREREQ: AUTO 112, AUTO 115, and AUTO 121. COREQ: AUTO 125 and AUTO 135. *(2 lecture hours, 3 lab hours, 3 credits)*

AUTO 135 Suspension and Steering
(3 Credits, Fall/Spring)
Fundamentals of theory, diagnosis, and repair of chassis, suspension, wheel alignment, wheel and tire balance, and various types of steering gears. PREREQ: AUTO 112, AUTO 115, and AUTO 121. COREQ: AUTO 125 and AUTO 131. *(2 lecture hours, 3 lab hours, 3 credits)*

AUTO 141 Engine Repair
(3 Credits, Fall/Spring)
Theory, construction, inspection, diagnosis, and repair of 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, students 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: AUTO 112. COREQ: AUTO 115 and AUTO 121. *(2 lecture hours, 3 lab hours, 3 credits)*

AUTO 145 Manual Drivetrain and Axles
(3 Credits, Fall/Spring)
Fundamentals of theory, diagnosis, and repair of manual transmissions, transaxles, drivelines, clutches, and differentials. PREREQ: AUTO 112, AUTO 115, AUTO 121, and AUTO 141. COREQ: AUTO 125, AUTO 131, and AUTO 135. *(2 lecture hours, 3 lab hours, 3 credits)*

AUTO 250 Engine Management Systems I
(3 Credits, Fall/Spring)
Theory design, operation, and diagnosis of fuel, ignition, and emission control systems in automobiles and light trucks. PREREQ: AUTO 125, AUTO 131, AUTO 135, and AUTO 145. COREQ: AUTO 255, AUTO 260, and AUTO 265. *(2 lecture hours, 3 lab hours, 3 credits)*

AUTO 255 Engine Management Systems II
(3 Credits, Fall/Spring)
Diagnosis of control systems in automobiles and light trucks. PREREQ: AUTO 125, AUTO 131, AUTO 135, and AUTO 145. COREQ: AUTO 250, AUTO 260, and AUTO 265. *(2 lecture hours, 3 lab hours, 3 credits)*

AUTO 260 Automatic Transmission/Transaxle
(3 Credits, Fall/Spring)
Fundamentals of theory, diagnosis, and repair of automatic transmissions/transaxles. PREREQ: AUTO 125, AUTO 131, AUTO 135, and AUTO 145. COREQ: AUTO 250, AUTO 255, and AUTO 265. *(2 lecture hours, 3 lab hours, 3 credits)*

AUTO 265 Heating and Air Conditioning
(3 Credits, Fall/Spring)
Fundamentals of theory, diagnosis, and repair of HVAC systems. PREREQ: AUTO 125, AUTO 131, AUTO 135, and AUTO 145. COREQ: AUTO 250, AUTO 255, and AUTO 260. *(2 lecture hours, 3 lab hours, 3 credits)*

AUTO 269 Hybrid and Advanced Electronic Diagnosis
(4 Credits, Fall/Spring)
Advanced system theory and diagnostic procedures for hybrid and electric drive systems. Includes identification of hybrid vehicle components, electronic diagnosis of issues, and repair of concerns and network faults. Also includes proper programming of module software. PREREQ: AUTO 125, AUTO 250, AUTO 255, AUTO 260, AUTO 265, and completion of a GEM 1 and GEM 3 course. COREQ: AUTO 267 and AUTO 290. *(2 lecture hours, 6 lab hours, 4 credits)*

AUTO 270 Light-Duty Diesel Technology
(3 Credits, Fall/Spring)
Gain the knowledge and skills needed to perform service and repairs on light-duty diesel vehicles. PREREQ: AUTO 250, AUTO 255, AUTO 260, AUTO 265, and completion of a GEM 1 and GEM 3 course. COREQ: AUTO 275, AUTO 280, and AUTO 290. *(2 lecture hours, 3 lab hours, 3 credits)*

AUTO 275 Electric Vehicle and Hybrid Technology
(3 Credits, Fall/Spring)
This course provides students with an in-depth understanding of advanced concepts, components, safety protocols, and emerging technologies in the electronic and hybrid vehicle industry. By combining advanced high voltage theory and hands-on experiments, students will develop a comprehensive knowledge of high voltage systems, testing, and their critical role in shaping the future of electric mobility. PREREQ: AUTO 125, AUTO 250, AUTO 255, AUTO 260, AUTO 265, and completion of a GEM 1 and GEM 3 course. COREQ: AUTO 270, AUTO 280, and AUTO 290. *(2 lecture hours, 3 lab hours, 3 credits)*

AUTO 280 Automotive Shop Practice
(3 Credits, Fall/Spring)
This course provides practical application of essential skills required for the successful operation of an automotive shop. Live projects will be assigned by an instructor for each individual student to gain knowledge of step-by-step shop operations. PREREQ: AUTO 250, AUTO 255, AUTO 260, AUTO 265, and completion of a GEM 1 and GEM 3 course. COREQ: AUTO 270, AUTO 275, and AUTO 290. *(1 lecture hours, 6 lab hours, 3 credits)*

AUTO 290 Automotive Technology Capstone
(3 Credits, Fall/Spring)
This course is designed to provide supervised application of coursework. Capstone projects will be assigned by an instructor for each individual student and may take place within an industry or lab setting. This four-week course is on-the-job style training and provides real-life experience as the student participates in the daily routine of an entry-level automotive technician. Students may perform tasks on many different levels and a wide variety of subjects such as, but not limited to, the following areas: maintenance and light repair, brakes, steering and suspension, alignment, electrical, electronics, engine repair, transmission, transaxle, differentials, engine performance, and heating and air conditioning. PREREQ: AUTO 250, AUTO 255, AUTO 260, AUTO 265, and completion of a GEM 1 and GEM 3 course. COREQ: AUTO 270, AUTO 275, and AUTO 280. *(0 lecture hours, 9 lab hours, 3 credits)*

Refer to How to Read Course Descriptions *for an explanation of elements found in the course descriptions above.*