

# COURSES

## AUTOMOTIVE

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### **AUT-116      Engine Repair      Lec 2   Lab 3   Clinic 0   Credit 3**

This course covers the 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 completion, students should be able to perform basic diagnosis, measurement and repair of automotive engines using appropriate tools, equipment, procedures, and service information.

**Co-Requisites:** None

**Pre-Requisites:** None

### **AUT-116A      Engine Repair Lab      Lec 0   Lab 3   Clinic 0   Credit 1**

This course is an optional lab to be used as an alternative to co-op placement in meeting the NATEF standards for total hours. Topics include diagnosis, inspection, adjustment, and repair of automotive engines using appropriate service information. Upon completion, students should be able to perform basic diagnosis, measurement and repair of automotive engines using appropriate tools, equipment, procedures, and service information.

**Co-Requisites:** AUT-116

**Pre-Requisites:** None

### **AUT-141      Suspension & Steering Systems      Lec 2   Lab 3   Clinic 0   Credit 3**

This course covers principles of operation, types, and diagnosis/repair of suspension and steering systems to include steering geometry. Topics include manual and power steering systems and standard and electronically controlled suspension and steering systems. Upon completion, students should be able to service and repair steering and suspension components, check and adjust alignment angles, repair tires, and balance wheels.

**Co-Requisites:** None

**Pre-Requisites:** None

### **AUT-151      Brake Systems      Lec 2   Lab 3   Clinic 0   Credit 3**

This course covers principles of operation and types, diagnosis, service, and repair of brake systems. Topics include drum and disc brakes involving hydraulic, vacuum boost, hydra-boost, electrically powered boost, and anti-lock and parking brake systems. Upon completion, students should be able to diagnose, service, and repair various automotive braking systems.

**Co-Requisites:** None

**Pre-Requisites:** None

### **AUT-163      Advanced Automotive Electricity      Lec 2   Lab 3   Clinic 0   Credit 3**

This course covers electronic theory, wiring diagrams, test equipment, and diagnosis, repair, and replacement of electronics, lighting, gauges, horn, wiper, accessories, and body modules. Topics include networking and module communication, circuit construction, wiring diagrams, circuit testing, and troubleshooting. Upon completion, students should be able to properly use wiring diagrams, diagnose, test, and repair wiring, lighting, gauges, accessories, modules, and electronic concerns.

**Co-Requisites:** None

**Pre-Requisites:** TRN-120

### **AUT-181      Engine Performance 1      Lec 2   Lab 3   Clinic 0   Credit 3**

This course covers the introduction, theory of operation, and basic diagnostic procedures required to restore engine performance to vehicles equipped with complex engine control systems. Topics include an overview of engine operation, ignition components and systems, fuel delivery, injection components and systems and emission control devices. Upon completion, students should be able to describe operation and diagnose/repair basic ignition, fuel and emission related driveability problems using appropriate test equipment/service information.

**Co-Requisites:** None

**Pre-Requisites:** None

### **AUT-212      Auto Shop Management      Lec 3   Lab 0   Clinic 0   Credit 3**

This course covers the principles of management essential to decision-making, communication, authority, and leadership. Topics include shop supervision, shop organization, customer relations, cost effectiveness and work place ethics. Upon completion, students should be able to describe basic automotive shop operation from a management standpoint.

**Co-Requisites:** None

**Pre-Requisites:** None

**AUT-221 Automatic Transmissions/Transaxles****Lec 2 Lab 3 Clinic 0 Credit 3**

This course covers operation, diagnosis, service, and repair of automatic transmissions/transaxles. Topics include hydraulic, pneumatic, mechanical, and electrical/electronic operation of automatic drive trains and the use of appropriate service tools and equipment. Upon completion, students should be able to explain operational theory, diagnose and repair automatic drive trains.

**Co-Requisites:** None**Pre-Requisites:** None**AUT-231 Manual Transmissions/Transaxles/Drive Trains****Lec 2 Lab 3 Clinic 0 Credit 3**

This course covers the operation, diagnosis, and repair of manual transmissions/transaxles, clutches, driveshafts, axles, and final drives. Topics include theory of torque, power flow, and manual drive train servicing and repair using appropriate service information, tools, and equipment. Upon completion, students should be able to explain operational theory, diagnose and repair manual drive trains.

**Co-Requisites:** None**Pre-Requisites:** None**AUT-281 Advanced Engine Performance****Lec 2 Lab 2 Clinic 0 Credit 3**

This course utilizes service information and specialized test equipment to diagnose and repair power train control systems. Topics include computerized ignition, fuel and emission systems, related diagnostic tools and equipment, data communication networks, and service information. Upon completion, students should be able to perform diagnosis and repair.

**Co-Requisites:** None**Pre-Requisites:** None