

# COURSES

## AUTOMOTIVE TECHNOLOGY COURSES

### AUTO A1 - Engine Repair

#### 4 units

An in depth study of engines: mechanical, measurement, and assembly. A study of the above mentioned components including theory, teardown, evaluate, qualifying, and rebuilding. This class' emphasis is on engines. Students are encouraged to enroll in Automotive Lab concurrently. 36 hours lecture, 108 hours laboratory. Transfer: CSU.

**Prerequisite:** AUTO INTR with a minimum grade of C (May be taken concurrently) or NAUT INTR with a minimum grade of C (May be taken concurrently) or AUTO INTL with a minimum grade of C (May be taken concurrently) and AUTO INTZ with a minimum grade of C (May be taken concurrently).

- Credit - Degree Applicable
- Grading Option: Letter or P/NP

### AUTO A2 - Automatic Transmission/Transaxle

#### 4 units

An in depth study of engine, transmission, transaxles: mechanical, measurement, and assembly. An in-depth study of the above mentioned components including theory, teardown, evaluate, qualifying, and rebuilding. Students are encouraged to enroll in Automotive Lab concurrently. 36 hours lecture, 108 hours laboratory. Transfer: CSU.

**Prerequisite:** AUTO INTR with a minimum grade of C (May be taken concurrently) or NAUT INTR with a minimum grade of C (May be taken concurrently) or AUTO INTL with a minimum grade of C (May be taken concurrently) and AUTO INTZ with a minimum grade of C (May be taken concurrently).

- Credit - Degree Applicable
- Grading Option: Letter or P/NP

### AUTO A3 - Manual Drive Train and Axles

#### 4 units

An in-depth study of rear axle, front axle, and transfer cases: mechanical, measurement, and assembly. Including theory, teardown, qualifying, and rebuilding. Students are encouraged to enroll in Automotive Lab concurrently. 36 hours lecture, 108 hours laboratory. Transfer: CSU.

**Prerequisite:** AUTO INTR with a minimum grade of C (May be taken concurrently) or NAUT INTR with a minimum grade of C (May be taken concurrently) or AUTO INTL with a minimum grade of C (May be taken concurrently) and AUTO INTZ with a minimum grade of C (May be taken concurrently).

- Credit - Degree Applicable
- Grading Option: Letter or P/NP

### AUTO A4 - Suspension and Steering

#### 4 units

Diagnosis, evaluation, testing, adjustment, alignment and repair of steering and suspension systems. Including all common automotive steering and suspension systems both car and truck. Future systems will also be covered. Students are strongly recommended to enroll in Automotive Lab concurrently. 36 hours lecture, 108 hours laboratory. Transfer: CSU.

**Prerequisite:** AUTO INTR with a minimum grade of C (May be taken concurrently) or NAUT INTR with a minimum grade of C (May be taken concurrently) or AUTO INTL with a minimum grade of C (May be taken concurrently) and AUTO INTZ with a minimum grade of C (May be taken concurrently).

- Credit - Degree Applicable
- Grading Option: Letter or P/NP

### AUTO A5 - Brakes

#### 4 units

Diagnosis, evaluation, inspection, adjustment, and repair of braking, antilock braking systems, traction control and related devices. Class will involve California State law regarding brake and safety inspections. Includes the material on the California Brake Adjuster's Licensing Examination. Students are strongly recommended to enroll in Automotive Lab concurrently. 36 hours lecture, 108 hours laboratory. Transfer: CSU.

**Prerequisite:** AUTO INTR with a minimum grade of C (May be taken concurrently) or NAUT INTR with a minimum grade of C (May be taken concurrently) or AUTO INTL with a minimum grade of C (May be taken concurrently) and AUTO INTZ with a minimum grade of C (May be taken concurrently).

- Credit - Degree Applicable
- Grading Option: Letter or P/NP

### AUTO A6 - Electrical/Electronic Systems

#### 5 units

Automotive electrical/electronic systems, including electrical circuits, Ohm's Law, battery, starting, charging, ignition, fuel, accessories, brakes, chassis, suspension, steering, HVAC, and wiring systems. Emphasis on diagnosis of electrical troubles, assembly, repair of components, and diagnostic equipment usage. Students are strongly recommended to enroll in Automotive Lab concurrently. 54 hours lecture, 108 hours laboratory. Transfer: CSU.

**Prerequisite:** AUTO INTR with a minimum grade of C (May be taken concurrently) or NAUT INTR with a minimum grade of C (May be taken concurrently) or AUTO INTL with a minimum grade of C (May be taken concurrently) and AUTO INTZ with a minimum grade of C (May be taken concurrently).

- Credit - Degree Applicable
- Grading Option: Letter or P/NP

### AUTO A7 - Automotive Heating and Air Conditioning

#### 4 units

Diagnosing, evaluation, testing, adjustment, and repair of heating, ventilation and air conditioning (HVAC). Includes heat and energy, psychometrics, air flow, refrigerant recycling, equipment and controls. Student will be prepared to pass a nationally recognized HVAC certificate program, required by all California HVAC repair shops. Students are strongly recommended to enroll in Automotive Lab concurrently. 36 hours lecture, 108 hours laboratory. Transfer: CSU.

**Prerequisite:** AUTO INTR with a minimum grade of C (May be taken concurrently) or NAUT INTR with a minimum grade of C (May be taken concurrently) or AUTO INTL with a minimum grade of C (May be taken concurrently) and AUTO INTZ with a minimum grade of C (May be taken concurrently).

- Credit - Degree Applicable
- Grading Option: Letter or P/NP

### AUTO A8 - Engine Performance

#### 5 units

Principals of automotive fuel induction, ignition and emission control systems, including inspection, diagnosis and repair of fuel and emission control systems/components governed by federal and state laws and standards. Electrical diagnosis of emission control systems. Relation of chassis and body systems to emissions. Students are strongly recommended to enroll in Automotive Lab concurrently. 54 hours lecture, 108 hours laboratory. Transfer: CSU.

**Prerequisite:** AUTO INTR with a minimum grade of C (May be taken concurrently) or NAUT INTR with a minimum grade of C (May be taken concurrently) or AUTO INTL with a minimum grade of C (May be taken concurrently).

concurrently) and AUTO INTZ with a minimum grade of C (May be taken concurrently).

- Credit - Degree Applicable
- Grading Option: Letter or P/NP

### AUTO A9 - Light Vehicle Diesel Engines

#### 4 units

An in depth study of diesel engines: mechanical, measurement, and assembly. A study of the above mentioned components including theory, teardown, evaluate, qualifying, and rebuilding. Diesel engine performance including emissions, turbos, exhaust and intake systems. This class's emphasis is on diesel engines and diesel engine performance/emissions. Students are encouraged to enroll in Automotive Lab concurrently. 36 hours lecture, 108 hours laboratory. Transfer: CSU.

**Prerequisite:** AUTO INTR with a minimum grade of C (May be taken concurrently) or NAUT INTR with a minimum grade of C (May be taken concurrently) and AUTO INTZ with a minimum grade of C (May be taken concurrently).

- Credit - Degree Applicable
- Grading Option: Letter or P/NP

### AUTO C1 - Automobile Service Consultant

#### 3 units

Automotive Service Consultant fundamentals including: Communications, customer service, legal documents, business interactions, billing, parts and labor guides, shop management applications, shop operations, sales, vehicle identification and systems operations. Course content is aligned with tasks identified by Automotive Service Excellence (ASE) certification. 54 hours lecture. Transfer: CSU.

- Credit - Degree Applicable
- Grading Option: Letter or P/NP

### AUTO INTL - Automotive Service and Introduction Hands-On Lab

#### 2 units

This is the Lab section that can only be taken if you are also taking INTZ. Bumper-to-Bumper Automotive Knowledge. Starting with hazardous waste handling, tool identification, maintenance and lubrication, moving into engine mechanical, emissions controls, suspension systems, air conditioning, airbags and safety, transmissions, axles, and finishing off with the future of the automotive industry. This is an introductory class for people who want to know more about their vehicle or who are planning an automotive career. 108 hours laboratory. Transfer: CSU.

**Corequisite:** AUTO INTZ.

- Credit - Degree Applicable
- Grading Option: Letter or P/NP

### AUTO INTR - Automotive Service and Introduction

#### 4 units

Bumper-to-Bumper Automotive Knowledge. Starting with hazardous waste handling, tool identification, maintenance and lubrication, moving into engine mechanical, emissions controls, suspension systems, air conditioning, airbags and safety, transmissions, axles, and finishing off with the future of the automotive industry. This is an introductory class for people who want to know more about their vehicle or who are planning an automotive career. 36 hours lecture, 108 hours laboratory. Transfer: CSU.

- Credit - Degree Applicable
- Grading Option: Letter or P/NP

### AUTO INTZ - Automotive Service and Introduction Lecture

#### 2 units

This class is lecture only, AUTO INTL must also be taken concurrently. Bumper-to-Bumper Automotive Knowledge. Starting with hazardous waste handling, tool identification, maintenance, and lubrication, moving into engine mechanical, emissions controls, suspension systems, air conditioning, airbags and safety, transmissions, axles, and finishing off with the future of the automotive industry. This is an introductory class for people who want to know more about their vehicle or who are planning an automotive career. 36 hours lecture. Transfer: CSU.

**Corequisite:** AUTO INTL.

- Credit - Degree Applicable
- Grading Option: Letter or P/NP

### AUTO LABA - Automotive Lab

#### 2 units

Automotive Lab is an open laboratory class for basic automotive students. This class is for students desiring to expand their hands-on experience using their own vehicle. Instructor will provide technical and supervisory support to guide students in completion of their self initiated projects. Service information via computer service manuals will be available for students to use for vehicle information and research. 108 hours laboratory.

**Prerequisite:** AUTO INTR with a minimum grade of C (May be taken concurrently) or NAUT INTR with a minimum grade of C (May be taken concurrently) and AUTO INTL with a minimum grade of C (May be taken concurrently) and AUTO INTZ with a minimum grade of C (May be taken concurrently). Transfer: CSU.

- Credit - Degree Applicable
- Grading Option: Letter or P/NP

### AUTO LABB - Automotive Lab Advanced

#### 2 units

Automotive Lab Advanced is an open laboratory class for advanced automotive students. This class is for students desiring to expand their hands-on experience using their own vehicle. Instructor will provide technical and supervisory support to guide students in completion of their self initiated projects. Students are expected to help others in class and be able to work without guidance. Service information via computer service manuals will be available for students to use for vehicle information and research. Class is recommended for second year students only. 108 hours laboratory. Transfer: CSU.

**Prerequisite:** AUTO LABA with a minimum grade of C or NAUT LABA with a minimum grade of C. AUTO INTR with a minimum grade of C or NAUT INTR with a minimum grade of C or AUTO INTL with a minimum grade of C (May be taken concurrently) and AUTO INTZ with a minimum grade of C (May be taken concurrently).

- Credit - Degree Applicable
- Grading Option: Letter or P/NP

### AUTO LABC - Automotive Lab Specialized Bench Work

#### 2 units

Automotive Lab Specialized Bench Work is an open laboratory class for automotive students. This class is for students desiring to expand their hands-on experience using shop equipment. This class specializes in rebuilding automotive parts. The instructor will provide technical and supervisory support to guide students in the completion of their self-initiated projects. Service information via computer service manuals will be available for students to use for vehicle information and research. Class is recommended for second year students only. 108 hours laboratory. Transfer: CSU.

**Prerequisite:** AUTO INTR with a minimum grade of C (May be taken concurrently) or NAUT INTR with a minimum grade of C (May be taken concurrently) or AUTO INTL with a minimum grade of C (May be taken concurrently) and AUTO INTZ with a minimum grade of C (May be taken concurrently).

- Credit - Degree Applicable
- Grading Option: Letter or P/NP

## AUTO LABD - Automotive Lab Specialized Electronic Work

### 2 units

Automotive Lab Specialized Electronic Work is an open laboratory class for automotive students. This class is for students desiring to expand their hands-on experience using shop equipment. This class specializes in electronics work. This includes accessories, EV, hybrid, and aftermarket electrical. The instructor will provide technical and supervisory support to guide students in the completion of their self-initiated projects. Service information via computer service manuals will be available for students to use for vehicle information and research. 108 hours laboratory. Transfer: CSU.

**Prerequisite:** AUTO INTR with a minimum grade of C (May be taken concurrently) or NAUT INTR with a minimum grade of C (May be taken concurrently) or AUTO INTL with a minimum grade of C (May be taken concurrently) and AUTO INTZ with a minimum grade of C (May be taken concurrently).

- Credit - Degree Applicable
- Grading Option: Letter or P/NP

## AUTO L1 - Advanced Engine Performance

### 5 units

Continuation of Automotive Technology A6 and A8 with an emphasis on diagnosis of electronic problems including computer controlled circuits/ systems using schematics, diagnostic procedures and equipment. Students are strongly recommended to enroll in Automotive Lab concurrently. 54 hours lecture, 108 hours laboratory. Transfer: CSU.

**Prerequisite:** AUTO A6 with a minimum grade of C (May be taken concurrently) or NAUT A6 with a minimum grade of C (May be taken concurrently) or AUTO A8 with a minimum grade of C (May be taken concurrently).

- Credit - Degree Applicable
- Grading Option: Letter or P/NP

## AUTO L1L2 - Smog Level One and Level Two

### 5.5 units

This course includes classes/modules the State of California's requires for a student/automotive technician to be prepared to take their Smog License Test. This class will include Level One and Level Two smog training only. At the end of the class students may or may not qualify for either EI or EO smog license. See [www.smogcheck.ca.gov](http://www.smogcheck.ca.gov) for more information. 90 hours lecture, 27 hours laboratory. Transfer: CSU.

- Credit - Degree Applicable
- Grading Option: Letter or P/NP

## AUTO L3 - Light Duty Hybrid/Electric Vehicles

### 4 units

A study in the history, current and future of alternative fuels, hybrids and electric vehicles in the automotive industry. Emphasis in shop safety, hazardous waste handling, high voltage electrical precautions, basic engine construction of hybrids, battery storage systems, fuel storage systems, compressed natural gas, liquid propane gas, bio-diesel and hydrogen cell technology. Students are strongly recommended to enroll in Automotive Lab concurrently. 36 hours lecture, 108 hours laboratory. Transfer: CSU.

**Prerequisite:** AUTO INTR with a minimum grade of C (May be taken concurrently) or NAUT INTR with a minimum grade of C (May be taken concurrently) or AUTO INTL with a minimum grade of C (May be taken concurrently) and AUTO INTZ with a minimum grade of C (May be taken concurrently).

- Credit - Degree Applicable
- Grading Option: Letter or P/NP

## AUTO P1 - Powertrains: Modifications for Performance

### 4 units

An in-depth study of engine and transmission modifications made in order to improve performance. This class will explain the differences in laws governing vehicles in all fifty states including those registered in California; how to improve performance legally; and the penalties of breaking the law. Students will learn to calculate the benefit versus cost of bolt-on performance products and major engine or transmission modifications. NOTE: Some modifications are intended for off-road applications only. Students are encouraged to enroll in Automotive Lab concurrently. 54 hours lecture, 54 hours laboratory. Transfer: CSU.

**Prerequisite:** AUTO INTR with a minimum grade of C (May be taken concurrently) or NAUT INTR with a minimum grade of C (May be taken concurrently) or AUTO INTL with a minimum grade of C (May be taken concurrently) and AUTO INTZ with a minimum grade of C (May be taken concurrently).

- Credit - Degree Applicable
- Grading Option: Letter or P/NP

## AUTO SDR - Specified Diagnostic and Repair

### 5 units

This is a Bureau of Automotive Repair approved alternative to the ASE A6, A8 and L1 certification required for obtaining and maintaining smog technician licenses. This course will follow BAR guidelines for smog license prep. Student may or may not qualify for license exam after taking this class. For more information see [www.smogcheck.ca.gov](http://www.smogcheck.ca.gov). 72 hours lecture, 54 hours laboratory. Transfer: CSU.

- Credit - Not Degree Applicable
- Grading Option: Letter or P/NP