AUTOMOTIVE TECHNOLOGY

The automotive technology curriculum provides for entry level skills in the automotive field. The program is designed to impart in-depth technical skills as required in today's highly technical automotive field. It prepares students for employment in the automotive and/or transportation trades. For those currently employed, upgrading and specialization skills will be stressed. The major emphasizes practical experience in actual repairs under simulated shop conditions. The program offers two introductory courses that are recommended for all students: AUTO 99 Introduction to Automotive Technology is a lecture class that can be taken face-to-face or fully online. AUTO 100 is a laboratory class that demonstrates how to perform basic services. Students must select one of these courses before taking AUTO 120.

Program Learning Outcomes
Upon successful completion of this program, students will be able to:
- Demonstrate and practice standardized safety and hazardous waste handling practices.
- Diagnose and repair engine mechanical and ignition problems utilizing a variety of diagnostic and repair equipment.
- Evaluate vehicle emission equipment and accurately perform a full smog inspection.
- Diagnose and repair vehicles that fail smog inspections.
- Read and interpret automotive electrical wiring diagrams to aid in the diagnosis of automotive electrical problems.
- Following prescribed industry standards, correctly utilize test equipment and tools to diagnose and repair automotive electrical systems.
- Independently demonstrate ability to perform computer system and fuel system service using related diagnostic equipment.
- Evaluate technical service bulletins for assisting in repairing various drivability concerns.
- Utilize communication skills to effectively deal with disgruntled colleagues in your work place.
- Utilize good customer relations techniques to improve customer satisfaction.
- Correctly adhere to BAR regulations involving writing repair order estimates, revising estimates, and final invoicing.
- Independently apply technical training and skill sets learned at school in an actual automotive repair shop environment.

CAREER OPPORTUNITIES
Auto Electrician
Auto Parts Salesperson
Automotive Air Conditioning Technician
Brake and Front-End Technician
Computerized Engine Control Specialist
Engine Machinist
General Repair Technician
High Performance and Racing Specialist
Licensed Smog Technician
Manufacturer Service Engineer
Service Advisor
Service Manager
Technical Instructor
Technical Sales Representative
Transmission Technician
Tune-up Technician

I. AUTOMOTIVE TECHNOLOGY

Associate in Science Degree Requirements

Course	Title	Units
AUTO 120	Engine Performance I - Mechanical and Ignition Systems	5
AUTO 122	Automotive Electrical Systems	5
AUTO 123	Engine Performance II - Fuel Systems Emission Systems	5
AUTO 127	Advanced Automotive Electrical Systems	5
AUTO 130	Automotive Brakes and Brake License	5
AUTO 180	Automotive Service Advisor	1
AUTO 182	Automotive Work Experience	3
		29

Select two of the following:

AUTO 124	Engine Performance III - Drivability	5
AUTO 129	Introduction to Hybrid, Electric and Alternative Fueled Vehicles	5
AUTO 140	Four-Wheel Alignment	5
AUTO 152	Drive Train Systems	4
AUTO 160	Air Conditioning and Heating Systems	3
		7-10

Select one of the following:

AUTO 135	Advanced Brakes	5
AUTO 141*	Emission Control License Fundamentals Level I Inspector Training	3
AUTO 142*	Emission License Procedures Level II Inspector Training	2
AUTO 145	Advanced Four-Wheel Alignment	5
AUTO 155	Advanced Drive Train Systems	4
AUTO 165	Advanced Air Conditioning and Heating Systems	3
AUTO 170	Engine Overhaul	5
AUTO 175	Advanced Engine Overhaul	5
AUTO 176	Engine Machining	5
		2-5
	Total Required	38-44
	Plus General Education Requirements	

Certificate of Achievement
Students who complete only the major requirements above qualify for a Certificate in Automotive Technology. An official request must be filed with the Admissions and Records Office prior to the deadline as stated in the Academic Calendar.

*Please read the course recommended preparation for AUTO 141 and 142. Most students should take both classes.

II. AUTOMOTIVE TECHNOLOGY–ADVANCED ENGINE PERFORMANCE AND EMISSIONS

Program Learning Outcomes
Upon successful completion of this certificate, students will be able to:
- Demonstrate and practice standardized safety and hazardous waste handling practices
- Diagnose and repair engine mechanical and ignition problems utilizing a variety of diagnostic and repair equipment.
- Evaluate vehicle emission equipment and accurately perform a full smog inspection.
- Diagnose and repair vehicles that fail smog inspections.
- Read and interpret automotive electrical wiring diagrams to aid in the diagnosis of automotive electrical problems.
- Using prescribed industry standards, correctly utilize test equipment and tools to diagnose and repair automotive electrical systems.
- Independently demonstrate ability to perform computer system and fuel system service using related diagnostic equipment.
- Evaluate technical service bulletins to assist in repair of various drivability concerns.

Certificate Requirements:

Course	Title	Units
AUTO 120	Engine Performance I - Mechanical and Ignition Systems	5
AUTO 122	Automotive Electrical Systems	5
AUTO 123	Engine Performance II - Fuel Systems Emission Systems	5
AUTO 124	Engine Performance III - Drivability	5
AUTO 141	Emission Control License Fundamentals Level I Inspector Training	3
AUTO 142	Emission License Procedures Level II Inspector Training	2
	Total Required	25

Certificate of Achievement
Students who complete the requirements above qualify for a Certificate in Automotive Technology–Advanced Engine Performance and Emissions. An official request must be filed with the Admissions and Records Office prior to the deadline as stated in the Academic Calendar.

III. AUTOMOTIVE TECHNOLOGY–ASCCA

The Automotive Service Councils of California Association (ASCCA) sponsored degree program offers a unique, on-the-job training opportunity to those students who are accepted. Training includes all National Automotive Technicians Education Foundation (NATEF) certification areas for Master Technician Certification. Students will be required to further their studies in an ASCCA-sponsoring dealership as a paid, work experience technician. This program requires an application, a sponsor relationship with an ASCCA repair dealer, or affiliated member business of the association. Successful students will gain over 1000 hours of documented and evaluated paid work experience relating to the learning objectives of the program, Automotive Service Excellence master certifications, and California Smog Inspector and Repair Technician training licensing.

Program Learning Outcomes
Upon successful completion of this program, students will be able to:
- Perform technical and competent repairs, and professional level diagnosis and descriptions of necessary repairs, of various vehicles and designed systems, for independent dealerships and other affiliated businesses.
- Diagnose analytically, service and maintain automobiles using recommended procedures, special tools, and service publications, and demonstrate knowledge by properly describing cause, effect, and costs to consumers.
- Graduate and continue university education, and advance in position as an automotive technician, service manager, business owner, engineer, or desired career goals, and by additional experience and education demonstrate capability to master new technology systems and components as they are introduced, and become a leader in the transportation industry.
- Provide customer service and business management expertise by attending various required ASCCA meetings, college courses, and training seminars to promote the ethics standards of the association, and other affiliated professional organizations and businesses.

Associate in Science Degree Requirements:

Course	Title	Units
AUTO 099	Introduction to Automotive Technology	3
or		
AUTO 100	Introduction to Automotive Technology Lab	1
AUTO 122	Automotive Electrical Systems	5
AUTO 123	Engine Performance II Emissions Systems	5
AUTO 129	Introduction to Hybrid Electric Vehicles	5
AUTO 130	Automotive Brakes and Brake License	5
AUTO 140	Four Wheel Alignment	5
AUTO 141	Emission Control License Fundamentals Level I Inspector Training	3
AUTO 142	Emission License Procedures Level II Inspector Training	2
AUTO 182*	Automotive Work Experience	12
	Total Required	43-45
	Plus General Education Requirements	

*Note: Automotive work experience classes are from 1 to 4 credit units per semester.

IV. AUTOMOTIVE TECHNOLOGY–ASEP

The General Motors sponsored ASEP degree program offers a unique job training opportunity to those students who are accepted. Training includes all systems of the sponsoring manufacturers' automobiles. In addition, students will be required to further their studies in a sponsoring dealership as a paid (work experience) technician. Students who test low in English, reading or math assessment scores (and are accepted into the program) will be required to take remedial courses in those areas in addition to the general education courses. Students who have previous college credit or an associate degree or higher may be exempt from all or part of the general education requirements; please see a counselor.

Program Learning Outcomes

Upon successful completion of this program, students will be able to:

- Demonstrate and practice standardized safety and hazardous waste handling practices.
- Describe the work flow processes utilized by new car dealership service departments.
- Perform lubrication maintenance service and minor maintenance services.
- Perform service repair and diagnosis of vehicle suspension, steering and brake systems utilizing a variety of tools and equipment.
- Retrieve manufacturers' repair data and specifications and utilize this information for accurate diagnosis and repair.
- Following prescribed industry guidelines, diagnose, remove, repair and replace automatic and manual transmissions and transaxles.
- Perform engine repairs to prescribed industry standards.
- Following prescribed industry standards, accurately measure and perform various machining processes on engine components.
- Diagnose and repair engine mechanical and ignition problems utilizing a variety of diagnostic and repair equipment.
- Independently demonstrate ability to perform computer system and fuel system service using related diagnostic equipment.
- Evaluate technical service bulletins for assisting in repairing various drivability concerns.
- Independently demonstrate ability to perform electronic engine diagnostics on both gasoline and diesel engines.
- Following prescribed industry standards, correctly utilize test equipment and tools to diagnose and repair automotive electrical systems.
- Utilizing prescribed industry practices, diagnose, repair, remove and replace air conditioning and heating systems and components.
- Independently apply technical training and skill sets learned at school in an actual automotive repair shop environment.
- Evaluate vehicle emission equipment and accurately perform a full smog inspection.
- Diagnose and repair vehicles that fail smog inspections.

Associate in Science Degree Requirements:

Course	Title	Units
AUTO 141	Emission Control License Fundamentals Level I Inspector Training	3
AUTO 142	Emission License Procedures Level II Inspector Training	2
AUTO 200	ASEP–Orientation	1
AUTO 201	ASEP–Electrical	6
AUTO 202	ASEP–Brakes and Alignment	7
AUTO 203	ASEP–Engine Repair	4.5
AUTO 204	ASEP–Power Train	7
AUTO 205	ASEP–Engine Performance and Air Conditioning	7
AUTO 206*	ASEP–Work Experience	15
	Total Required	52.5
	Plus General Education Requirements	

*Must be taken five times for a total of 15 units.

V. AUTOMOTIVE TECHNOLOGY–ASSET

The Ford sponsored ASSET degree program offers a unique job training opportunity to those students who are accepted. Training includes all systems of the sponsoring manufacturers' automobiles. In addition, students will be required to further their studies in a sponsoring dealership as a paid (work experience) technician. Students who test low in English, reading or math assessment scores (and are accepted into the program) will be required to take remedial courses in those areas in addition to the general education courses. Students who have previous college credit or an associate degree or higher may be exempt from all or part of the general education requirements; please see a counselor.

Program Learning Outcomes

Upon successful completion of this program, students will be able to:

- Demonstrate and practice standardized safety and hazardous waste handling practices.
- Describe the work flow processes utilized by new car dealership service departments.
- Prepare new vehicles for customer delivery.
- Perform lubrication maintenance service and minor maintenance services.
- Perform service repair and diagnosis of vehicle suspension, steering and brake systems utilizing a variety of tools and equipment.
- Retrieve manufacturers' repair data and specifications and utilize this information for accurate diagnosis and repair.
- Following prescribed industry guidelines, diagnose, remove, repair and replace automatic and manual transmissions and transaxles.
- Perform engine repairs to prescribed industry standards.
- Following prescribed industry standards, accurately measure and perform various machining processes on engine components.
- Diagnose and repair engine mechanical and ignition problems utilizing a variety of diagnostic and repair equipment.
- Independently demonstrate ability to perform computer system and fuel system service using related diagnostic equipment.
- Evaluate technical service bulletins for assisting in repairing various drivability concerns.
- Independently demonstrate ability to perform electronic engine diagnostics on both gasoline and diesel engines.
- Following prescribed industry standards, correctly utilize test equipment and tools to diagnose and repair automotive electrical systems.
- Utilizing prescribed industry practices, diagnose, repair, remove and replace air conditioning and heating systems and components.
- Independently apply technical training and skill sets learned at school in an actual automotive repair shop environment.
- Evaluate vehicle emission equipment and accurately perform a full smog inspection.
- Diagnose and repair vehicles that fail smog inspections.

Associate in Science Degree Requirements:

Course	Title	Units
AUTO 141	Emission Control License Fundamentals Level I Inspector Training	3
AUTO 142	Emission License Procedures Level II Inspector Training	2
AUTO 190	ASSET–Orientation, PDI and Lubrication	2
AUTO 191	ASSET–Brakes, Advanced Brakes, Suspension and NVH	7
AUTO 192	ASSET–Drive Train	8
AUTO 193	ASSET–Engine Repair	4.5
AUTO 195	ASSET–Electronic Engine Controls	7
AUTO 196	ASSET–Electrical, Accessories and Air Conditioning	5
AUTO 197*	ASSET–Work Experience	13
	Total Required	51.5
	Plus General Education Requirements	

*Must be taken five times for a total of 13 units.

VI. BRAKES AND FRONT-END

Program Learning Outcomes

Upon successful completion of this certificate, students will be able to:

- Demonstrate and practice standardized safety and hazardous waste handling practices.
- Perform various brake system repairs to prescribed industry standards.
- Diagnose and repair Anti-lock Brake systems.
- Using prescribed industry standards, diagnose and repair/replace steering and suspension components.
- Diagnose wheel alignment and tire related problems and align vehicles to industry specifications.
- Utilize communications skills to effectively deal with disgruntled colleagues in your work place.
- Utilize good customer relations techniques to improve customer satisfaction.
- Correctly adhere to BAR regulations involving writing repair orders estimates, revising estimates and final invoicing.
- Independently apply technical training and skill sets learned at school in an actual automotive repair shop environment.

Certificate Requirements:

Course	*Title*	*Units*
AUTO 130	Automotive Brakes and Brake License	5
AUTO 140	Four-Wheel Alignment	5
AUTO 145	Advanced Four-Wheel Alignment	5
AUTO 180	Automotive Service Advisor	1
AUTO 182	Automotive Work Experience	3
	Total Required	19

Certificate of Achievement
Students who complete the requirements above qualify for a Certificate in Automotive Technology–Brakes and Front-End. An official request must be filed with the Admissions and Records Office prior to the deadline as stated in the Academic Calendar.

VII. ENGINE PERFORMANCE AND DRIVE TRAIN

Program Learning Outcomes
Upon successful completion of this certificate, students will be able to:

- Demonstrate and practice standardized safety and hazardous waste handling practices.
- Diagnose and repair engine mechanical and ignition problems utilizing a variety of diagnostic and repair equipment.
- Using prescribed industry standards, correctly utilize test equipment and tools to diagnose and repair automotive electrical systems.
- Retrieve manufacturers repair data and specifications and utilize this information for accurate diagnosis and repair.
- Following prescribed industry guidelines, diagnosis, remove, repair and replace automatic and manual transmissions and transaxles.
- Perform engine repairs to prescribed industry standards.
- Following prescribed industry standards, accurately measure and perform various machining processes on engine components.
- Utilize communications skills to effectively deal with disgruntled colleagues in your work place.
- Utilize good customer relations techniques to improve customer satisfaction.
- Correctly adhere to BAR regulations involving writing repair orders estimates, revising estimates and final invoicing.
- Independently apply technical training and skill sets learned at school in an actual automotive repair shop environment.

Certificate Requirements:

Course	*Title*	*Units*
AUTO 120	Engine Performance I - Mechanical and Ignition Systems	5
AUTO 122	Automotive Electrical Systems	5
AUTO 152	Drive Train Systems	4
AUTO 170	Engine Overhaul	5
AUTO 182	Automotive Work Experience	3
	Total Required	22

Certificate of Achievement
Students who complete the requirements above qualify for a Certificate in Automotive Technology–Engine Performance and Drive Train. An official request must be filed with the Admissions and Records Office prior to the deadline as stated in the Academic Calendar.