



Automotive

Degree

Automotive Technology, Associate of Science

Certificates

Auto Engine Overhaul and Repair,
Certificate of Achievement

Auto Tune-Up and Emission,
Certificate of Achievement

Automotive Heating, Ventilation & Air Conditioning,
Certificate of Achievement

Automotive Management,
Certificate of Achievement

Automatic Transmissions,
Certificate of Achievement

Brake Systems, Certificate of Achievement

Electrical and Electronic Systems,
Certificate of Achievement

Engine Overhaul and Repair,
Certificate of Achievement

Engine Performance,
Certificate of Achievement

Light Duty Diesel Performance,
Certificate of Achievement

Manual Drivetrain and Axles,
Certificate of Achievement

Suspension and Steering,
Certificate of Achievement

Automotive Management,
Job Skills Certificate

Auto Engine Overhaul*

Certificate of Achievement

This program develops student's knowledge and skills in the areas of automotive and light truck engine overhaul and machining procedures. Program includes instruction in theory of operation, diagnostic, and repair procedures.

To Achieve the Certificate of Achievement

Upon completion of the following courses with at least a 'C' grade in each course, the student will be awarded an Auto Engine Overhaul Certificate of Achievement.

Program Learning Outcomes

Upon successful completion, the student will:

- demonstrate proficiency in technical skills and safety principles required for industrial employment..
- demonstrate problem solving skills used in industrial design and product development.
- demonstrate a deep understanding of the core material required for transfer to a four-year university degree program or for certification in the department programs.

Career Opportunities:

Automotive Technician, Steering Technician.

*** NOTE: This Certificate of Achievement is being replaced by: "Engine Overhaul and Repair." (page 96) Consult with department for more information.**

Total Units: 23-24

Required Courses — Day Students

Course #	Title	Units
AUTO B2A	Engine Repair & Machining	9.0
AUTO B2B	Advanced Engine Repair & Machining	9.0
INDT B10	Occupational Readiness (or equivalent)	3.0

Required Courses — Night Students

Course #	Title	Units
AUTO B75A	Introduction to Engine Overhaul	3.0
AUTO B75B	Engine Repair Techniques	3.0
AUTO B75C	Advanced Engine Overhaul	3.0
AUTO B75D	Advanced Engine Machining	3.0
INDT B10	Occupational Readiness (or equivalent)	3.0

Electives — for a total of at least 23 units

Course #	Title	Units
AUTO B1AB	Introduction to Automotive Technology	4.0
AUTO B14	Auto Tune-Up: Electrical/ Ignition/Accessories	11.0
AUTO B15	Auto Tune-Up:Fuel Systems and Emission Control	11.0
AUTO B64	Automotive Electricity and Electronics	4.0
AUTO B61	Basic & Enhanced Area Clean Air Car Course	4.0
AUTO B112	Automotive Transmissions and Gear Boxes	9.0
INDT B275	Special Problems in Automotive Technology	2.0
WELD B1A	Introduction to Oxygen Acetylene Welding and Cutting	2.0
WELD B1B	Introduction to the Welding Processes	2.0

Auto Tune-Up and Emission*

Certificate of Achievement

This program develops student's knowledge and skills in the areas of automotive and light truck tune-up and emission control systems. Program includes instruction in theory of ignition, fuel, and computer control systems as well as emission test procedures and complete diagnostic and repair procedures.

To Achieve the Certificate of Achievement

Upon completion of the following courses with at least a 'C' grade in each course, the student will be awarded an Auto Tune-Up and Emissions Systems Certificate of Achievement.

Program Learning Outcomes

Upon successful completion, the student will:

- demonstrate proficiency in technical skills and safety principles required for industrial employment.
- demonstrate problem solving skills used in industrial design and product development.
- demonstrate a deep understanding of the core material required for transfer to a four-year university degree program or for certification in the department programs.

*** NOTE: This Certificate of Achievement is being replaced. Consult with department for more information.**

Total Units: 26

Required Courses

Course #	Title	Units
AUTO B14	Auto Tune-Up: Electrical/ Ignition/Accessories	11.0
AUTO B15	Auto Tune-Up:Fuel Systems and Emission Control	11.0
INDT B10	Occupational Readiness (or equivalent)	3.0

Electives — for a total of at least 26 units

Course #	Title	Units
AUTO B59	Automotive Air Conditioning	4.0
AUTO B64	Automotive Electricity and Electronics	4.0
AUTO B61	Basic & Enhanced Area Clean Air Car Course	4.0
AUTO B75A	Introduction to Engine Overhaul or	3.0
AUTO B2A	Engine Repair & Machining	9.0
ELET B1	Basic Electronics (DC and AC)	4.0
ENGL B50	Introduction to College Composition	4.0
INDT B275	Special Problems in Automotive Technology	2.0

Automotive Technology Associate of Science Degree

The Associate in Science in Automotive Technology is designed to prepare students for optimal success in higher education and technical careers in an environment that will encourage a lifelong pursuit of learning. Completers are prepared to become ASE Certified in a variety of subjects ranging from General Service, Licensed Smog Technician, Engine Rebuilding, Transmission Repair, Brakes, Alignment, Diesel Service, Automotive HVAC and many more. Teaching and learning strategies will include student-centered, competency-based, and hands-on instruction. In addition, the program will set in place quality customer/technician and employer/employee relationship skills to assure workplace and educational competencies have been met. Upon completion of the associate's degree program, graduates will be eligible for entry level employment at automotive, agricultural and commercial equipment dealerships and independent repair facilities. Graduates have the potential to work in management and other related areas of service operations.

Program Learning Outcomes

Upon successful completion, the student will:

- demonstrate proficiency in technical skills and safety principles required for industrial employment.
- demonstrate their ability to assess, evaluate and solve problems common to automotive, industrial, and agricultural industries.
- demonstrate a thorough understanding of the core material required for transfer to a four year university or certification in the department programs.

Career Opportunities:

Automotive Technician, Automotive Brakes Technician

Total Units: 36

Required Courses - 24 Units

Course #	Name	Units
AUTO B20	Engine Theory, Design and Diagnosis	4.0
AUTO B21	Upper Engine Systems and Machining	4.0
AUTO B30	Electrical and Electronic Systems	4.0
AUTO B33	Engine Performance	4.0
AUTO B40	Suspension, Steering, and Wheel Alignment	4.0
AUTO B43	Brake Systems	4.0

Elective Courses (select 12 units from the following):

AUTO B3	Fundamentals of Automotive Management and Services	4.0
AUTO B22	Lower Engine Systems and Machining	5.0
AUTO B23	Engine Assembly and Performance	5.0
AUTO B31	Advanced Electrical and Electronic Systems	5.0
AUTO B34	Advanced Engine Performance	5.0
AUTO B36	Light Duty Diesel Performance	4.0
AUTO B39	Level 1 and Level 2 Smog Inspector Training	4.0
AUTO B46	Automatic Transmissions	5.0
AUTO B48	Manual Transmissions and Drivetrain	4.0
AUTO B49	Automotive Heating and Air Conditioning	4.0

Automatic Transmissions Certificate of Achievement

The Automatic Transmission Certificate signifies that the student has developed skills in the diagnosis, repair of various types of automatic transmissions found in automotive, agriculture and industrial applications. Students can implement the skills developed in these courses in performance shops, independent repair shops, dealerships, construction companies, agriculture companies, government agencies, etc.

Students earning this certificate will be prepared to further pursue certification through ASE in the A2 area.

Program Learning Outcomes

Upon successful completion, the student will:

- demonstrate proficiency in technical skills and safety principles required for employment in the automatic transmission rebuilding industry.
- demonstrate their ability to assess, evaluate and solve problems common to automatic transmission repair in the automotive, industrial, and agricultural industries.
- demonstrate a thorough understanding of the core material of automatic transmission rebuilding required for transfer to a four year university or certification in the department programs.

Career Opportunities:

Automotive Technician, Automotive Transmission Technician, Industrial Mechanic.

Total Units: 13

Required Courses

Course #	Name	Units
AUTO B11	Introduction to Automotive Technology	4.0
AUTO B30	Electrical and Electronic Systems	4.0
AUTO B46	Automatic Transmissions	5.0

Automotive Heating & Air Conditioning Certificate of Achievement

The Automotive Heating and Air Conditioning Certificate signifies that the student has developed skills in the diagnosis and repair of various types of heating and air conditioning systems found in automotive, agriculture and industrial applications. Students can implement the skills developed in these courses in dealerships, independent repair shops, performance shops, construction companies, agriculture companies, government agencies, etc.

Students earning this certificate will be prepared to further pursue certification through ASE in the A7, T7, H7, and S7 areas as well as MACS certification under Section 609 of the Clean Air Act.

Program Learning Outcomes

Upon successful completion, the student will:

- demonstrate proficiency in technical skills and safety principles required for employment in the automotive heating and air conditioning industry.
- demonstrate their ability to assess, evaluate and solve automotive heating and air conditioning problems common to automotive, industrial, and agricultural industries.
- demonstrate a thorough understanding of the core material automotive heating and air conditioning required for transfer to a four year university or certification in the department programs.

Career Opportunities:

Automotive Technician, Automotive HVAC Technician.

Total Units: 17

Required Courses

Course #	Name	Units
AUTO B11	Introduction to Automotive Technology	4.0
AUTO B30	Electrical and Electronic Systems	4.0
AUTO B31	Advanced Electrical and Electronic Systems	5.0
AUTO B49	Automotive Air Conditioning	4.0

Automotive Management Certificate of Achievement

The Automotive Management Certificate signifies that the student has developed the knowledge and skills to seek entry level employment in the customer service areas found in automotive, agriculture and industrial applications. Students can implement the skills developed in these courses in parts distribution, the Department of Motor Vehicles (DMV), dealerships, independent repair shops, performance shops, construction companies, agriculture companies, government agencies, etc.

Students earning this certificate will be prepared to further pursue certification through ASE in the C1, P2, and P4 areas.

Program Learning Outcomes

Upon successful completion, the student will:

- demonstrate proficiency in technical skills and safety principles required for employment in the automotive management industry.
- demonstrate their ability to assess, evaluate and solve automotive management problems common to automotive, industrial, and agricultural industries.
- demonstrate a thorough understanding of the core automotive management material required for transfer to a four year university or certification in the department programs.

Career Opportunities:

Automotive Technician, Automotive Service Writer, Automotive Service Manager.

Total Units: 12.5

Required Courses

Course #	Name	Units
AUTO B3	Fundamentals of Automotive Management and Services	4.0
AUTO B10	Automotive Safety	.5
AUTO B11	Introduction to Automotive Technology	4.0
COMP B5	Introduction to Microsoft Office	3.0
STDV B1	Educational Planning	1.0

Brake System Certificate of Achievement

The Brakes Certificate signifies that the student has developed skills in the diagnosis and repair of various types of brake systems found in automotive, agriculture and industrial applications. Students can implement the skills developed in these courses in dealerships, independent repair shops, performance shops, construction companies, agriculture companies, government agencies, etc.

Students earning this certificate will be prepared to further pursue certification through ASE in the A5, T4, H4, and S4 areas as well as certification for the Brake Adjuster License.

This program prepares students for careers in Transportation Industry and Automotive Industry. The focus of the Automotive Department as a whole is to equip students with the necessary knowledge and technical skills to successfully enter the workforce in the automotive industry, transportation industry, agriculture industry, and other related industrial and mechanical fields. This certificate will equip students to perform service, diagnosis, and repair on brake systems in the above listed industries.

Program Learning Outcomes

Upon successful completion, the student will:

- demonstrate proficiency in technical skills and safety principles required for employment in the transportation and related industries performing brake system work.
- demonstrate their ability to assess, evaluate and solve brake systems problems common to automotive, industrial, and agricultural industries.
- demonstrate a thorough understanding of the core brake systems material required for transfer to a four year university or certification in the department programs.

Career Opportunities:

Automotive Technician, Automotive Brakes Technician

Total Units: 12

Required Courses

Course #	Name	Units
AUTO B11	Introduction to Automotive Technology	4.0
AUTO B30	Electrical and Electronic Systems	4.0
AUTO B43	Brake Systems	4.0

Electrical and Electronic Systems Certificate of Achievement

The Electrical and Electronic Systems Certificate signifies that the student has developed skills in the diagnosis and repair of various types of electrical and electronic systems found in automotive, agriculture and industrial applications. Students can implement the skills developed in these courses in dealerships, independent repair shops, performance shops, construction companies, agriculture companies, government agencies, etc.

Students earning this certificate will be prepared to further pursue certification through ASE in the A6, T6, H6, S6, and L3 areas as well as certification for the Lamp Adjuster License.

Program Learning Outcomes

Upon successful completion, the student will:

- demonstrate proficiency in technical skills and safety principles required for employment in the transportation and related industries performing electrical and electronic repair work.
- demonstrate their ability to assess, evaluate and solve problems common to electrical and electronic repair in the automotive, industrial, and agricultural industries.
- demonstrate a thorough understanding of the core material of electrical and electronic systems required for transfer to a four year university or certification in the department programs.

Career Opportunities:

Automotive Technician, Automotive Electronics Technician

Total Units: 13

Required Courses

Course #	Name	Units
AUTO B11	Introduction to Automotive Technology	4.0
AUTO B30	Electrical and Electronic Systems	4.0
AUTO B31	Advanced Electrical and Electronic Systems	5.0

Engine Overhaul and Repair Certificate of Achievement

The Engine Overhaul and Repair Certificate signifies that the student has developed skills in the diagnosis, repair and machining of various types of internal combustion engines, including gas and diesel engines found in automotive, agriculture and industrial applications. Students can implement the skills developed in the engine rebuilding courses in engine machine shops, performance shops, dealerships, construction companies, agriculture companies, government agencies, etc.

Students earning this certificate will be prepared to further pursue certification through ASE (Automotive Service Excellence) in the A1, A8, H1, H2, S2, T1, T2 areas as well as certification through the Automotive Engine Rebuilders Association (AERA).

This program prepares students for careers in Automotive, Transportation, Agricultural, Oilfield and Construction Industries. The focus of the Automotive Department as a whole is to equip students with the necessary knowledge and technical skills to successfully enter the workforce in the automotive industry, transportation industry, agriculture industry, and other related industrial and mechanical fields. This certificate will equip students to perform service, diagnosis, and repair of various types of internal combustion engines, including gas and diesel engines, in the above listed industries. This certificate also provides necessary training for students to pursue certification in many areas through ASE and AERA.

Program Learning Outcomes

Upon successful completion, the student will:

- demonstrate proficiency in technical skills and safety principles required for employment in the engine rebuilding industry.
- demonstrate their ability to assess, evaluate and solve problems common to engine repair in the automotive, industrial and agricultural industries.
- demonstrate a thorough understanding of the core material of engine repair required for transfer to a four year university or certification in the department programs.

Career Opportunities:

Automotive Technician, Engine Repair Technician, Industrial Engine Technician, Industrial Mechanic

Total Units: 18

Required Courses

Course #	Name	Units
AUTO B20	Engine Theory, Design and Diagnosis	4.0
AUTO B21	Upper Engine Systems and Machining	4.0
AUTO B22	Lower Engine Systems and Machining	5.0
AUTO B23	Engine Assembly and Performance	5.0

Engine Performance Certificate of Achievement

The Engine Performance Certificate signifies that the student has developed skills in the diagnosis and repair of various types of fuel, emission, and computer controlled systems found in automotive, agriculture and industrial applications. Students can implement the skills developed in the these courses in dealerships, independent repair shops, performance shops, construction companies, agriculture companies, government agencies, etc.

Students earning this certificate will be prepared to further pursue certification through ASE (Automotive Service Excellence) in the A8 and L1 areas as well as certification for the BAR (California Bureau of Automotive Repair) Specified Diagnostic and Repair training.

This program prepares students for careers in Transportation Industry and Automotive Industry. The focus of the Automotive Department as a whole is to equip students with the necessary knowledge and technical skills to successfully enter the workforce in the automotive industry, transportation industry, agriculture industry, and other related industrial and mechanical fields. This certificate will equip students to perform service, diagnosis, and repair of fuel and emission systems in the above listed industries. This certificate also provides necessary training for students to obtain their California State Smog Repair License.

Program Learning Outcomes

Upon successful completion, the student will:

- demonstrate proficiency in technical skills and safety principles required for employment in the transportation and related industries performing engine performance work.
- demonstrate their ability to assess, evaluate and solve engine performance problems common to automotive, industrial, and agricultural industries.
- demonstrate a thorough understanding of the core engine performance material required for transfer to a four year university or certification in the department programs.

Career Opportunities:

Automotive Technician, Smog Technician.

Total Units: 17

Required Courses

Course #	Name	Units
AUTO B20	Engine Theory, Design and Diagnosis	4.0
AUTO B30	Electrical and Electronic Systems	4.0
AUTO B33	Engine Performance	4.0
AUTO B34	Advanced Engine Performance	5.0

Light Duty Diesel Performance Certificate of Achievement

The Light Duty Diesel Performance Certificate signifies that the student has developed skills in the diagnosis and repair of various types of diesel engine, fuel, and emission systems found in automotive, agriculture and industrial applications. Students can implement the skills developed in these courses in dealerships, independent repair shops, performance shops, construction companies, agriculture companies, government agencies, etc. Students earning this certificate will be prepared to further pursue certification through ASE in the A9 and L2 areas.

This program prepares students for careers in Transportation Industry and Automotive Industry. This is a strong and growing area of the automotive repair industry especially in Bakersfield and the surrounding areas where many diesel vehicles are used for private use, work in the oil fields, agriculture industry, and other transportation fields.

Program Learning Outcomes

Upon successful completion, the student will:

- demonstrate proficiency in technical skills and safety principles required for employment in the transportation and related industries performing diesel performance work.
- demonstrate their ability to assess, evaluate and solve diesel performance problems common to automotive, industrial, and agricultural industries.
- demonstrate a thorough understanding of the core diesel performance material required for transfer to a four year university or certification in the department programs.

Career Opportunities:

Automotive Technician, Diesel Technician.

Total Units: 16

Required Courses

Course #	Name	Units
AUTO B20	Engine Theory, Design and Diagnosis	4.0
AUTO B30	Electrical and Electronic Systems	4.0
AUTO B33	Engine Performance	4.0
AUTO B36	Light Duty Diesel Performance	4.0

Manual Drivetrain and Axles Certificate of Achievement

The Manual Drivetrain and Axles Certificate signifies that the student has developed skills in the diagnosis, repair of various types of manual transmissions and drive axles found in automotive, agriculture and industrial applications. Students can implement the skills developed in these courses in performance shops, independent repair shops, dealerships, construction companies, agriculture companies, government agencies, etc. Students earning this certificate will be prepared to further pursue certification through ASE in the A3 area.

This program prepares students for careers in Transportation Industry and Automotive Industry. The focus of the Automotive Program as a whole is to equip students with the necessary knowledge and technical skills to successfully enter the workforce in the automotive industry, transportation industry, agriculture industry, and other related industrial and mechanical fields. This certificate will equip students to perform manual transmission and drive axle service, diagnosis, and repair in the above listed industries.

Program Learning Outcomes

Upon successful completion, the student will:

- demonstrate proficiency in technical skills and safety principles required for employment in the manual transmission and drive axle rebuilding industry.
- demonstrate their ability to assess, evaluate and solve problems common to manual transmission and drive axle repair in the automotive, industrial, and agricultural industries.
- demonstrate a thorough understanding of the core material of manual transmission and drive axle rebuilding and repair required for transfer to a four year university or certification in the department programs.

Career Opportunities:

Automotive Technician, Automotive Transmission Technician, Industrial Mechanic

Total Units: 12

Required Courses

Course #	Name	Units
AUTO B11	Introduction to Automotive Technology	4.0
AUTO B30	Electrical and Electronic Systems	4.0
AUTO B48	Manual Transmissions and Drivetrain	4.0

Suspension and Steering Certificate of Achievement

The Suspension and Steering Certificate signifies that the student has developed skills in the diagnosis, repair of various types of suspension and steering systems found in automotive, agriculture and industrial applications. Students can implement the skills developed in these courses in performance shops, independent repair shops, dealerships, construction companies, agriculture companies, government agencies, etc. Students earning this certificate will be prepared to further pursue certification through ASE in the A4, H5, S5, and T5 areas.

This program prepares students for careers in Transportation Industry and Automotive Industry. The focus of the Automotive Department as a whole is to equip students with the necessary knowledge and technical skills to successfully enter the workforce in the automotive industry, transportation industry, agriculture industry, and other related industrial and mechanical fields. This certificate will equip students to perform service, diagnosis, and repair on steering and suspension systems in the above listed industries.

Program Learning Outcomes

Upon successful completion, the student will:

- demonstrate proficiency in technical skills and safety principles required for employment in the transportation and related industries performing suspension and steering work.
- demonstrate their ability to assess, evaluate and solve problems common to suspension and steering system repair in the automotive, industrial, and agricultural industries.
- demonstrate a thorough understanding of the core suspension and steering system material required for transfer to a four year university or certification in the department programs.

Career Opportunities:

Automotive Technician, Steering Technician.

Total Units: 12

Required Courses

Course #	Name	Units
AUTO B11	Introduction to Automotive Technology	4.0
AUTO B30	Electrical and Electronic Systems	4.0
AUTO B40	Suspension, Steering and Wheel Alignment	4.0

Automotive Management Job Skills Certificate

This program develops the student's knowledge and basic skills to seek entry level employment in the automotive services industry. These include a general technical knowledge of the automobile and light truck; automotive service writing including California legal requirements set forth by the Bureau of Automotive Repair; customer satisfaction including telephone and face-to-face interpersonal communications skills; handling warranty claims and documentation; DMV documentation and processing; use and understanding of general office keyboarding skills, and automotive parts sales and stocking systems.

Career opportunities include automotive repair front desk, occupations requiring a general technical knowledge of the automobile and light truck, automotive service writing including California legal requirements set forth by the Bureau of Automotive Repair, handling warranty claims, DMV documentation and processing, automotive parts sales and stocking systems.

To Achieve the Job Skills Certificate

Upon completion of the following courses with at least a 'C' grade in each course, the student will be awarded an Automotive Management Job Skills Certificate.

Program Learning Outcomes

Upon successful completion, the student will:

- understand shop and office personal safety and environmental hazards related to the automotive industry.
- understand how to write service repair orders using both written and computerized formats.
- demonstrate proper telephone and interpersonal communication skills.
- have knowledge of and practice in creating DMV documentation and processing.
- understand California consumer protection laws and the Bureau of Automotive Repairs regulations.
- have knowledge and practice of accepted work ethics in the automotive repair business.
- have knowledge of the automotive parts handling systems and sales techniques.
- have knowledge and practice of handling consumer warranty claims and documentation.

Total Units: 14

Required Courses

Course #	Title	Units
AUTO B1AB	Introduction to Automotive Technology	4.0
AUTO B3	Fundamentals of Automotive Management and Services	4.0
INDT B10	Occupational Readiness (or equivalent)	3.0
COMP B5	Introduction to Microsoft Office	3.0