

## AUTO - Automotive Technology Courses

### AUTO B3 Fundamentals of Automotive Management and Services

4 units

**Prerequisite:** Successful completion of AUTO B10 or equivalent with a grade of C or better or may be taken concurrently.

**Description:** The course covers critical knowledge and skills necessary to prepare traditional and non-traditional students for employment in four positions within the service management operations of automotive dealerships/businesses and shops. The positions are: 1) Service Writer/Adviser, 2) Parts-Sales and Service (Parts Counter Person), 3) Warranty Specialist and 4) DMV Specialist.

**Hours:** 54 lecture, 54 lab

**Transferable:** CSU and private colleges.

### AUTO B10 Automotive Safety

1 unit

**Description:** This course offers the students the knowledge and awareness they need to stay safe as they work in the automotive industry. Upon successful completion of this course student will receive a certificate of completion certifying that they have been safety trained in compliance with federal mandates. This course is required for all automotive students. Not open to students who have previously received credit for AUTO B1AB, AUTO B15, AUTO B2A, AUTO B2B, AUTO B75A, AUTO B14, AUTO B64, AUTO B112, or AUTO B106.

**Hours:** 18 lecture

**Transferable:** Not transferable. Not degree applicable.

### AUTO B11 Introduction to Automotive Technology

4 units

**Prerequisites:** Successful completion of AUTO B10 with a grade of C or better or may be taken concurrently.

**Recommended:** BC placement into reading level 06.

**Description:** This is an introductory automotive course that provides students with theory, knowledge, and skills necessary to understand the basic engine, drive-train, and other support systems. The lab component of the class will focus on general inspection procedures, maintenance and light repair work that is common in automotive, agricultural and industrial applications. Demonstrated lecture, simulated problem diagnosis and practical application on "live" vehicles will be used. Prepares students for Automotive Maintenance and Light Repair (G1) ASE exam. This course is a prerequisite to most of the automotive courses. Not open to students who have previously received credit for AUTO B1AB.

**Hours:** 54 lecture, 54 lab

**Transferable:** Not transferable. Degree applicable.

### AUTO B20 Engine Theory, Design and Diagnosis

4 units

**Prerequisites:** Successful completion of AUTO B11 with a grade of C or better.

**Description:** This course offers the student the advanced skills required for accurate diagnosis and repair of internal combustion engines. The theory and construction of gasoline and diesel engines found in automotive, agricultural and industrial applications will be covered. Demonstrated lecture, simulated problem diagnosis and practical application on "live" vehicles will be used. Students are encouraged, but not required, to supply their own project. Preparation for the ASE A1 and A8 exams will be covered. Not open to students who have previously received credit for AUTO B2A.

**Hours:** 54 lecture, 54 lab

**Transferable:** Not transferable. Degree applicable.

### AUTO B21 Upper Engine Systems and Machining

4 units

**Prerequisites:** Successful completion of AUTO B20 with a grade of C or better.

**Description:** This course offers the student the advanced skills required for accurate repair and machining of the cylinder head and valvetrain systems in gasoline and diesel engines found in automotive, agricultural and industrial applications. Demonstrated lecture, simulated problem diagnosis and practical application on "live" vehicles will be used. Students are encouraged, but not required, to supply their own project. Preparation for the ASE A1 and A8 exams will be covered. Not open to students who have previously received credit for AUTO B2A.

**Hours:** 54 lecture, 54 lab

**Transferable:** Not transferable. Degree applicable.

### AUTO B22 Lower Engine Systems and Machining

5 units

**Prerequisites:** Successful completion of AUTO B21 with a grade of C or better.

**Description:** This course offers the student the advanced skills required for accurate repair and machining of the cylinder block, crankshaft and connecting rods in gasoline and diesel engines found in automotive, agricultural and industrial applications. Demonstrated lecture, simulated problem diagnosis and practical application on "live" vehicles will be used. Students are encouraged, but not required, to supply their own project. Preparation for the ASE A1 and A8 exams will be covered. Not open to students who have previously received credit for AUTO B2B.

**Hours:** 72 lecture, 54 lab

**Transferable:** Not transferable. Degree applicable.

### AUTO B23 Engine Assembly and Performance

4 units

**Prerequisites:** Successful completion of AUTO B22 with a grade of C or better.

**Description:** This class offers the student the application of engine overhaul theory and repair procedures, including reassembly, initial startup and tuning of gasoline and diesel engines found in automotive, agricultural and industrial applications. Advanced engine theory, design, practical and theoretical high performance modifications are all part of this course. Demonstrated lecture, simulated problem diagnosis and practical application on "live" vehicles will be used. Students are encouraged, but not required, to supply their own project. Preparation for the ASE A1 and A8 exams will be covered. Not open to students who have previously received credit for AUTO B2B.

**Hours:** 54 lecture, 54 lab

**Transferable:** Not transferable. Not degree applicable.

### AUTO B30 Electrical and Electronic Systems

4 units

**Prerequisites:** Successful completion of AUTO B11 with a grade of C or better.

**Description:** This is an introductory electrical course that provides students with theory, knowledge, and skills necessary to understand electrical flow and electronic concepts. Instruction is

given and lab experience provided which will enable students to successfully perform diagnostics and repair on basic electrical and electronic circuits found in automotive, agricultural and industrial applications. Demonstrated lecture, simulated problem diagnosis and practical application on “live” vehicles will be used. Preparation for the ASE A6 and California State Lamp Adjuster examination will be covered. Not open to students who have previously received credit for AUTO B14.

**Hours:** 54 lecture, 54 lab

**Transferable:** Not transferable. Degree applicable.

### **AUTO B31 Advanced Electrical and Electronic Systems**

*5 units*

**Prerequisites:** Successful completion of AUTO B30 with a grade of C or better.

**Description:** This is an advanced course that provides students with theory, knowledge, and skills necessary to understand advanced automotive electronic diagnostic and repair concepts. Instruction is given and lab experience provided which will enable students to successfully perform diagnostics, pinpoint tests, and employ advanced circuit test strategies on electrical and electronic circuits. Demonstrated lecture, simulated problem diagnosis and practical application on “live” vehicles will be used. The course prepares students for the A-6 and L3 ASE exams. Not open to students who have previously received credit for AUTO B14.

**Hours:** 72 lecture, 54 lab

**Transferable:** Not transferable. Degree applicable.

### **AUTO B33 Engine Performance**

*4 units*

**Prerequisites:** Successful completion of AUTO B20 with a grade of C or better.

**Description:** This course offers the student the skills required for accurate diagnosis and repair of fuel, emission, and engine management systems related to engine performance. The theory and construction of engine performance systems found in automotive, agricultural and industrial applications will be covered. Demonstrated lecture, simulated problem diagnosis and practical application on “live” vehicles will be used. The course prepares students for the A-8 engine performance ASE exam. Not open to students who have previously received credit for AUTO B15.

**Hours:** 54 lecture, 54 lab

**Transferable:** Not transferable. Degree applicable.

### **AUTO B34 Advanced Engine Performance**

*5 units*

**Prerequisites:** Successful completion of AUTO B33 with a grade of C or better.

**Description:** This course offers the student the advanced skills required for accurate diagnosis and repair of fuel, emission, and engine management systems related to engine performance. The theory and construction of advanced engine performance systems found in automotive, agricultural and industrial applications will be covered. Demonstrated lecture, simulated problem diagnosis and practical application on “live” vehicles will be used. The course prepares students for the A-8 and L1 ASE exams. Not open to students who have previously received credit for AUTO B15.

**Hours:** 72 lecture, 54 lab

**Transferable:** Not transferable. Degree applicable.

### **AUTO B36 Light Duty Diesel Performance**

*4 units*

**Prerequisites:** Successful completion of AUTO B33 with a grade of

C or better.

**Description:** This course offers the student the advanced skills required for accurate diagnosis and repair of diesel engines. The theory and construction of diesel engine systems found in automotive, agricultural and industrial applications will be covered. Students will also study various manufacturers’ engine platforms and examine how diesel power and performance is achieved. Demonstrated lecture, simulated problem diagnosis and practical application on “live” vehicles will be used. The course prepares students for the A9 and L2 ASE exams.

**Hours:** 54 lecture, 54 lab

**Transferable:** Not transferable. Degree applicable.

### **AUTO B39 Level 1 and Level 2 Smog Inspector Training**

*4 units*

**Prerequisites:** Successful completion of AUTO B10 with a grade of C or better.

**Description:** This is a Bureau of Automotive Repair certified course which includes Level 1 and Level 2 certificate training. The Level 1 (L1) Engine and Emission Control training is intended to provide students with fundamental knowledge of engine and emission control theory, design, and operation. The Level 2 (L2) Smog Check Training is intended to provide students with the knowledge, skills, and abilities needed to perform Smog Check inspections. Students who successfully pass both Level 1 and Level 2 training courses will have met the eligibility requirements to take the Smog Check Inspector State License examination.

**Hours:** 54 lecture, 54 lab

**Transferable:** Not transferable. Degree applicable.

### **AUTO B40 Suspension, Steering and Wheel Alignment**

*4 units*

**Prerequisites:** Successful completion of AUTO B11 or AUTO B30 with a grade of ‘C’ or better.

**Description:** This course provides the students with theory, knowledge, and skills necessary to accurately diagnose and repair suspension and steering systems. Instruction is given and lab experience provided for removal, disassembly, inspection, re-assembly, installation and wheel alignment of suspension and steering systems found in automotive, agricultural and industrial applications. Demonstrated lecture, simulated problem diagnosis and practical application on “live” vehicles will be used. The course prepares students for ASE A-4 Suspension and Steering Systems Certification exam. Not open to students who have previously received credit for AUTO B106.

**Hours:** 54 lecture, 54 lab

**Transferable:** Not transferable. Degree applicable.

### **AUTO B43 Brake Systems**

*4 units*

**Prerequisites:** Successful completion of AUTO B11 or AUTO B30 with a grade of C or better.

**Description:** This course provides the students with theory, knowledge, and skills necessary to accurately diagnose and repair brake systems on passenger cars, light trucks, and heavy duty applications. Instruction is given and lab experience provided for removal, disassembly, inspection, re-assembly, precision measurement, machining, and installation of braking systems found in automotive, agricultural and industrial applications. Demonstrated lecture, simulated problem diagnosis and practical application on “live” vehicles may be used. The course prepares students for the A-5 Brake ASE and California state Brake Adjuster Certification examination. Not open to students who have

previously received credit for AUTO B106.

**Hours:** 54 lecture, 54 lab

**Transferable:** Not transferable. Degree applicable.

### **AUTO B46 Automatic Transmissions**

*5 units*

**Prerequisites:** Successful completion of AUTO B11 or AUTO B30 with a grade of C or better.

**Description:** This is an advanced level course that provides the students with theory, knowledge, and skills necessary to accurately diagnose and repair automatic transmissions and transaxles. Instruction is given and lab experience provided for removal, disassembly, inspection, re-assembly and installation of transmissions and transaxles found in automotive, agricultural and industrial applications. Demonstrated lecture, simulated problem diagnosis and practical application on “live” vehicles will be used. Prepares students for ASE A-2 Automatic Transmission and Transaxle Certification examination. Not open to students who have previously received credit for AUTO B112.

Hours: 72 lecture, 54 lab

Transferable: Not transferable. Degree applicable.

### **AUTO B48 Manual Transmissions and Drivetrain**

*4 units*

**Prerequisites:** AUTO B11 or AUTO B46 with a grade of ‘C’ or better.

**Description:** This is an advanced level course that provides the students with theory, knowledge, and skills necessary to accurately diagnose and repair manual transmissions and drivetrains. Instruction is given and lab experience provided for removal, disassembly, inspection, re-assembly and installation of manual transmissions and drivetrains found in automotive, agricultural and industrial applications. Demonstrated lecture, simulated problem diagnosis and practical application on “live” vehicles will be used. Prepares students for ASE A-3 Manual Drive Train and Axles Certification examination.

**Hours:** 54 lecture, 54 lab

**Transferable:** Not transferable. Degree applicable.

### **AUTO B48WE Occupational Work Experience Education/Internship**

*1-8 units*

**Prerequisites:** Declared major or occupational goal and evaluation of student’s qualifications and objectives.

**Description:** College credit for automotive technology related learning experiences obtained on the job in accordance with a training plan developed cooperatively between the employer, college, and student. Occupational work experience credit may accrue at the rate of 1 to 8 units per semester for a total of sixteen units, and students must work 75 paid hours or 60 non-paid hours per unit. Repetition allowed per Title 5 55253.

**Hours:** Non-paid 60 hours for each 1 unit (60-480). Paid 75 hours for each 1 unit (75-600).

**Transferable:** Not transferable. Degree applicable.

### **AUTO B49 Automotive Air Conditioning**

*4 units*

**Prerequisites:** Successful completion of AUTO B10 with a grade of C or better.

**Description:** This course offers the student the skills required for accurate service, diagnosis and repair of heating and air conditioning systems. The theory and construction of heating and air conditioning systems found in automotive, agricultural and industrial applications will be covered. Demonstrated lecture,

simulated problem diagnosis and practical application on “live” vehicles will be used. Preparation for the ASE A7 and T7 exams will be covered.

**Hours:** 54 lecture, 54 lab

**Transferable:** Not transferable. Degree applicable.