AUTOMOTIVE TECHNOLOGY

AUT-1A
Automotive Engine Repair (upper End) **4.00 units**
Prerequisite: AUT-50.
Description: Theory and principles of engine operation with emphasis on mechanical diagnosis, engine disassembly, rebuilding, reassembly, and related service of upper end engine components. Emphasis placed upon precision measuring. 45 hours lecture and 81 hours laboratory. (Formerly AUT-51A) (Letter grade only)

AUT-1B
Automotive Engine Repair (lower End) **4.00 units**
Prerequisite: AUT-50.
Description: Theory and principles of operation for engine mechanical diagnosis, engine disassembly, rebuilding, reassembly, and related service of lower end engine components. Emphasis placed upon precision measuring. 45 hours lecture and 81 hours laboratory. (Formerly AUT-51B) (Letter grade only)

AUT-2
Automotive Automatic Transmission/Transaxles **4.00 units**
Prerequisite: AUT-50.
Description: Prepares students to inspect, service, diagnose, repair, and rebuild automatic transmissions and transaxles. Emphasis placed on disassembly, component measurement, and reassembly. 45 hours lecture and 81 hours laboratory. (Formerly AUT-55A) (Letter grade only)

AUT-3
Automotive Manual Drivetrain Systems **4.00 units**
Prerequisite: AUT-50.
Description: Prepares students to inspect, service, diagnose, repair, and rebuild manual transmissions/transaxles and drivetrain systems. Emphasis placed on disassembly, component measurement, and reassembly. 45 hours lecture and 81 hours laboratory. (Formerly AUT-55B) (Letter grade only)

AUT-4A
Automotive Steering and Suspension **4.00 units**
Prerequisite: AUT-50.
Description:Prepares students to identify, inspect, test, service, and diagnose automotive steering and suspension systems. Emphasis placed on wheel alignment, vibration correction, system inspection, diagnosis, and repair/replacement of faulty components. 45 hours lecture and 81 hours laboratory.(Formerly AUT-53A)(Letter grade only)

AUT-4B
Advanced Suspension and Brake Systems **4.00 units**
Prerequisite: AUT-6A.
Corequisite: AUT-5, AUT-4A.
Description:Advanced Suspension and Brake Systems focuses on computer controlled suspension, steering and braking systems. Emphasis placed on theory, operation, diagnosis, and repair of systems found on modern automobiles. 45 hours lecture 81 hours laboratory. (Letter grade only)

AUT-5
Automotive Brakes **4.00 units**
Prerequisite: AUT-50.
Description:Prepares students to identify, inspect, test, service, and diagnose automotive braking systems. Emphasis placed on brake system malfunction, abnormal wear diagnosis, and correction procedures. 45 hours lecture and 81 hours laboratory.(Formerly AUT-53B) (Letter grade only)

AUT-6A
Automotive Electrical Systems 1 **4.00 units**
Prerequisite: None.
Corequisite: AUT-50.
Description: Prepares students to inspect, test, and repair electrical circuits found on modern automobiles. Emphasis will be placed on using wiring diagrams, electronic component locators, digital multimeters, and related test equipment to diagnose and repair automotive electrical and electronic circuits. 45 hours lecture and 81 hours laboratory. (Formerly AUT-54) (Letter grade only)

AUT-6B
Automotive Electrical Systems 2 **4.00 units**
Prerequisite: AUT-6A.
Description:Automotive Electrical Systems 2 focuses on advanced electrical and electronics systems. Emphasis placed on theory, operation, diagnosis and repair of advanced electrical/electronic system found on modern automobiles. 45 hours lecture 81 hours laboratory. (Letter grade only)

AUT-7
Automotive Heating and Air Conditioning **4.00 units**
Prerequisite: AUT-50.
Description: Prepares students to identify, inspect, test, service, and diagnose automotive heating and air conditioning systems. Emphasis placed on diagnosis, service, and safe handling of refrigerants. 45 hours lecture and 81 hours laboratory. (Formerly AUT-57) (Letter grade only)

AUT-8A
Automotive Engine Performance 1 **4.00 units**
Prerequisite: AUT-50.
Description: Prepares students to service, diagnose, and repair base engine, ignition, fuel, and computer control systems. Emphasis placed on inspection procedures, the troubleshooting process, and electrical fault diagnosis. Battery, starting, and charging systems will be discussed as they relate to engine performance. 45 hours lecture and 81 hours laboratory. (Formerly AUT-52A) (Letter grade only.)

AUT-8B
Automotive Engine Performance 2 **4.00 units**
Prerequisite: AUT-8A and AUT-6A. Other: ASE A8 Certification (engine performance) and ASE A6 Certification (electrical systems)
Description: Prepares students to inspect, diagnose, and repair computer controlled systems found on modern automobiles. Powertrain and transmission control module operation and its effect on engine performance, transmission operation and emission controls are discussed. Emphasis placed on OBD II system operation, diagnosis and repair. 45 hours lecture and 81 hours laboratory. (Formerly AUT-56) (Letter grade only.)

AUT-8C
Automotive Emission Controls **4.00 units**
Prerequisite: AUT-6A and AUT-8A. Other: Current ASE certification in A6 (Electrical Systems) and Current ASE certification in A8 (Engine Performance)
Description: Prepares students to inspect, diagnose and repair automotive emission control systems. Emphasis place on 5 gas analysis, state emission laws, state license requirements and dynamometer operation. 45 hours lecture and 81 hours laboratory.(Formerly AUT-52B) (Letter grade only)

AUT-13A
Hybrid and Electric Vehicle Technology 1 **3.00 units**
Prerequisite: AUT-50 and AUT-6A.
Advisory: AUT-8A.
Description: Prepares students to inspect, service, diagnose, and repair hybrid and electric vehicle systems. Topics include: high voltage safety, hybrid and electric vehicle propulsion systems, battery technology, and peripheral systems used on hybrid and electric vehicles. Emphasis placed on safely working around and repairing high voltage systems. 36 hours lecture and 54 hours laboratory. (Formerly AUT-95) (Letter grade only)

AUT-13B
Advanced Hybrid and Electric Vehicle Technology **4.00 units**
Prerequisite: AUT-13A.
Description: Prepares students to service, diagnose, and repair high voltage systems found on modern hybrid and electric vehicles. Emphasis placed upon high voltage battery packs, propulsion systems, charging systems, and related hybrid/EV control systems. Intended for students and technicians who already have an understanding of hybrid and electric vehicle technology. 45 hours lecture and 81 hours laboratory. (Formerly AUT-96) (Letter grade only)

AUT-30
Ford Minor Services and Shop Practices **2.00 units**
Prerequisite: None.
Description: An introduction to auto shop safety, auto shop practices, automotive dealership operation and minor service of Ford, Lincoln/Mercury and Mazda vehicles, including wind noise and water leaks. Also includes an overview of the various career ladders and divisions of Ford Motor Company and dealership operations. The course prepares students for entry-level employment at Ford, Lincoln/Mercury and Mazda automotive dealerships. 27 hours lecture and 27 hours laboratory.(Letter grade only.)

AUT-40
Ford Electrical Systems - MLR (Maintenance and Light Repair) **4.00 units**
Prerequisite: None.
Description: This course presents the fundamentals of Ford Electrical system description, operation, diagnostic and repair. It includes the service of the stating, charging, battery, and chassis electrical systems. Additionally, this course emphasized the use of Ford specific methods and special equipment to diagnose and troubleshoot electrical system malfunctions. 54 hours lecture and 54 hours laboratory. (Letter grade only.)

AUT-41
Ford Advanced Electronics MLR **4.00 units**
Prerequisite: AUT-40 or successful completion of the Electrical Diagnosis and Repair Ford Mastery Exam.
Description: This course examines in-depth the operation of Ford automotive computer controls as they relate to specific electronic systems. Laboratory oscilloscopes, digital meters, and Fords advanced diagnostic tools will be used throughout the course. The emphasis of the course is to apply the acquired information to the computer systems found on Ford and Lincoln vehicles and to enable the students to diagnose and repair todays computer laden vehicles. 54 hours lecture and 54 hours laboratory.(Letter grade only.)

AUT-42
Ford Heating and Air Conditioning MLR **4.00 units**
Prerequisite: AUT-40 or Completion of the Electrical course work at any Ford/Lincoln Dealership.
Description: This course presents Ford climate control system operation and repair. Compressor service and refrigerant recovery and recycling are included. Emphasis will be placed on the diagnosis of climate control system performance concerns using Ford-approved test equipment. 54 hours lecture and 54 hours laboratory.(Letter grade only.)

AUT-43
Ford Automotive Brakes MLR **4.00 units**
Prerequisite: AUT-40 or Completion of the Electrical course work at any Ford/Lincoln Dealership.
Description: Principles of Ford brake system (hydraulic and electronic, with and without anti-lock) operation and repair, including brake system overhaul and machining operations. Emphasis will be placed on the diagnosis of brake system concerns using Fords test methods and equipment. 54 hours lecture and 54 hours laboratory.(Letter grade only.)

AUT-44
Ford Alignment, Steering and Suspension MLR **4.00 units**
Prerequisite: AUT-40 or Completion of the Electrical course work at any Ford/Lincoln Dealership.
Description: This course presents the fundamentals of Ford car and light truck suspension and steering system operation and repair, including base and electronically controlled systems. Wheel alignment service and tire balancing will also be covered. Emphasis will be placed on the diagnosis of steering and suspension system performance concerns using Ford testing methods and equipment. 54 hours lecture and 54 hours laboratory.(Letter grade only.)

AUT-45
Ford Automotive Chassis Systems MLR **4.00 units**
Prerequisite: None.
Description: This course presents the principles of operation, diagnosis, and repair of the brake system, the suspension and steering system, and the climate control system. The course content includes hydraulic, mechanical, and electronic operation and repair, as well as brake system overhaul and service operations. Additionally, it presents the fundamentals of suspension and steering system operation and repair, including base and electronically controlled systems. Wheel alignment service and tire balancing will also be covered. Furthermore, the course will include climate control fundamentals. Emphasis will be placed on the diagnosis of brake system concerns, as well as the diagnosis of steering and suspension system performance concerns, and climate control concerns using Ford testing methods and equipment. 54 hours lecture and 54 hours laboratory.(Letter grade or Pass/No Pass option.)

AUT-50
Automotive Principles **4.00 units**
CSU
Prerequisite: None.
Description: General theory, principles and service procedures relating to an introduction to automotive technology with emphasis being placed upon component identification, basic functions, minor maintenance and service. 63 hours lecture and 27 hours laboratory.(Letter grade only)

AUT-53B
Automotive Brakes **4.00 units**
Prerequisite: AUT-50.
Description: Theory and principles of automotive brake systems with emphasis placed upon malfunction, abnormal wear diagnosis, and correction procedures. 45 hours lecture and 81 hours laboratory.(Letter grade only.)

AUT-56
Automotive Computer Controls **4.00 units**
Prerequisite: AUT-52A or ASE Certification in engine performance or electrical systems.
Description: Theory and principles of automotive computer controlled systems. This course will include the diagnosis of computer systems and the repair with emphasis placed on related emission and electrical component evaluation. 36 hours lecture and 54 hours laboratory.(Letter grade only.)

AUT-58
Automotive Diesel Mechanics **4.00 units**
Prerequisite: None.
Description: This is an in-depth course in automotive diesel repair for students working toward a career in automotive diesel technology. It is designed to familiarize the student in the history, construction, operation and repair/adjustment of the operating components of the automotive diesel engine. 45 hours lecture and 81 hours laboratory.(Letter grade only.)

AUT-99
Auto Technology Internship **2.00 units**
Prerequisite: None.
Limitation on enrollment: Limited to students enrolled in corporate automotive programs.
Description: This class is designed to coordinate the students occupational on-the-job work experience in sponsored corporate automotive programs with related classroom instruction. 120 hours of volunteer work or 150 hours of paid work over 8 weeks.(Letter grade only.)

AUT-200
Automotive Work Experience **1.00 - 4.00 units**
CSU
Prerequisite: None.
Advisory: Students should have paid or voluntary employment.
Description: Work Experience is designed to coordinate the student's on-the-job training with workplace skills designed to assist the student in developing successful professional skills. Each student will establish measurable learning objectives appropriate for their job and discipline. Students may earn up to four (4) units each semester, for a maximum of 16 units of work experience total. 60 hours of volunteer work or 75 hours of paid work during the semester are required for each unit. No more than 20 hours per week, out of the 60 or 75 requirement, may be applied toward the work requirement. The course consists of an 18 hours of orientation/professional skills development and 60 hours of volunteer work experience per unit with a maximum of 240 for four units per semester OR 75 hours of paid work experience per unit, with a maximum of 300 for four units per semester.(Letter grade or Pass/No Pass option)

AUT-801
Ase Test Preparation-Engine Repair **0 units**
Prerequisite: None.
Description: ASE Test Preparation: Engine Repair is designed to prepare technicians and students to successfully complete the A1 Engine Repair ASE (Automotive Service Excellence) test. Technical content and test taking strategies will be presented. 18 hours lecture. (Pass/No Pass only)

AUT-802
Ase Test Preparation-Automatic Transmission/ Transaxle **0 units**
Prerequisite: None.
Description: ASE Test Preparation - Automatic Transmission/ Transaxle is designed to prepare technicians and students to successfully complete the A2 Automatic Transmission/Transaxle ASE (Automotive Service Excellence) exam. Technical content and test taking strategies will be presented. 18 hours lecture. (Pass/No Pass only)

AUT-803
Ase Test Preparation-Manual Drive Train and Axles **0 units**
Prerequisite: None.
Description: ASE Test Preparation - Manual Drive Train and Axles is designed to prepare technicians and students to successfully complete the A3 Manual Drive Train and Axles ASE (Automotive Service Excellence) exam. Technical content and test taking strategies will be presented. 18 hours lecture. (Pass/No Pass only)

AUT-804
ASE Test Preparation-Suspension and Steering **0 units**
Prerequisite: None.
Description: ASE Test Preparation - Suspension and Steering is designed to prepare technicians and students to successfully complete the A4 Suspension and Steering ASE (Automotive Service Excellence) exam. Technical content and test taking strategies will be presented. 18 hours lecture. (Pass/No Pass only)

AUT-805
ASE Test Preparation-Brakes **0 units**
Prerequisite: None.
Description: Prepares technicians and students to successfully complete the A5 Brakes ASE (Automotive Service Excellence) test. Technical content and test taking strategies will be presented. 18 hours lecture. (Pass/No Pass only)

AUT-806
ASE Test Preparation-Electrical/Electronic Systems **0 units**
Prerequisite: None.
Description: Prepares technicians and students to successfully complete the A6 Electrical/Electronic Systems ASE (Automotive Service Excellence) test. Technical content and test taking strategies will be presented. 18 hours lecture. (Pass/No Pass only)

AUT-807
ASE Test Preparation-Heating and Air Conditioning **0 units**
Prerequisite: None.
Description: Prepares technicians and students to successfully complete the A7 Heating and Air Conditioning ASE (Automotive Service Excellence) test. Technical content and test taking strategies will be presented. 18 hours lecture. (Pass/No Pass only)

AUT-808
ASE Test Preparation-Engine Performance **0 units**
Prerequisite: None.
Description: ASE Test Preparation- Engine Performance is designed to prepare technicians and students to successfully complete the A8 Engine Performance ASE (Automotive Service Excellence) test. Technical content and test taking strategies will be presented. 18 hours lecture. (Pass/No Pass only)

AUT-811
ASE Test Preparation-Advanced Engine Performance **0 units**
Prerequisite: None.
Description: ASE Test Preparation - Advanced Engine Performance is designed to prepare technicians and students to successfully complete the L1 Advanced Engine Performance ASE (Automotive Service Excellence) test. Technical content and test taking strategies will be presented. 36 hours lecture. (Pass/No Pass only)