

# Automotive Technology (AUT)

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## **AUT 1000 Automotive Fundamentals ..... 4 Credit Hours**

**Equivalent:** AUT 1110

**ESL Placement Level:** For English-as-a-Second-Language (ESL) students, placement into ESL 2510 or higher.

The course covers how to identify and discuss major automotive systems, components and tools, using the correct terminology. The course will also explore the safe and efficient use of standard automotive tools and equipment during performance of basic automotive servicing procedures. Students will participate in discussions of various automotive employment opportunities and analyze the job entry requirements for each. Students are tested on the following Industry certifications: NC3-Precision Measuring Instruments; Battery Maintenance & Starting; ShopKey Pro Level1; and Torque Theory, Mechanical, and Electrical. **BILLABLE CONTACT HOURS: 5**

## **AUT 1100 Automotive Brake Systems Service .. 4 Credit Hours**

**Equivalent:** ATA 1100

**ESL Placement Level:** For English-as-a-Second-Language (ESL) students, placement into ESL 2510 or higher.

**Pre- or Corequisite:** AUT 1000

This course will cover the skills required to properly service the hydraulic brake system, utilizing hands-on training and work experience on licensed vehicles, developing entry-level job skills. The student will rebuild or renew all components of current major automotive manufacturers' brake systems with an emphasis on safe and proper work habits and procedures. **BILLABLE CONTACT HOURS: 5**

## **AUT 1200 Front Suspension & Steering Service ..... 4 Credit Hours**

**Equivalent:** ATA 1200

**ESL Placement Level:** For English-as-a-Second-Language (ESL) students, placement into ESL 2510 or higher.

**Pre- or Corequisite:** AUT 1000

This course will develop the skills required to properly service the front suspension and steering system of current model vehicles. A great portion of class time will be spent in the lab rebuilding or renewing all components of the suspension and steering systems. Wheel alignment measurement and correction will be performed by all students on all major automotive equipment, with an emphasis on safe and proper work habits and procedures. **BILLABLE CONTACT HOURS: 5**

## **AUT 1300 Automotive Electrical Systems Servicing ..... 4 Credit Hours**

**Equivalent:** ATA 1300 | TEA 1160

**ESL Placement Level:** For English-as-a-Second-Language (ESL) students, placement into ESL 2510 or higher.

**Pre- or Corequisite:** AUT 1000 or consent of instructor.

This course will develop the skills required to service the battery, cranking system, charging system, and electrical accessories systems of all current major automobile manufacturers' vehicles. Theory of the systems as well as hands-on training will provide job entry-level job skills for the student. Current manufacturers' specifications as well as safe and proper work habits and procedures will be emphasized. **BILLABLE CONTACT HOURS: 5**

## **AUT 1350 Automotive Advanced Electrical and Electronics ... 4 Credit Hours**

**ESL Placement Level:** For English-as-a-Second-Language (ESL) students, placement into ESL 2510 or higher.

**Prerequisite:** AUT 1000 and AUT 1300

This course develops the skills required to diagnose and service electrical/electronic components. The student will be instructed through a variety of methodologies and instruction to promote discussions related to advanced theories and diagnosis. Advanced training aids and diagnostic tools will be used to enhance knowledge. Multiple vehicles and manufacturer systems will be utilized for advanced troubleshooting; as well as hands-on experience using licensed vehicles. The student will develop advanced-level job skills in diagnosing and repairing malfunctions in the vehicle systems, with an emphasis on safe and proper work practices and procedures. **BILLABLE CONTACT HOURS: 5**

## **AUT 1375 Automotive Hybrid and Electric Vehicles ..... 4 Credit Hours**

**ESL Placement Level:** For English-as-a-Second-Language (ESL) students, placement into ESL 2510 or higher.

**Prerequisite:** AUT 1000 and AUT 1300

This course provides an understanding of high voltage hybrid and electric vehicle designs, operation, and servicing. Students will learn the components and systems used in hybrid and electric vehicles including high voltage batteries, motor/generators, power inverters, and charging systems. Specialized high voltage tools and equipment will be introduced including high voltage insulation gloves, digital multimeters, and isolation test meters. Proper diagnosis and servicing procedures will be covered with an emphasis on safety, high voltage disabling and enabling, and loss of high voltage isolation handling. **BILLABLE CONTACT HOURS: 5**

## **AUT 1400 Engine Support Systems Servicing ... 4 Credit Hours**

**Equivalent:** ATA 1400 | TEA 1110

**ESL Placement Level:** For English-as-a-Second-Language (ESL) students, placement into ESL 2510 or higher.

**Prerequisite:** AUT 1000 and AUT 1300 or Consent of Instructor.

This course will develop the skills required to properly service the engine fuel, lubrication, cooling, exhaust and valve systems. A great portion of the class time will be spent in the laboratory performing tests, as well as repairing and renewing major components of the above named systems. The student will make adjustments, and replace components in accordance with manufacturers' specifications, with a major emphasis on developing safe and proper work habits and techniques. **BILLABLE CONTACT HOURS: 5**

## **AUT 1500 Automotive Tune-Up & Emissions Service ..... 4 Credit Hours**

**Equivalent:** ATA 1500 | TEA 1140

**ESL Placement Level:** For English-as-a-Second-Language (ESL) students, placement into ESL 2510 or higher.

**Prerequisite:** AUT 1000 and AUT 1300 or consent of instructor.

**Pre- or Corequisite:** AUT 1400

This course will develop the skills required to properly tune an engine and diagnose the amount of emissions the engine produces. The student will also calibrate, make adjustments, and renew or replace components of the ignition and emission systems in accordance with the manufacturers' specifications. The student will also diagnose drive-ability concerns related to engine performance and emissions. Current ignition analysis equipment as well as infrared and other emissions measuring devices and equipment will be used in a safe and proper manner. **BILLABLE CONTACT HOURS: 5**

**AUT 1600 Automotive Transmission Servicing . 4 Credit Hours**

**Equivalent:** ATA 1600

**ESL Placement Level:** For English-as-a-Second-Language (ESL) students, placement into ESL 2510 or higher.

**Prerequisite:** AUT 1000 or consent of instructor.

**Pre- or Corequisite:** AUT 1300

This course will develop the skills required to perform service operations on all current major automobile manufacturers' automatic transmissions. A major portion of the class time will be spent in the laboratory performing tests, making adjustments, renewing or replacing various components of the transmissions. Manufacturer's specifications and procedures as well as safe and proper work habits will be greatly emphasized. BILLABLE CONTACT HOURS: 5

**AUT 1700 Manual Transmission and Axle Service ..... 4 Credit Hours**

**Equivalent:** ATA 1700

**ESL Placement Level:** For English-as-a-Second-Language (ESL) students, placement into ESL 2510 or higher.

**Prerequisite:** AUT 1000 or consent of instructor.

This course will develop the skills required to service all current major automobile manufacturers' manual transmissions and rear axles. Servicing procedures will include diagnosis, removal and replacement, and rebuilding of the clutch, transmission, drive shaft and the rear axle. Manufacturers' specifications and procedures as well as safe and proper work habits will be emphasized. BILLABLE CONTACT HOURS: 5

**AUT 1800 Automotive Air Conditioning & Heating Service ..... 4 Credit Hours**

**Equivalent:** ATA 1800

**ESL Placement Level:** For English-as-a-Second-Language (ESL) students, placement into ESL 2510 or higher.

**Prerequisite:** AUT 1000 or consent of instructor.

**Pre- or Corequisite:** AUT 1300

This course will develop the skills required to service all major automobile manufacturers' current model heating and air conditioning systems. Theory of the systems as well as work experience on licensed vehicles will be included. The student will develop entry-level job skills in diagnosing and repairing malfunctions in the systems, with an emphasis on safe and proper work habits and procedures. BILLABLE CONTACT HOURS: 5

**AUT 1900 Light Duty Diesel Engine Operation and Diagnostics ..... 4 Credit Hours**

**ESL Placement Level:** For English-as-a-Second-Language (ESL) students, placement into ESL 2510 or higher.

**Prerequisite:** AUT 1000 and AUT 1300 or consent of instructor.

This course will develop the skills required to properly diagnose and service diesel engines for major manufacturers' current model options. Diesel engine mechanical operation, fuel system operation and emissions component operation will be discussed. The student will diagnose concerns related to diesel mechanical, fuel and emissions systems. This course introduces proper testing techniques for fuel components; such as low pressure fuel pump, high pressure common rail fuel pump, solenoid-type and piezoelectric injectors. Glow plug and air intake heater testing as well as DOC, FPF and SCR procedures will be discussed. BILLABLE CONTACT HOURS: 5

**AUT 2000 Cooperative Internship ..... 3 Credit Hours**

**Equivalent:** IND 1403 | IND 1403

**ESL Placement Level:** For English-as-a-Second-Language (ESL) students, placement into ESL 2510 or higher.

**Prerequisite:** Completion of 24 Automotive (AUT) credits. Consent of Instructor.

The student will be employed in the automotive servicing industry in a supervised situation under the guidance of a coordinator. The student will identify and describe, through reports and position papers, technical problems encountered on the job. Students will complete a minimum of 135 hours. BILLABLE CONTACT HOURS: 3

**AUT 2100 Automotive Servicing Special Topics 2 Credit Hours**

**ESL Placement Level:** For English-as-a-Second-Language (ESL) students, placement into ESL 2510 or higher.

**Prerequisite:** Consent of instructor.

This course is designed to allow students the opportunity to earn industry related certifications outside of a traditional full course. Instructor authorization is needed to register. BILLABLE CONTACT HOURS: 3

**AUT 2111 Automotive Servicing Special Topics 2 Credit Hours**

**ESL Placement Level:** For English-as-a-Second-Language (ESL) students, placement into ESL 2510 or higher.

**Prerequisite:** Consent of instructor.

This course is designed to allow students the opportunity to earn industry related certifications outside of a traditional full course. Instructor authorization is needed to register. BILLABLE CONTACT HOURS: 3

**AUT 2112 Automotive Servicing Special Topics 2 Credit Hours**

**ESL Placement Level:** For English-as-a-Second-Language (ESL) students, placement into ESL 2510 or higher.

**Prerequisite:** Consent of instructor.

This course is designed to allow students the opportunity to earn industry related certifications outside of a traditional full course. Instructor authorization is needed to register. BILLABLE CONTACT HOURS: 3

**AUT 2115 Automotive Servicing Special Topics 2 Credit Hours**

**ESL Placement Level:** For English-as-a-Second-Language (ESL) students, placement into ESL 2510 or higher.

**Prerequisite:** Consent of instructor.

This course is designed to allow students the opportunity to earn industry related certifications outside of a traditional full course. Instructor authorization is needed to register. BILLABLE CONTACT HOURS: 3

**AUT 2125 Automotive Servicing Special Topics 2 Credit Hours**

**ESL Placement Level:** For English-as-a-Second-Language (ESL) students, placement into ESL 2510 or higher.

**Prerequisite:** Consent of instructor.

This course is designed to allow students the opportunity to earn industry related certifications outside of a traditional full course. Instructor authorization is needed to register. BILLABLE CONTACT HOURS: 3