

Instructional Comprehensive Program Review: Automotive Program Review

Cover

Overview

Title Automotive Program Review**Year of Last Comprehensive Review** Fall 2017**Year of Last Mini Update, if applicable** 11/30/2018**Originator** Bernbeck, Mark**Area Dean** Dr. Maniphone Dickerson**Division**

Bus & Workforce Development

Department

Automotive Technology

Subject

- AUTO - Automotive Technology

Is this a review for a degree/certificate or all the courses in the subject?

All Courses

Courses with no Degree or Certification

- AUTO 096 - Auto Principles - Historical
- AUTO 098 - Directed Study in Automotive Technology - Historical
- AUTO 102 - Automotive Systems - Historical
- AUTO 102 - Automotive Systems - Historical
- AUTO 102 - Automotive Systems - Historical
- AUTO 103 - Light Line Technician - Historical
- AUTO 103 - Light Line Technician - Historical
- AUTO 103 - Light Line Technician - Historical
- AUTO 105 - Suspension, Steering, and Alignment - Historical
- AUTO 105 - Suspension, Steering, and Alignment - Historical
- AUTO 106 - Automotive Brake Systems - Historical
- AUTO 107 - Valve Train - Historical
- AUTO 107 - Valve Train - Historical
- AUTO 108 - Engine Short Block - Historical
- AUTO 109 - Engine Blueprint - Historical
- AUTO 111 - Auto Welding - Historical
- AUTO 112 - Automotive Parts Retailing - Historical
- AUTO 113 - Electrical Systems Diagnosis - Historical
- AUTO 117 - Automotive Principles - Active
- AUTO 118 - Fuel Systems/Emission Controls - Historical
- AUTO 119 - Introduction to Engine Performance - Historical
- AUTO 119 - Introduction to Engine Performance - Historical
- AUTO 119 - Introduction to Engine Performance - Historical
- AUTO 120 - Automatic Transmission Systems - Historical
- AUTO 121 - Manual Transmission and Drivetrain Systems - Historical
- AUTO 122 - Advanced Electrical Systems - Historical
- AUTO 125 - Automotive Electronics - Historical
- AUTO 126 - Crank Motors - Historical
- AUTO 127 - Ignition Systems - Historical
- AUTO 127 - Ignition Systems - Historical
- AUTO 128 - Charging Systems - Historical
- AUTO 129 - DSO, GDMM, Scan Tool Diagnosis - Historical
- AUTO 129 - DSO, GDMM, Scan Tool Diagnosis - Historical
- AUTO 132 - Individualized Skills Training Lab - Historical
- AUTO 132A - Honda Individualized Skills Training Session A - Historical
- AUTO 132A - Honda Individualized Skills Training (IST) Session A - Historical
- AUTO 132B - Honda Individualized Skills Training (IST) Session B - Historical
- AUTO 132B - Honda Individualized Skills Training (IST) Session B - Historical
- AUTO 132C - Honda Individualized Skills Training (IST) Session C - Historical

- AUTO 132C - Honda Individualized Skills Training (IST) Session C - Historical
- AUTO 133 - Computerized Engine Management - Historical
- AUTO 133 - Computerized Engine Management - Historical
- AUTO 133 - Computerized Engine Management - Historical
- AUTO 134 - Advanced Engine Performance - Historical
- AUTO 135 - Air Conditioning Systems - Historical
- AUTO 136 - Automotive Occupational Work Experience-Parallel Plan - Historical
- AUTO 137 - Special Project - Historical
- AUTO 138 - Occupational Work Experience - Historical
- AUTO 138 - Occupational Work Experience - Historical
- AUTO 138 - Occupational Work Experience - Historical
- AUTO 141 - Clean Air Car Course - Historical
- AUTO 141 - Clean Air Car Course - Historical
- AUTO 142 - Automotive Electrical/Electronic Systems - Historical
- AUTO 143 - Engine Performance - Historical
- AUTO 144 - BAR OBD2 Update Training - Historical
- AUTO 145 - Enhanced Emission Diagnostics Level 2 - Historical
- AUTO 145 - Enhanced Emission Diagnostics Level 2 - Historical
- AUTO 146 - BAR-97 Transition Course/Loaded Mode Emission Testing - Historical
- AUTO 147 - BAR Update Training and Recertification - Historical
- AUTO 147A - BAR 2005 Update Training - Historical
- AUTO 147B - BAR 2007 Update Training - Historical
- AUTO 147C - BAR 2009 Update Training - Historical
- AUTO 147D - BAR 2011 Update Training - Historical
- AUTO 147E - BAR Update Training - Historical
- AUTO 150 - Shop Operations and Pre-Delivery Inspection Procedures - Historical
- AUTO 151 - Brake Systems (Ford Asset) - Historical
- AUTO 152 - Suspension and Alignment - Historical
- AUTO 153 - Engine Service Part 1 Ford Asset - Historical
- AUTO 154 - Engine Service Part 2 Ford Asset - Historical
- AUTO 155 - Automatic Transmission - Historical
- AUTO 156 - Automatic Transmission Part 2 - Historical
- AUTO 157 - Basic Auto Electrical Ford Asset - Historical
- AUTO 158 - Climate Control Ford Asset - Historical
- AUTO 159 - Engine Performance and Driveability Ford Asset - Historical
- AUTO 160 - Carburetion - Historical
- AUTO 162 - Fuel Injection - Historical
- AUTO 163 - Battery, Starting, Charging Systems - Historical
- AUTO 164 - Ignition Systems Ford Asset - Historical
- AUTO 165 - Diesel Engines Ford Asset - Historical
- AUTO 166 - Fuel Systems Ford Asset - Historical
- AUTO 167 - Advanced Automotive Electronics Ford Asset - Historical
- AUTO 169 - Ford Scan Tool Diagnostics - Historical
- AUTO 170 - Electrical Systems - Historical
- AUTO 170 - Electrical Systems - Historical
- AUTO 170 - Electrical Systems - Historical
- AUTO 171 - Engine Systems - Historical
- AUTO 171 - Engine Systems - Historical
- AUTO 172 - Chassis and Drivetrain Systems - Historical
- AUTO 173 - Automotive Service Operations - Historical
- AUTO 174 - Body & Chassis Electronics - Historical
- AUTO 175 - Welding and Fabrication - Historical
- AUTO 175 - Welding and Fabrication - Historical
- AUTO 180 - BAR 2003 Update Training - Historical
- AUTO 181A - Introduction to Alternative Fuel and Hybrid/Electric Vehicles - Historical
- AUTO 181A - Introduction to Alternative Fuel and Hybrid/Electric Vehicles - Historical
- AUTO 181A - Introduction to Alternative Fuel and Hybrid/Electric Vehicles - Historical
- AUTO 181B - Hybrid Electric Vehicle Maintenance and Repair - Historical
- AUTO 181B - Hybrid Electric Vehicle Maintenance and Repair - Historical

- AUTO 181B - Hybrid Electric Vehicle Maintenance and Repair - Historical
- AUTO 191 - Collision Electrical Diagnosis and Repair - Historical
- AUTO 202 - Bugged Vehicle Diagnosis - Historical
- AUTO 204 - Driver Assist Technology - Historical
- AUTO 210 - Automotive Technology Supervised Tutoring - Historical
- AUTO 500 - Math for Automotive Technology - Historical
- AUTO 500 - Math for Automotive Technology - Historical
- AUTO 501 - English for Automotive Technology - Historical
- AUTO 501 - Basic Terminology and Communication in Auto Technology - Active
- AUTO 501 - English for Automotive Technology - Historical

Co-Contributors

*Co-Contributor must be chosen before proposal is launched

- Ames, David
- Cortese, Michael
- Dickerson, Maniphone

Overview

With equity, opportunity and social justice as our guiding principles, Evergreen Valley College's mission is to empower and prepare students from diverse backgrounds to succeed academically, and to be civically responsible global citizens.

1.Student-Centered: We provide access to quality and efficient programs and services to ensure student success.

- Access
- Curriculum and programs
- Services

2. Community Engagement: We will transform the college image and enhance partnerships with community, business and educational institutions.

Areas of focus are:

- Increase visibility
- Develop strategic partnerships
- Building campus community

3.Organizational Transformation: We create a trusting environment where everyone is valued and empowered.

Areas of focus are:

- Communication
- Employee development
- Transparent Infrastructure

Related Assessments

- **1. Provide a brief summary of your program. Please include a brief history and discuss any factors that been important to the program's development.**

The Automotive Technology Program moved to the new Evergreen Valley College campus in 1975 from its previous location at San Jose City College. The program serves traditional students and industry professionals with day and evening courses. With the rapid changes and advancements in automotive technology, the need has grown for technicians to be able to service, diagnose, and repair modern vehicles. The day program features an accelerated pace with sequential four-days-per-week classes, and the evening program typically offers one- or two-days-per-week classes, to accommodate students who cannot take the day program because of schedule conflicts.

The program includes automotive service technician training, as well as corporate programs sponsored by American Honda/Acura and Tesla and their service centers. The manufacturer programs blend EVC coursework with specific hands-on skills tasks. Students intern at the manufacturer service centers and then are given placement opportunities at available centers. Our Collision Technical certificate offers the latest ADAS and collision avoidance technology preparing students with the technical knowledge needed to repair and calibrate those systems after vehicles are repaired after a collision. The Auto program houses the CA smog referee center which offers student internship opportunities and raises community awareness of the Automotive Program.

The Auto program offers a range of opportunities for students, which include pursuing individual courses, seven certificates of achievement, and two AS degrees. The mission of the Auto program is to empower students with the latest technological knowledge and workplace skills needed to obtain employment and serve the needs of the local business community and vehicle manufacturers.

- **2. Please provide an update on the program's progress in achieving the goals (3 years) set during the last comprehensive program review.**

Some of the goals made in the last few years were to finalize the Tesla curriculum and certificate, Collision Technical curriculum and certificate, maintain certification and partnership with Honda of America, maintain partnership with the local trade union apprenticeship program, and maintain the Smog training certification. All of these goals were achieved as well as hiring two new instructors, getting closer to the program's goal of being able to offer a two- and three-year education plan to expedite students' certificate completion. A devoted automotive counselor was added to help students make their education plans which

resulted in greater certificate completion. A High-Voltage battery training trainer was purchased for the High-Voltage classes. Two tire-mounting machines, three vehicle lifts, an air-conditioning machine, nine scan-tools, two digital scopes, eight digital meters, and an alignment machine were also purchased. With these tools and curriculum, the EVC automotive program has kept the reputation of a rigorous program that teaches the latest technology.

• **3. Please state and recent accomplishments for your program and show how it contribute to the College's mission and success.**

New partnerships were made with a local Automotive Trade Union, Collision Industry partners, Tesla, Elmwood Correctional Facility. The new Automotive Hybrid and Electric Vehicle Service - Certificate of Achievement was approved in 2019. A new Collision Technical certificate was approved in 2020. A new Tesla certificate was approved in 2021. Other curriculum updates were made as is required by a CTE program, every two years. Along with new curriculum, the department has added the latest technical equipment, tools, and vehicles for demonstration and hands-on training. Four new vehicles, tools, and equipment were recently loaned to us by the Honda corporation. Tesla offers the program its curriculum and 11 vehicles.

We designed a two-year accelerated pathway and devoted program counselors to assist with education planning and certificate and degree completion. Although we have had four faculty retirements, we have been able to hire two faculty and requested three faculty positions to be able to offer all the courses needed for all certificates and maintain each sub-program. Those sub-programs are: Foundational, Drivetrain-Chassis, Honda PACT, Fuel and Electrical, Collision Technical, Smog, Electric-Hybrid Vehicle, and Tesla START.

Every year, we have held or attended advisory meetings with our business partners in automotive dealerships, collision repair facilities, and other training facilities. The advisory members comprise a wide range of industry representatives such as shop foremen, service advisors, service managers, tool vendors, former students, and auto instructors from other schools. A minimum of five advisors must attend each meeting. At every meeting, each advisor reviews our curriculum, lab equipment, and methods and makes recommendations that are carefully listened to and followed to the fullest extent possible. Examples: our Honda advisors requested that students need to be proficient in "Express Service". Curriculum was changed to make "Express Service" and proficiency thereof required.

Every five years, the ASE Alliance, formerly NATEF (National Automotive Technicians Education Foundation) conducts a thorough on-site re-certification of our automotive program against their standards. Our automotive program has maintained a Master Certification since 1999, meeting the criteria for all eight ASE (Automotive Service Excellence) competency areas.

In accordance with district guidelines, all courses are reviewed and revised at least every two years. The faculty regularly attends significant industry training to bring the latest innovative methodologies to the classroom and lab. Thanks to our association with American Honda and Tesla, we are able to offer our students online interactive coursework as well as classroom and home study. The program's Student Learning Outcomes (SLO) have been identified and tracked, with continual tuning of methods and procedures to maximize student success. Student competency has consistently improved as a result of SLO tracking.

The program continues to achieve its goals of meeting or exceeding the district and college mission, strategic initiatives, academic offerings, and priorities by embracing diversity, teaching ethical and productive behavior, and creating highly successful school-to-work linkages. We listen to our students and adopt practices that best meet their unique needs.

• **4. If you received resource allocation for your last program review cycle, please indicate the resources you received and how these resources were utilized to impact student success and / or importance to your program. (The resources can be personnel or fiscal)**

We received financial support from the Perkins and Strong Workforce Grants. These funds helped us purchase new equipment, pay for faculty training, and pay for faculty to develop new programs and maintain current ones. The interactive online training from Electude was purchased by the regional director. A tire-mounting machine, alignment machine, and vehicle lifts were purchased for Tesla training. A High-Voltage battery training tool was purchased for the Hybrid and Electric Vehicle courses.

• **5. Please describe where you would like your program to be three years from now (Program goals) and how the college mission, strategic Initiatives and student success.**

Three years from now, the program should grow in enrollment due to new faculty hires and necessary equipment to allow all active courses to be offered in the two-year pathway. This will increase certificate and degree completion. With the number of classes needed to remain student-centered and fulfill the departments two-year pathways, there will be a lack of sufficient classrooms and instructional labs. Therefore, there is a need for expansion with a new building devoted for Electric Vehicle training. This will allow more sections to be offered and help students with certificate and degree completion, job placement, and empower students to become civically responsible global citizens. We should also be able to serve our community industry partners with greater job placement and internships. By decreasing or eliminating costs to students for texts and lab equipment, we serve the college's mission of providing equity, opportunity, and social justice to all members of the community, especially those disadvantaged students.

Program Set Standards (Summary Tab)

Overall, EVC's Institution Set Standard for success rate is 72%, and the aspirational goal for student success is 75%.

Success Rate (completion with "C" or better)	Program	EVC	Program Set Standard (established during last comprehensive PR)	Program Success Goal (new)
F'14-F'20 average		71.10%		

Courses with no Degree or Certification

AUTO 117 - Automotive Principles

New Course

Created: 04/18/2017

Originator: Mike Hernandez

AUTO 500 - Math for Automotive Technology

Modify Course

AUTO 501 - Basic Terminology and Communication in Auto Technology

Modify Course

AUTO 096 - Auto Principles

New Course

AUTO 098 - Directed Study in Automotive Technology

New Course

AUTO 102 - Automotive Systems

New Course

AUTO 102 - Automotive Systems

Modify Course

AUTO 102 - Automotive Systems

Modify Course

AUTO 103 - Light Line Technician

Modify Course

AUTO 103 - Light Line Technician

Modify Course

AUTO 103 - Light Line Technician

New Course

AUTO 105 - Suspension, Steering, and Alignment

New Course

AUTO 105 - Suspension, Steering, and Alignment

Modify Course

AUTO 106 - Automotive Brake Systems

New Course

AUTO 107 - Valve Train

New Course

AUTO 107 - Valve Train

Modify Course

AUTO 108 - Engine Short Block

New Course

AUTO 109 - Engine Blueprint

New Course

AUTO 111 - Auto Welding

New Course

AUTO 112 - Automotive Parts Retailing

New Course

AUTO 113 - Electrical Systems Diagnosis

New Course

AUTO 118 - Fuel Systems/Emission Controls

New Course

AUTO 119 - Introduction to Engine Performance

New Course

AUTO 119 - Introduction to Engine Performance

Modify Course

AUTO 119 - Introduction to Engine Performance

Modify Course

AUTO 120 - Automatic Transmission Systems

New Course

AUTO 121 - Manual Transmission and Drivetrain Systems

New Course

AUTO 122 - Advanced Electrical Systems

New Course

AUTO 125 - Automotive Electronics

New Course

AUTO 126 - Crank Motors

New Course

AUTO 127 - Ignition Systems

New Course

AUTO 127 - Ignition Systems

Modify Course

AUTO 128 - Charging Systems

New Course

AUTO 129 - DSO, GDMM, Scan Tool Diagnosis

New Course

AUTO 129 - DSO, GDMM, Scan Tool Diagnosis

Modify Course

AUTO 132 - Individualized Skills Training Lab

New Course

AUTO 132A - Honda Individualized Skills Training Session A

New Course

Originator: David Ames Created: 08/28/2017

Created: 08/28/2017

Originator: Mike Hernandez

Created: 10/21/2014

Originator: System Loaded

Created: 10/21/2014

Originator: System Loaded

Created: 10/21/2014

Originator: System Loaded

Created: 03/24/2015

Originator: Mike Hernandez

Created: 01/23/2019

Originator: Mike Hernandez

Created: 01/23/2019

Originator: Mike Hernandez

Created: 08/27/2016

Originator: Mike Hernandez

Created: 10/21/2014

Originator: System Loaded

Created: 10/21/2014

Originator: System Loaded

Created: 09/01/2016

Originator: David Ames

Created: 10/21/2014

Originator: System Loaded

Created: 10/21/2014

Originator: System Loaded

Created: 02/03/2017

Originator: Mark Bernbeck

Created: 10/21/2014

Originator: System Loaded

Created: 10/21/2014

Originator: System Loaded

Created: 10/21/2014

Originator: System Loaded

Created: 10/21/2014

Originator: System Loaded

Created: 10/21/2014

Originator: System Loaded

Created: 10/21/2014

Originator: System Loaded

Created: 10/21/2014

Originator: System Loaded

Created: 08/27/2016

Originator: Mike Hernandez

Created: 01/24/2019

Originator: Mike Hernandez

Created: 10/21/2014

Originator: System Loaded

Created: 10/21/2014

Originator: System Loaded

Created: 10/21/2014

Originator: System Loaded

Created: 10/21/2014

Originator: System Loaded

Created: 10/21/2014

Originator: System Loaded

Created: 10/21/2014

Originator: System Loaded

Created: 04/08/2016

Originator: Bradley Bergholdt

Created: 10/21/2014

Originator: System Loaded

Created: 10/21/2014

Originator: System Loaded

Created: 08/25/2016

Originator: Bradley Bergholdt

Created: 10/21/2014

Originator: System Loaded

Created: 10/21/2014

Originator: System Loaded

AUTO 132A - Honda Individualized Skills Training (IST) Session A	Created: 11/23/2018
Modify Course	Originator: Mark Bernbeck
AUTO 132B - Honda Individualized Skills Training (IST) Session B	Created: 11/23/2018
Modify Course	Originator: Mark Bernbeck
AUTO 132B - Honda Individualized Skills Training (IST) Session B	Created: 05/22/2015
New Course	Originator: Vicki Brewster
AUTO 132C - Honda Individualized Skills Training (IST) Session C	Created: 05/22/2015
New Course	Originator: Vicki Brewster
AUTO 132C - Honda Individualized Skills Training (IST) Session C	Created: 11/23/2018
Modify Course	Originator: Mark Bernbeck
AUTO 133 - Computerized Engine Management	Created: 01/11/2019
Modify Course	Originator: Mark Bernbeck
AUTO 133 - Computerized Engine Management	Created: 06/24/2015
Modify Course	Originator: Vicki Brewster
AUTO 133 - Computerized Engine Management	Created: 10/21/2014
New Course	Originator: System Loaded
AUTO 134 - Advanced Engine Performance	Created: 10/21/2014
New Course	Originator: System Loaded
AUTO 135 - Air Conditioning Systems	Created: 10/21/2014
New Course	Originator: System Loaded
AUTO 136 - Automotive Occupational Work Experience-Parallel Plan	Created: 10/21/2014
New Course	Originator: System Loaded
AUTO 137 - Special Project	Created: 10/21/2014
New Course	Originator: System Loaded
AUTO 138 - Occupational Work Experience	Created: 10/21/2014
New Course	Originator: System Loaded
AUTO 138 - Occupational Work Experience	Created: 08/25/2016
Modify Course	Originator: Bradley Bergholdt
AUTO 138 - Occupational Work Experience	Created: 01/03/2019
Modify Course	Originator: Mark Bernbeck
AUTO 141 - Clean Air Car Course	Created: 08/25/2016
Modify Course	Originator: Kenneth Morgan
AUTO 141 - Clean Air Car Course	Created: 10/21/2014
New Course	Originator: System Loaded
AUTO 142 - Automotive Electrical/Electronic Systems	Created: 10/21/2014
New Course	Originator: System Loaded
AUTO 143 - Engine Performance	Created: 10/21/2014
New Course	Originator: System Loaded
AUTO 144 - BAR OBD2 Update Training	Created: 10/21/2014
New Course	Originator: System Loaded
AUTO 145 - Enhanced Emission Diagnostics Level 2	Created: 10/21/2014
New Course	Originator: System Loaded
AUTO 145 - Enhanced Emission Diagnostics Level 2	Created: 01/03/2019
Modify Course	Originator: Mark Bernbeck
AUTO 146 - BAR-97 Transition Course/Loaded Mode Emission Testing	Created: 10/21/2014
New Course	Originator: System Loaded
AUTO 147 - BAR Update Training and Recertification	Created: 10/21/2014
New Course	Originator: System Loaded
AUTO 147A - BAR 2005 Update Training	Created: 10/21/2014
New Course	Originator: System Loaded
AUTO 147B - BAR 2007 Update Training	Created: 10/21/2014
New Course	Originator: System Loaded
AUTO 147C - BAR 2009 Update Training	Created: 10/21/2014
New Course	Originator: System Loaded
AUTO 147D - BAR 2011 Update Training	Created: 10/21/2014
New Course	Originator: System Loaded
AUTO 147E - BAR Update Training	Created: 10/21/2014
New Course	Originator: System Loaded
AUTO 150 - Shop Operations and Pre-Delivery Inspection Procedures	Created: 10/21/2014
New Course	Originator: System Loaded
AUTO 151 - Brake Systems (Ford Asset)	Created: 10/21/2014
New Course	Originator: System Loaded
AUTO 152 - Suspension and Alignment	Created: 10/21/2014
New Course	Originator: System Loaded
AUTO 153 - Engine Service Part 1 Ford Asset	Created: 10/21/2014
New Course	Originator: System Loaded
AUTO 154 - Engine Service Part 2 Ford Asset	Created: 10/21/2014
New Course	Originator: System Loaded
AUTO 155 - Automatic Transmission	Created: 10/21/2014
New Course	Originator: System Loaded
AUTO 156 - Automatic Transmission Part 2	Created: 10/21/2014
New Course	Originator: System Loaded

AUTO 157 - Basic Auto Electrical Ford Asset	Created: 10/21/2014
New Course	Originator: System Loaded
AUTO 158 - Climate Control Ford Asset	Created: 10/21/2014
New Course	Originator: System Loaded
AUTO 159 - Engine Performance and Driveability Ford Asset	Created: 10/21/2014
New Course	Originator: System Loaded
AUTO 160 - Carburetion	Created: 10/21/2014
New Course	Originator: System Loaded
AUTO 162 - Fuel Injection	Created: 10/21/2014
New Course	Originator: System Loaded
AUTO 163 - Battery, Starting, Charging Systems	Created: 10/21/2014
New Course	Originator: System Loaded
AUTO 164 - Ignition Systems Ford Asset	Created: 10/21/2014
New Course	Originator: System Loaded
AUTO 165 - Diesel Engines Ford Asset	Created: 10/21/2014
New Course	Originator: System Loaded
AUTO 166 - Fuel Systems Ford Asset	Created: 10/21/2014
New Course	Originator: System Loaded
AUTO 167 - Advanced Automotive Electronics Ford Asset	Created: 10/21/2014
New Course	Originator: System Loaded
AUTO 169 - Ford Scan Tool Diagnostics	Created: 10/21/2014
New Course	Originator: System Loaded
AUTO 170 - Electrical Systems	Created: 10/21/2014
New Course	Originator: System Loaded
AUTO 170 - Electrical Systems	Created: 05/21/2015
Modify Course	Originator: Vicki Brewster
AUTO 170 - Electrical Systems	Created: 01/16/2019
Modify Course	Originator: Mike Hernandez
AUTO 171 - Engine Systems	Created: 08/25/2016
Modify Course	Originator: Mark Bernbeck
AUTO 171 - Engine Systems	Created: 10/21/2014
New Course	Originator: System Loaded
AUTO 172 - Chassis and Drivetrain Systems	Created: 10/21/2014
New Course	Originator: System Loaded
AUTO 173 - Automotive Service Operations	Created: 10/21/2014
New Course	Originator: System Loaded
AUTO 174 - Body & Chassis Electronics	Created: 10/21/2014
New Course	Originator: System Loaded
AUTO 175 - Welding and Fabrication	Created: 08/28/2015
Modify Course	Originator: David Ames
AUTO 175 - Welding and Fabrication	Created: 10/21/2014
New Course	Originator: System Loaded
AUTO 180 - BAR 2003 Update Training	Created: 10/21/2014
New Course	Originator: System Loaded
AUTO 181A - Introduction to Alternative Fuel and Hybrid/Electric Vehicles	Created: 10/21/2014
New Course	Originator: System Loaded
AUTO 181A - Introduction to Alternative Fuel and Hybrid/Electric Vehicles	Created: 06/22/2015
Modify Course	Originator: Vicki Brewster
AUTO 181A - Introduction to Alternative Fuel and Hybrid/Electric Vehicles	Created: 01/24/2019
Modify Course	Originator: Mike Hernandez
AUTO 181B - Hybrid Electric Vehicle Maintenance and Repair	Created: 01/24/2019
Modify Course	Originator: Mike Hernandez
AUTO 181B - Hybrid Electric Vehicle Maintenance and Repair	Created: 06/22/2015
Modify Course	Originator: Vicki Brewster
AUTO 181B - Hybrid Electric Vehicle Maintenance and Repair	Created: 10/21/2014
New Course	Originator: System Loaded
AUTO 191 - Collision Electrical Diagnosis and Repair	Created: 01/21/2017
New Course	Originator: Bradley Bergholdt
AUTO 202 - Bugged Vehicle Diagnosis	Created: 10/21/2014
New Course	Originator: System Loaded
AUTO 204 - Driver Assist Technology	Created: 04/17/2017
New Course	Originator: Mark Bernbeck
AUTO 210 - Automotive Technology Supervised Tutoring	Created: 10/21/2014
New Course	Originator: System Loaded
AUTO 500 - Math for Automotive Technology	Created: 08/31/2015
New Course	Originator: David Ames
AUTO 501 - English for Automotive Technology	Created: 12/10/2015
New Course	Originator: Mike Hernandez
AUTO 501 - English for Automotive Technology	Created: 09/26/2016
Modify Course	Originator: Mike Hernandez

Program Success Rate 77.54%

Program Set Standard: It is recommended that programs identify a success standard. This standard should reflect the baseline success rate.

Program Set Standard 69.79%

Recommendation: 90% of the 2 year average success rate could be your program standard (average x 0.9).

Program Success Goal: It is recommended that programs identify a success goal. This goal should reflect the success rate to which your program aspires.

Program Success Goal 70%

- Is your program success rate higher or lower than the campus?

Higher

- If your success rate is higher than the campus, how are you helping students succeed in and outside the classroom? If your program success rate is lower, what are some strategies your program is implementing to improve?

It has been our goal to make our program as efficient as possible by having consistent scheduling that allows devoted counselors to easily assign educational pathways, offering accelerated two-year pathways, and creating stackable certificates. Having free texts on loan and offering online as well as In-person training has given students better access and flexibility to complete their pathway.

- Is the current program success rate higher than the program set standard?

Yes

- How close is the program to meeting the program success goal?

It is 7.54% higher than the success goal.

- Are these measures (program set standard and program success goal) still current/accurate? If not, please describe here and reset the standards.

Yes

Success Rates: Measures by IPEDs Race/Ethnicity

- American Indian**

Program Average Total Enrolled

5.000

Program Success Rate

87.230

- Asian**

Program Average Total Enrolled

142.000

Program Success Rate

80.800

- Black or African American**

Program Average Total Enrolled

7.000

Program Success Rate

58.110

- Hawaiin/Pacific Islander**

Program Average Total Enrolled

5.000

Program Success Rate

77.710

- Hispanic**

Program Average Total Enrolled

212.000

Program Success Rate

74.800

- Two or More Races**

Program Average Total Enrolled

10.000

Program Success Rate

71.730

- Unknown**

Program Average Total Enrolled

46.000

Program Success Rate
75.870

- White**

Program Average Total Enrolled
39.000
Program Success Rate
84.760

Success Rates: Measures by Gender

- Female**

Program Average Total Enrolled
25.000
Program Success Rate
70.600

- Male**

Program Average Total Enrolled
434.000
Program Success Rate
78.180

- No Value Entered**

Program Average Total Enrolled
2.000
Program Success Rate
52.780

Success Rates: Measures by Age

- 17 & Below**

Program Average Total Enrolled
7.000
Program Success Rate
73.860

- 18-24**

Program Average Total Enrolled
310.000
Program Success Rate
75.240

- 25-39**

Program Average Total Enrolled
111.000
Program Success Rate
82.070

- 40 & Over**

Program Average Total Enrolled
33.000
Program Success Rate
87.610

- Unknown**

Program Average Total Enrolled
1.000
Program Success Rate
50.000

- a. With respect to disaggregated success rates, list any equity gaps that are identified and discuss interventions your program will implement to address these equity gaps? Please include a timeline of implementation and reassessment.**

Women and those 17 and under are under-represented in the program. A new partnership with Elmwood correctional facility will allow mainly women inmates to begin the program while incarcerated. We will begin teaching at Elmwood correctional facility in the Summer of 2022. For those 17 and under, dual enrollment has been established with Independence High School, Wilcox High School, and Silicon Valley Career Tech Education. We have classes for dual enrollment scheduled for Spring 2022 and continue in Fall 2022.

- **b. With respect to disaggregated success rates (ethnicity / race, gender and age), discuss student performance in reaching your program set standard for student success as well as reaching the program success goal.**

The program Set Standard is at 69.79% and Program Success Goal is 70%. The program is performing well and most groups are performing better than the college's rates. One of the groups that is underrepresented is the Black or African American population. EVC and Honda have begun a partnership with the Bay Area Urban league to enroll urban youth into our automotive program. We expect to have an MOU with the Urban League and begin enrolling students in Fall 2022.

- **c. If your program offers course sections fully online, please contact the office of Research, Planning and Institutional Effectiveness to obtain a student success report on the online sections. Address any differences in student success rates between fully online courses and classroom courses.**

Only during the campus closure during the pandemic were some programs' classes offered online. Since the program requires hands-on training to be accredited by the ASE Alliance, the program has resumed to in-person instruction. Students who did not receive hands-on training and enrolled later, after the program returned in-person, were less prepared for advanced classes. Extra time was given students to allow them to experience the hands-on element that was missed during the campus closure.

Program Awards - If Applicable

If the classes in your program lead to a degree or certificate, please visit the DataMart and indicate how many degrees/certificates were awarded in your program: http://datamart.cccco.edu/Outcomes/Program_Awards.aspx (http://datamart.cccco.edu/Outcomes/Program_Awards.aspx)

You will need to select drop down menus and then "select program type by major of study" (for example, select Legal for paralegal studies).

Then at the bottom of the report, select the box "program type- four digits TOP", then update report to get program specific information.

Degree Type

- **AS**

Number of Awards (Examine 2014-15, 2015-16, 2016-17,2017-18 data 2018-19 data and 2019-20 data)

50

Discussion

There have been two degrees available in the program. One focuses on the advanced electrical and fuel-related theory of automotive technology. The second degree is focused on the chassis-systems of the vehicle with some electrical theory.

- **Certificate of 12-18 units**

Number of Awards (Examine 2014-15, 2015-16, 2016-17,2017-18 data 2018-19 data and 2019-20 data)

99

Discussion

There is a Foundational certificate which has courses that prepare a student for entry-level automotive repair and diagnostics. A student add more advanced courses to the Foundational certificate and earn more certificates or degrees. The Drivetrain-chassis certificate and degree and Honda certificate prepare a student for work in an independent repair shop or a dealership, such as Honda or Acura. The Collision-technical certificate prepares a student for the technical equipment they will need to repair as well as body-repair. The Electrical-engine performance certificate and degree prepares a student with higher-level electrical and fuel skills. Finally the Hybrid and Electric vehicle service prepares students to repair the latest high-voltage vehicles.

Student Enrollment Types

Related Assessments

Student Enrollment Type: Day or Evening Student

- **Day: 4721 - 51.130%**
Program Average Headcount
 62.000
Program Percentage of Total
 26.570
- **Day & Evening: 3111 - 33.690%**
Program Average Headcount
 105.000
Program Percentage of Total
 44.750
- **Evening: 1061 - 11.490%**
Program Average Headcount
 63.000
Program Percentage of Total
 26.760
- **Unknown: 341 - 3.700%**

Program Average Headcount

5.000

Program Percentage of Total

1.920

Student Enrollment Type: Academic Load

- Full Time: 2259 - 24.450%**

Program Average Headcount

33.000

Program Percentage of Total

14.330

- Half Time or less than half time: 6214 - 67.280%**

Program Average Headcount

176.000

Program Percentage of Total

75.490

- a. Discuss any changes in program enrollment types (day vs evening, full-time vs part-time) since your last program review?**

The program has always had both day and evening enrollment types and mostly part-time students. Many of our students have full-time jobs and take a part-time load, but many take our courses as a full-time load. Having financial services available to help students has helped students take a full load of automotive courses. Class enrollment has been higher during the day and afternoon classes.

- b. Discuss how do your program enrollments (Pct of total) compare to EVC?**

Compared to EVC, the program has fewer students during the day and more students in the evening. This has reflected the trend of automotive students being employed during the day while taking courses at night. Previous scheduling may have had an effect on day vs. evening enrollment, by less course being offered in the day. The program has been scheduling more classes in the morning to accommodate students who are not employed during the day.

- c. Based on the data, would you recommend any changes?**

Since many productive changes have been made, those must continue to be implemented, such as: Having certificate pathways and courses strategically scheduled to allow students to take more classes and finding student support services to ease financial burdens to help enroll more day-time and full-time students.

Student Demographics - Headcount

Related Assessments

Student Demographic: Gender

- Female: 5022 - 54.390%**

Program Headcount

14.000

Program Percentage of Total

6.040

- Male: 4176 - 45.220%**

Program Headcount

217.000

Program Percentage of Total

93.430

- No Value Entered: 36 - 0.390%**

Program Headcount

2.000

Program Percentage of Total

0.860

Student Demographic: Age

- 17 & Below: 465 - 5.000%**

Program Headcount

6.000

Program Percentage of Total

2.440

- **18-24: 5542 - 59.990%**
Program Headcount
150.000
Program Percentage of Total
65.050
- **25-39: 2214 - 24.010%**
Program Headcount
54.000
Program Percentage of Total
23.110
- **40 & Over: 1006 - 10.900%**
Program Headcount
22.000
Program Percentage of Total
9.390
- **Unknown: 9 - 0.100%**
Program Headcount
2.000
Program Percentage of Total
0.620

Student Demographic: Race/Ethnicity (IPEDs Classification)

- **American Indian: 45 - 0.480%**
Program Headcount
2.000
Program Percentage of Total
0.760
- **Asian: 3675 - 39.790%**
Program Headcount
68.000
Program Percentage of Total
29.170
- **Black or African American: 218 - 2.360%**
Program Headcount
4.000
Program Percentage of Total
1.660
- **Hawaiin/Pacific Islander: 38 - 0.410%**
Program Headcount
2.000
Program Percentage of Total
0.700
- **Hispanic: 3650 - 39.500%**
Program Headcount
112.000
Program Percentage of Total
48.120
- **Two or More Races: 245 - 2.650%**
Program Headcount
5.000
Program Percentage of Total
2.030
- **Unknown: 773 - 8.390%**
Program Headcount
23.000
Program Percentage of Total
9.860
- **White: 591 - 6.420%**

Program Headcount

19.000

Program Percentage of Total

8.340

- **a. Based on the program total headcount and percent change year to year, discuss if your program growing or declining. If so, what do you attribute these changes in enrollment to and what changes will the program implement to address them?**

Enrollment has been improving and the program is growing so much that we are applying to become a four-year, Bachelorette program. Thanks to efforts made to maintain National Automotive Accreditation, remain as a Smog-Certified Training Facility, reattain certification with Honda of America, and gain new certification as a Tesla training center, even as the department recently lost faculty through retirements. We have already been given approval to hire a fourth faculty member, which will offset the retirement of the previous four faculty. We have also been able to purchase the latest technologies and training equipment, thanks to grants and donations from Honda and Tesla.

- **b. Discuss any gaps have you identified in your program. Discuss how your program enrollment is similar or different from the campus. Discuss which gender, age, and/or ethnic group are proportionally smaller than campus make up.**

The program has remained consistent with represented groups with a gain in enrollment. We have a higher rate than the college for enrolling men, 18-24 year olds, and Hispanic and white races. The program trains students to become repair technicians and in the automotive field, women are less represented as technicians. Attempts have been made in the past to interest more women in the program, and we are pursuing dual enrollment with the women at the Elmwood Correctional Facility. Our rate of African-Americans is lower than the college, however we are pursuing a relationship with the Bay-Area Urban League.

- **c. Discuss what interventions the program can implement to address any gaps in enrollment.**

Efforts are being made to address gaps in race and sexual orientation as well as increase enrollment with new relationships with outside programs and having devoted counselors to facilitate the enrollment process, retention by providing education planning, and facilitating graduation and certification.

Institutional Effectiveness (5 year average, see Summary Tab)

EVC Capacity: 62.49% EVC Productivity: 14.72

Program Capacity

65.67

Program Productivity

11.07

Is your capacity rate higher or lower then the campus?

Higher

Is your productivity goal higher or lower than the campus?

Lower

If the program capacity and/or productivity is lower than the campus, please provide rationale:

The productivity goal is lower than the campus, perhaps due to the fact that all of our classes have a lab component and for safety reasons, the lab capacity is capped at 24 students. Also, more full-time faculty are needed due to the high amount of technical knowledge needed in a time of rapid technological change and the amount of administrative tasks necessary outside of teaching classes. It is difficult finding part-time faculty with the technical knowledge and the time needed for other duties.

Curriculum

Related Assessments

Courses with no Degree or Certification

- AUTO 096 - Auto Principles - Historical
- AUTO 098 - Directed Study in Automotive Technology - Historical
- AUTO 102 - Automotive Systems - Historical
- AUTO 102 - Automotive Systems - Historical
- AUTO 102 - Automotive Systems - Historical
- AUTO 103 - Light Line Technician - Historical
- AUTO 103 - Light Line Technician - Historical
- AUTO 103 - Light Line Technician - Historical
- AUTO 105 - Suspension, Steering, and Alignment - Historical
- AUTO 105 - Suspension, Steering, and Alignment - Historical
- AUTO 106 - Automotive Brake Systems - Historical
- AUTO 107 - Valve Train - Historical
- AUTO 107 - Valve Train - Historical
- AUTO 108 - Engine Short Block - Historical
- AUTO 109 - Engine Blueprint - Historical
- AUTO 111 - Auto Welding - Historical

- AUTO 112 - Automotive Parts Retailing - Historical
- AUTO 113 - Electrical Systems Diagnosis - Historical
- AUTO 117 - Automotive Principles - Active
- AUTO 118 - Fuel Systems/Emission Controls - Historical
- AUTO 119 - Introduction to Engine Performance - Historical
- AUTO 119 - Introduction to Engine Performance - Historical
- AUTO 119 - Introduction to Engine Performance - Historical
- AUTO 120 - Automatic Transmission Systems - Historical
- AUTO 121 - Manual Transmission and Drivetrain Systems - Historical
- AUTO 122 - Advanced Electrical Systems - Historical
- AUTO 125 - Automotive Electronics - Historical
- AUTO 126 - Crank Motors - Historical
- AUTO 127 - Ignition Systems - Historical
- AUTO 127 - Ignition Systems - Historical
- AUTO 128 - Charging Systems - Historical
- AUTO 129 - DSO, GDMM, Scan Tool Diagnosis - Historical
- AUTO 129 - DSO, GDMM, Scan Tool Diagnosis - Historical
- AUTO 132 - Individualized Skills Training Lab - Historical
- AUTO 132A - Honda Individualized Skills Training Session A - Historical
- AUTO 132A - Honda Individualized Skills Training (IST) Session A - Historical
- AUTO 132B - Honda Individualized Skills Training (IST) Session B - Historical
- AUTO 132B - Honda Individualized Skills Training (IST) Session B - Historical
- AUTO 132C - Honda Individualized Skills Training (IST) Session C - Historical
- AUTO 132C - Honda Individualized Skills Training (IST) Session C - Historical
- AUTO 133 - Computerized Engine Management - Historical
- AUTO 133 - Computerized Engine Management - Historical
- AUTO 133 - Computerized Engine Management - Historical
- AUTO 134 - Advanced Engine Performance - Historical
- AUTO 135 - Air Conditioning Systems - Historical
- AUTO 136 - Automotive Occupational Work Experience-Parallel Plan - Historical
- AUTO 137 - Special Project - Historical
- AUTO 138 - Occupational Work Experience - Historical
- AUTO 138 - Occupational Work Experience - Historical
- AUTO 138 - Occupational Work Experience - Historical
- AUTO 141 - Clean Air Car Course - Historical
- AUTO 141 - Clean Air Car Course - Historical
- AUTO 142 - Automotive Electrical/Electronic Systems - Historical
- AUTO 143 - Engine Performance - Historical
- AUTO 144 - BAR OBD2 Update Training - Historical
- AUTO 145 - Enhanced Emission Diagnostics Level 2 - Historical
- AUTO 145 - Enhanced Emission Diagnostics Level 2 - Historical
- AUTO 146 - BAR-97 Transition Course/Loaded Mode Emission Testing - Historical
- AUTO 147 - BAR Update Training and Recertification - Historical
- AUTO 147A - BAR 2005 Update Training - Historical
- AUTO 147B - BAR 2007 Update Training - Historical
- AUTO 147C - BAR 2009 Update Training - Historical
- AUTO 147D - BAR 2011 Update Training - Historical
- AUTO 147E - BAR Update Training - Historical
- AUTO 150 - Shop Operations and Pre-Delivery Inspection Procedures - Historical
- AUTO 151 - Brake Systems (Ford Asset) - Historical
- AUTO 152 - Suspension and Alignment - Historical
- AUTO 153 - Engine Service Part 1 Ford Asset - Historical
- AUTO 154 - Engine Service Part 2 Ford Asset - Historical
- AUTO 155 - Automatic Transmission - Historical
- AUTO 156 - Automatic Transmission Part 2 - Historical
- AUTO 157 - Basic Auto Electrical Ford Asset - Historical
- AUTO 158 - Climate Control Ford Asset - Historical
- AUTO 159 - Engine Performance and Driveability Ford Asset - Historical
- AUTO 160 - Carburetion - Historical

- AUTO 162 - Fuel Injection - Historical
- AUTO 163 - Battery, Starting, Charging Systems - Historical
- AUTO 164 - Ignition Systems Ford Asset - Historical
- AUTO 165 - Diesel Engines Ford Asset - Historical
- AUTO 166 - Fuel Systems Ford Asset - Historical
- AUTO 167 - Advanced Automotive Electronics Ford Asset - Historical
- AUTO 169 - Ford Scan Tool Diagnostics - Historical
- AUTO 170 - Electrical Systems - Historical
- AUTO 170 - Electrical Systems - Historical
- AUTO 170 - Electrical Systems - Historical
- AUTO 171 - Engine Systems - Historical
- AUTO 171 - Engine Systems - Historical
- AUTO 172 - Chassis and Drivetrain Systems - Historical
- AUTO 173 - Automotive Service Operations - Historical
- AUTO 174 - Body & Chassis Electronics - Historical
- AUTO 175 - Welding and Fabrication - Historical
- AUTO 175 - Welding and Fabrication - Historical
- AUTO 180 - BAR 2003 Update Training - Historical
- AUTO 181A - Introduction to Alternative Fuel and Hybrid/Electric Vehicles - Historical
- AUTO 181A - Introduction to Alternative Fuel and Hybrid/Electric Vehicles - Historical
- AUTO 181A - Introduction to Alternative Fuel and Hybrid/Electric Vehicles - Historical
- AUTO 181B - Hybrid Electric Vehicle Maintenance and Repair - Historical
- AUTO 181B - Hybrid Electric Vehicle Maintenance and Repair - Historical
- AUTO 181B - Hybrid Electric Vehicle Maintenance and Repair - Historical
- AUTO 191 - Collision Electrical Diagnosis and Repair - Historical
- AUTO 202 - Bugged Vehicle Diagnosis - Historical
- AUTO 204 - Driver Assist Technology - Historical
- AUTO 210 - Automotive Technology Supervised Tutoring - Historical
- AUTO 500 - Math for Automotive Technology - Historical
- AUTO 500 - Math for Automotive Technology - Historical
- AUTO 501 - English for Automotive Technology - Historical
- AUTO 501 - Basic Terminology and Communication in Auto Technology - Active
- AUTO 501 - English for Automotive Technology - Historical

- **1. Identify and updates to curriculum since the last comprehensive program review, including and new programs and indicate the 6-year timeline for scheduled course outline revision. For CTE, the time line is 2 year.**

Since automotive is a CTE program, most updates to Curriculum have been made every two years. Some classes were not in the regular 2-year cycle but have been updated and are in review for Spring 2022. All certificates and degrees will be updated and in review in Fall 2022. The next cycle that all Curriculum will be updated will be in 2024.

- **2. Identify all the courses offered in the program and describe how these courses remain relevant in the discipline. For courses your program has not offered in the past two years, please discuss a plan on how to deal with these courses (if your program is not going to de-activate these courses, please explain why).**

The active courses in the program are:

AUTO 102-Automotive Systems-3.5 units

- This course will introduce students to the automotive industry and provide a basic overview of the eight areas of certification as specified by the National Institute for Automotive Service Excellence (ASE) and the National Automotive Technicians Education Foundation (NATEF). The course will examine the purpose, function, and operation of the major systems common to most automobiles. In addition, students will learn methodologies for inspecting and providing basic maintenance common to most vehicles. Students will work with the tools and equipment used for inspection, maintenance, repair, and diagnostic work.

AUTO 103-Light Line Technician-2 units

- This course will prepare students for entry level employment in the automotive field as a first-level maintenance technician. The course will also introduce students to the Express Service training that the American Honda Program provides. Each student is assigned various vehicles and performs routine maintenance, inspection, and basic performance testing tasks that are commonly performed at automobile dealerships. In addition to gaining hands-on experience, successful students will build teamwork and cooperative skills, improve their time management practices, and develop sound workmanship values.

AUTO 105-Suspension, Steering, and Alignment-3 units

- This course will cover, in both theory and practice, the proper diagnosis and repair of automobile steering and suspension systems. Students will learn to use computerized four wheel alignment equipment to diagnose and adjust vehicle alignment angles. Focus will be on adherence to proper service manual

procedures, and a sequential process of vehicle repair.

AUTO 106-Automotive Brake Systems-2 units

- This course is a study of mechanical and hydraulic brake components and systems. Emphasis will be on system operation, adjustment, testing, replacement, and repair procedures. Drum, disc, power assist, and ABS brake systems will also be studied.

AUTO 117- Automotive Principles-1.5 units

- This is an introductory course for prospective automotive majors. Students will become familiar with automobile ownership, consumer maintenance, terminology, tools, procedures, and a basic overview of the major vehicle systems.

AUTO 118-Fuel Systems/Emission Controls-2.5 Units

- This course covers automotive fuel systems, including: tanks, pumps, lines, filters, idle and vacuum control devices, electronic fuel injection, and emission control devices. Emphasis will be placed on combustion chemistry and emission testing procedures, and the diagnosis and repair of fuel and emission control system components. Students will diagnose and repair hard start, no-start, poor performance, and emission failures on a range of vehicles using the latest test equipment and methods. This course provides significant preparation and experience for those pursuing licensing as CA emission technicians.

AUTO 119-Introduction to Engine Performance-2.5 Units

- This course is part of the Automotive Basic Skills track emphasizing engine systems relevant to performance and driveability. Classroom theory, engine analyzers and test equipment will be utilized to diagnose modern automobile engine systems. Engine diagnostic strategies will be performed in the lab as they would be in the workplace. In addition to gaining hands-on experience, successful students will build teamwork and cooperative skills, improve their time management practices, and develop sound workmanship values.

AUTO 120- Automatic Transmission Systems-2.5 Units

- This course will prepare students to diagnose and repair front and rear wheel drive automatic transmission systems. Topics include: stall and pressure testing, torque converters, planetary, CVT, and helical gear systems, overhaul practices, valve body repair, and on-car service techniques in both theory and practical application. Computerized powertrain diagnosis and repair will also be explored. Additional electronic transmission diagnosis and repair techniques are studied in AUTO 174, Body Chassis Electronics. Both courses are recommended preparation for the ASE Automatic Transmission Exam.

AUTO 121-Manual Transmission and Drivetrain Systems-2 Units

- This course will prepare students to diagnose and repair front and rear wheel drive manual transmission systems, clutches, drive lines, differentials, and CV axles. Planetary, helical, hypoid, bevel, and straight cut gear systems will be studied including ratio calculation and torque multiplication. Overhaul practices, including teardown, measurement, inspection, repair, and reassembly will be covered. Four wheel drive systems such as automatic locking hubs, transfer cases, and electronic drivetrain systems are also studied to prepare students for the ASE Manual Transmission Exam.

AUTO 122-Advanced Electrical Systems-3 Units

- This is an advanced automotive electrical course stressing diagram-based diagnostic methods. Students will design and build functioning circuits and systems, as well as compute and measure all aspects of performance. Students will learn to diagnose and repair a wide variety of circuit, system, and component faults in general electrical, starting, charging, lighting, instrumentation, accessory, climate control, audio, navigation, and SRS systems. Analytical skills and use of specialized test equipment will be stressed to provide students with excellent and highly marketable diagnostic abilities.

AUTO 125-Automotive Electronics-2 Units

- This course explores the application of electronic components and systems within a modern vehicle. Students will learn basic semiconductor theory, and operation and testing of a wide variety of input and output devices. Multiplex (vehicle intranet) systems, serial communications, and diagnostic practices will also be covered.

AUTO 127-Ignition Systems-2 Units

- This course covers the theory, diagnosis and repair of modern automotive ignition systems. Topics include ignition system function, combustion requirements, primary system triggering, switching components and operation, secondary ignition components, ignition timing devices, electronic spark timing function and strategy, Waste Spark, and Coil-on-plug systems. Course also includes testing methods, fault isolation techniques and Oscilloscope testing, waveform interpretation, as well as maintenance and driveability fault corrections.

AUTO 132A- Honda Individualized Skills Training (IST) Session A-1.5 Units

- This course allows automotive students to complete Honda Individualized-Skills-Training. This course includes "hands-on" skill modules covering General and Express-Service. Students will also practice Honda Express-Service choreography.

AUTO 132B- Honda Individualized Skills Training (IST) Session B-1.5 Units

- This course introduces the student to Honda manufacture training curriculum. Student's progress in this and other courses leads to Honda manufacturer certification. This course includes "hands-on" skill modules covering Express-Service and fuel-system skill modules.

AUTO 132C- Honda Individualized Skills Training (IST) Session C-1.5 Units

- This course introduces the student to Honda manufacture training curriculum. Student's progress in this and other courses leads to Honda manufacturer certification. Topics of focus are Express Lube Choreography, air conditioning, and steering and suspension.

AUTO 135- Air Conditioning Systems-2 Units

- This course will prepare students to diagnose and repair modern heating ventilation and air conditioning systems. Topics studied include systems inspection, diagnosis, and repair, leak testing, performance testing, mode control, refrigerant identification, recovery, flushing, evacuation, recharging, and safe handling procedures. Students will also learn to diagnose component malfunctions and using various refrigerant types. AUTO 135 and 174 prepare students for the ASE Air Conditioning exam.

AUTO 138-Occupational Work Experience-1 to 8 Units

- Occupational Work Experience is designed for students who work or volunteer in a field related to their career major. Students are required to provide evidence that they are enrolled in an automotive technology course(s). Students can earn one unit of credit for each 60 hours of unpaid volunteer time or

75 hours of paid work during the semester. Students can repeat Occupational Work Experience, combined with General Work Experience, or alone, up to a maximum of 16 units. Internship/job placement is not guaranteed.

AUTO 170-Electrical Systems-3 Units

- This course introduces students and entry level automotive technicians to the automotive electrical system. The course covers DC electrical theory, magnetism, Ohm's law, series and parallel circuits, passive components, and system dynamics. Students learn to calculate and measure voltage, resistance and current in theoretical and live circuits, build and test working models of typical automotive electrical systems using table top components and industry specific simulators, and practice diagnosis and repair procedures on a variety of vehicles. Students will also develop an understanding of modern electrical test equipment, such as DMMs, GDMs, and DSO's, and industry standard troubleshooting and repair procedures. This course will prepare students for the ASE A6, Automotive Electrical Systems, certification examination.

AUTO 171-Engine Systems-2.5 Units

- This is an intermediate level course that covers engine theory and repair procedures found in the latest NATEF engine repair task list. The students will disassemble, measure, and reassemble an engine(s) according to manufacturer-specific service instructions. Engine support systems for cooling and lubrication are discussed. This course prepares students to take the National Automotive Service Excellence ASE "Engine Repair, A1" test.

AUTO 172-Chassis and Drivetrain Systems-2.5 Units

- This intermediate level course will introduce students to the service and repair procedures of drive-train systems, brakes, clutches, steering, suspension, alignment, and related measurement practices. AUTO 172 is designed to prepare students for the chassis drive-train track and stresses inspection and routine maintenance services of under-car systems such as CV axles, brake friction components, universal joints, clutch systems, and transmissions. Satisfactory completion of this course is required for all Automotive degree options.

AUTO 173-Automotive Service Operations-2 Units

- This course will provide overview information about careers in Automotive Technology. Preparation for "on the job" experience will include presentations and discussions about professionalism, work ethics, diplomacy, consumerism, safety, hazardous wastes, tools and equipment, as well as employee, employer, and customer relations.

AUTO 174-Body & Chassis Electronics-2 Units

- This course provides students with the marketable skills needed for the diagnosis and repair of modern electronic body-chassis control systems. It is designed to complement AUTO 105, 106, 120, and 135 Chassis/Drivetrain classes by studying ABS, electronically controlled steering, suspension, AC, and transmission systems. Students will be using state-of-the-art equipment such as: lab scopes, ETMs, scanners, DVOMs, and other related resources. Students will apply knowledge of Ohm's Law, digital logic, parasitic load testing, short/open location, communication protocols, and other technical resources.

AUTO 181A-Introduction to Alternative Fuel and Hybrid/Electric Vehicles-2 Units

- This course will examine a variety of alternative fuels and propulsion systems used in modern automotive vehicles. The advantages and limitations of alternative fuels used in internal combustion engines (ICE) will be discussed. The topics on alternative propulsion systems will include the basic theory of operation, construction, and safety. The unique dangers surrounding alternative fuel and propulsion vehicles will be explored, and how to minimize the risks. This course will also cover what is needed to operate safely and effectively around these vehicles.

AUTO 181B-Hybrid Electric Vehicle Maintenance and Repair-3 Units

- This is an advanced course that provides an in-depth study of the technology, maintenance, and repair of hybrid, plug-in, and all electric light duty passenger vehicles. Basic diagnostic, repair, and maintenance procedures of the unique systems associated with hybrid and electric vehicles will be discussed and practiced. Special tools and diagnostic equipment will be used during the laboratory exercises.

AUTO 182A-Tesla Service Technician Training (Session A)-3 Units

- This course is part of a series of four courses that will provide the technical skills necessary to gain successful employment with TESLA Motors as a service technician. The focus of this course is to provide an overview of Tesla History, Safety, Product, Specialized Tools, High Voltage System, and Service Operations. This course is suitable for students who have completed a two-year automotive technology program or have experience as a vehicle service technician. A formal application and interview process are required for acceptance into this course.

AUTO 182B-Tesla Service Technician Training (Session B)-4 Units

- This course is part of a series of four courses that will provide the technical skills necessary to gain successful employment with TESLA Motors as a service technician. The focus of this course is to provide technical service training on Electrical Fundamentals, Thermal System and HVAC, and Chassis Systems. This course is suitable for students who have completed a two-year automotive technology program or have experience as a vehicle service technician. A formal application and interview process are required for acceptance into this course.

AUTO 182C-Tesla Service Technician Training (Session C)-4 Units

- This course is part of a series of four courses that will provide the technical skills necessary to gain successful employment with TESLA Motors as a service technician. The focus of this course is to provide technical service training on Advanced Electrical, HV System, and Penthouse. This course is suitable for students who have completed a two-year automotive technology program or have experience as a vehicle service technician. This course is a required course for TESLA Motors Service Technician. A formal application and interview process are required for acceptance into this course.

AUTO 182D-Tesla Service Technician Training (Session D)-4 Units

- This course is part of a series of four courses that will provide the technical skills necessary to gain successful employment with TESLA Motors as a service technician. The focus of this course is to provide technical service training on Driver Assist, Panoramic Roof, and Infotainment Systems. This course is suitable for students who have completed a two-year automotive technology program or have experience as a vehicle service technician. This course is a required course for TESLA Motors Service Technician. A formal application and interview process are required for acceptance into this course.

AUTO 190-Noise, Vibration, and Harshness Diagnosis/Repair-1.5 Units

- This course presents manufacturer specified methods to evaluate, locate, and repair noise, vibration, and harshness issues in current automobiles and light trucks.

AUTO 204-Driver Assist Technology-1.5 Units

- This course addresses the technology of driver-assist systems used in modern vehicles to help a vehicle driver avoid collisions and assist in driving maneuvers with limited visibility and reaction time. The student will be presented with various technologies and the skills needed to calibrate these systems if they are replaced due to component failure or following collision repairs.

AUTO 500-Math for Automotive Technology-0 Units

- This course of instruction will develop specialized mathematical reasoning and computational skills for use in automotive technology applications. Areas of study will be geometry, fractions, decimals, unit conversion, measurement, and related functions used in industry.

AUTO 501-Basic Terminology and Communication in Auto Technology-0 Units

- This course is an introduction to the terminology commonly used in the automotive industry. This course is intended to improve reading comprehension of typical automotive technical manuals and textbooks. Students will learn how to prepare work orders, documents, and common correspondence used in the automotive industry. This is part of a non-credit pathway designed to improve the reading and writing skills of the automotive professional.

These courses cover relevant material for foundational skills, drivetrain and chassis theory, electric and fuel theory, high-voltage technology, and advanced electrical theory. Recently deactivated courses for smog and emissions control theory are to be updated for future release in 2023. Programs have been updated to reflect any deactivated courses.

- 3. If you have a degree or certificate, please include a diagram of your program's guided pathways program map. (A program map indicates courses suggested for each semester, across two years, upon completion a student would qualify for a degree/certificate).

Course	Foundation Cert	Electric Cert	Tesla Cert & Hybrid	Chasis Cert	Honda Cert	Fall 2020 Morning	Fall 2020 Morning	Fall 2020 Morning	Fall 2020 Afternoon	Fall 2020 Afternoon	Fall After
102 Auto Systems	X	X	X	X	X		1			1	
103 Light Line	X	X	X	X	X		1			1	
105 Susp/Steer			X	X	X		1				
106 Brakes			X	X	X		1				
118 Fuel/Emission		X									
119 Eng Perf	X	X	X	X	X		1			1	
120 Auto Trans				X	X						
121 Man Trans				X	X						
122 Adv Electrical		X	X				1				
125 Electronics		X	X				1				
127 Ign Systems		X									
132A Honda IST					X					1	
132 B or C Honda IST					X						
135 Air Conditioning			X	X	X						
138 Work Exp											
170 Elec Core	X	X	X	X	X					1	
171 Eng Core				X	X		1				
172 Susp Core				X	X					1	
173 Service Op	X	X		X	X					1	
174 Body/Chassis			X	X	X						
181A Intro Hybrid		X	X							1	
181B Hybrid Maint		X	X							1	
Numer of Courses	5	12	12	13	14		9			9	
evening 132A Honda IST											
evening 132 B or C Honda IST											
173 Service Op											
Foundational Cert											
Electrical Cert											
Tesla Hybrid											
Chassis Drivetrain Cert											
Honda											

- 4. Identify and describe innovative strategies or pedagogy your department/program developed/offered to maximize student learning and success. How did they impact student learning and success?

In addition to verbal lecture and text reading, the program has been using an interactive automotive learning program. The online program requires text reading and question answering. Until the correct answer is given, the online program will prevent the student from continuing and completing the exercise. Having an interactive program that requires student interaction prepares them before lab where they will be able to practice on a vehicle or component. With multiple types of reinforcement of theory and hands-on exercises, Automotive students are more engaged in learning and become better prepared for the workforce environment.

- 5. Discuss plans for future curricular development and/or program degrees & certificates included) modification.

Plans for future curriculum include an update of the Smog curriculum and certificate, further condensed certificates and degrees to allow students more flexibility with their schedules and greater completion rates, and development of a Bachelorette program.

- **6. Describe how your program is articulated with High School Districts, and/or other four year institutions. (Include articulation agreements, CID, ADTs...)**

Currently we have dual-enrollment with Silicon Valley Career Tech Ed, Independence High School, and Wilcox High School. Students can take Auto 117, earn college credits, and continue their education at EVC after High School. Our program does not have courses that transfer to four-year institutions.

- **7. If external accreditation or certification is required, please state the certifying agency and status of the program.**

The program requires automotive certification from ASE Alliance, formerly known as NATEF. Accreditation is given every five years with a mid-term accreditation due in Spring of 2022. The program is current with its accreditation.

Student Learning Outcome and Assessment

Related Assessments

Student Learning Outcomes

AUTO 117 - Automotive Principles - Demonstrate the proper use and identification of basic hand tools.

AUTO 117 - Automotive Principles - Demonstrate the proper vehicle fluid maintenance, including inspection, identifications and proper level.

AUTO 117 - Automotive Principles - Describe the available career opportunities within the automotive and transport sector.

AUTO 500 - Math for Automotive Technology - Develop formulas and calculate area for standard 3D geometric figures, measure angles with a protractor, determine gear ratios from pulley size or number of teeth, and define pressure as a function of force and area.

AUTO 500 - Math for Automotive Technology - Apply Ohm's law to simple circuits, define place values, and round to appropriate place values.

AUTO 500 - Math for Automotive Technology - Calculate parts mark-up, labor charges, sales tax, and final estimated total.

AUTO 501 - Basic Terminology and Communication in Auto Technology - Demonstrate command of the English language when writing or speaking.

AUTO 501 - Basic Terminology and Communication in Auto Technology - Demonstrate how to look up automotive dictionary entries and glossary definitions found in most automotive textbooks.

AUTO 501 - Basic Terminology and Communication in Auto Technology - Demonstrate the ability to write statements explaining the tests performed, failures found and corrective actions taken on automotive work orders.

AUTO 102 - Automotive Systems - Demonstrate principles of safe shop practices.

AUTO 102 - Automotive Systems - Name and describe the use of tools and equipment used for inspections, maintenance, diagnosis and repair.

AUTO 102 - Automotive Systems - Describe the basic function and operation of major systems and parts common to most automotive vehicles.

AUTO 102 - Automotive Systems - Demonstrate basic functional test procedures used to evaluate the major systems and parts common to most automotive vehicles.

AUTO 102 - Automotive Systems - Describe the automotive industry and its employment opportunities.

AUTO 102 - Automotive Systems - Explain how profits are made, and what an individual employee contributes to operations

AUTO 102 - Automotive Systems - Demonstrate principles of safe shop practices.

AUTO 102 - Automotive Systems - Correctly name and describe the tools and the equipment used for inspections, maintenance, diagnosis and repair.

AUTO 102 - Automotive Systems - Describe the basic function and operation of major systems and parts common to most automotive vehicles.

AUTO 102 - Automotive Systems - Demonstrate basic functional test procedures used to evaluate the major systems and parts common to most automotive vehicles.

AUTO 102 - Automotive Systems - Describe the automotive industry and its employment opportunities.

AUTO 102 - Automotive Systems - Demonstrate principles of safe shop practices.

AUTO 102 - Automotive Systems - Correctly name and describe the tools and the equipment used for inspections, maintenance, diagnosis and repair.

AUTO 102 - Automotive Systems - Describe the basic function and operation of major systems and parts common to most automotive vehicles.

AUTO 102 - Automotive Systems - Demonstrate basic functional test procedures used to evaluate the major systems and parts common to most automotive vehicles.

AUTO 103 - Light Line Technician - Demonstrate proper shop safety practices and procedures when performing laboratory exercises.

AUTO 103 - Light Line Technician - Demonstrate the proper use of precision measurement tools.

AUTO 103 - Light Line Technician - Demonstrate that proper routine maintenance procedures were followed when performing laboratory tasks.

AUTO 103 - Light Line Technician - Demonstrate the proper interpretation of measurement and inspection specifications when performing laboratory tasks.

AUTO 103 - Light Line Technician - Demonstrate proper shop safety practices and procedures when performing laboratory exercises.

AUTO 103 - Light Line Technician - Demonstrate the proper use of precision measurement tools.

AUTO 103 - Light Line Technician - Demonstrate that proper routine maintenance procedures were followed when performing laboratory tasks.

AUTO 103 - Light Line Technician - Demonstrate the proper interpretation of measurement and inspection specifications when performing laboratory tasks.

AUTO 103 - Light Line Technician - Demonstrate that proper routine maintenance procedures were followed during when performing laboratory exercises.

AUTO 103 - Light Line Technician - Demonstrate the proper use of precision measurement tools.

AUTO 103 - Light Line Technician - Demonstrate that proper routine maintenance procedures were followed when performing laboratory task.

AUTO 103 - Light Line Technician - Demonstrate the proper interpretation of measurement and inspection specifications when performing laboratory tasks.

AUTO 103 - Light Line Technician - Successfully perform a minimum of 70 percent of all assigned laboratory tasks.

AUTO 105 - Suspension, Steering, and Alignment - Diagnose malfunctions using the accepted diagnostic procedure.

AUTO 105 - Suspension, Steering, and Alignment - Disassemble, inspect, measure, adjust, repair, and correctly reassemble steering and suspension systems.

AUTO 105 - Suspension, Steering, and Alignment - Follow proper inspection procedures and locate and repair malfunctions to applicable automotive systems using computerized four wheel alignment systems.

AUTO 105 - Suspension, Steering, and Alignment - Diagnose malfunctions using a sequential diagnostic procedure.

AUTO 105 - Suspension, Steering, and Alignment - Diagnose and repair automotive systems, closely adhering to manufacturer guidelines of repair.

AUTO 105 - Suspension, Steering, and Alignment - Use four-wheel alignment equipment for alignment diagnosis and repair.

AUTO 106 - Automotive Brake Systems - Properly inspect, measure, and diagnose brake system malfunctions such as: low peddle, noise, and vibration

AUTO 106 - Automotive Brake Systems - Correctly measure and machine brake drums and rotors to manufacturer's specifications

AUTO 106 - Automotive Brake Systems - Accurately remove, install, and adjust brake friction materials to specifications

AUTO 106 - Automotive Brake Systems - Correctly bleed brake hydraulic systems using both pressure and vacuum bleeding methods

AUTO 106 - Automotive Brake Systems - Interpret pressure gauges to determine proper pressure differential function and recommend corrective action if needed

AUTO 106 - Automotive Brake Systems - Incorporate proper safety procedures into work processes and follow OSHA guidelines

AUTO 106 - Automotive Brake Systems - Use scanner and related diagnostic equipment to extract ABS codes and determine proper repair procedures

AUTO 106 - Automotive Brake Systems - Use a hand held scope to graph ABS sine waves and locate inconsistent waveforms for further inspection

AUTO 106 - Automotive Brake Systems - Correctly disassemble, hone, clean, and reassemble brake hydraulic components such as wheel cylinders and calipers

AUTO 106 - Automotive Brake Systems - Properly cut, bend, and flair a brake line to specifications

AUTO 106 - Automotive Brake Systems - Diagnose brake master cylinder and power booster malfunctions and take corrective action

AUTO 106 - Automotive Brake Systems - Inspect and adjust load sensing proportioning valve

AUTO 106 - Automotive Brake Systems - Inspect, adjust, or repair both integrated disc and drum type parking brake systems

AUTO 107 - Valve Train - Utilize service information in order to perform engine diagnosis and repair.

AUTO 107 - Valve Train - Demonstrate proficiency at removing and replacing timing belts and chains using manufacturers' procedures and safety practices.

AUTO 107 - Valve Train - Assess engine performance using proper diagnostic tools and proper interpretation of test data.

AUTO 107 - Valve Train - Utilize specialized engine machining equipment to recondition valve train components.

AUTO 107 - Valve Train - Successfully perform specified laboratory tasks required by NATEF

AUTO 107 - Valve Train - Demonstrate proficiency with service information and ability to apply it toward proper valve train disassembly and assembly.

AUTO 107 - Valve Train - Identify and accurately describe the design and operation of various valve train systems.

AUTO 107 - Valve Train - Properly diagnose, verify, and locate valve train failures, wear, and/or damage.

AUTO 109 - Engine Blueprint - Discuss safety procedures and follow safety guidelines.

AUTO 109 - Engine Blueprint - Search for and apply information with specifications for the purpose of testing and repairing engine components.

AUTO 109 - Engine Blueprint - Demonstrate proper tool and equipment usage used in engine repair.

AUTO 109 - Engine Blueprint - Test internal engine components and make comparison of their metallurgical characteristics.

AUTO 109 - Engine Blueprint - Explain cam/crank relationships while learning to phase them with a degree wheel.

AUTO 109 - Engine Blueprint - Discuss the increased horsepower when upgrades, such as nitrous oxide, are introduced.

AUTO 111 - Auto Welding - Discuss safety procedures and follow safety guidelines

AUTO 111 - Auto Welding - Demonstrate proper welding techniques and perform professional looking welds

AUTO 111 - Auto Welding - Explain relationships between various welding equipment and tools utilized in the welding industry

AUTO 111 - Auto Welding - Test various welds for proper fusion and penetration

AUTO 118 - Fuel Systems/Emission Controls - Explain the purpose and implementation of federal and state emission laws and the environmental impact of vehicle emissions.

AUTO 118 - Fuel Systems/Emission Controls - Apply fuel systems/emission control theory to understand the operation of typical automotive fuel/emission control system components and systems.

AUTO 118 - Fuel Systems/Emission Controls - Utilize specialized test equipment to obtain measurements and data from vehicle systems.

AUTO 118 - Fuel Systems/Emission Controls - Utilize service information and software (electrical diagrams, diagnostic charts, specifications) in order to perform diagnosis and repair of vehicle components and systems.

AUTO 118 - Fuel Systems/Emission Controls - Demonstrate proficiency, safe, and professional practices in the service and repair of modern vehicle fuel/emission control systems.

AUTO 118 - Fuel Systems/Emission Controls - Apply critical thinking skills to determine the cause of common fuel system/emission control system fault symptoms and failures.

AUTO 118 - Fuel Systems/Emission Controls - Discuss the need for continued education in the rapidly changing technological industry they have sought to enter.

AUTO 119 - Introduction to Engine Performance - Demonstrate proper shop safety practices and procedures when performing laboratory exercises.

AUTO 119 - Introduction to Engine Performance - Demonstrate the proper use of diagnostic tools.

AUTO 119 - Introduction to Engine Performance - Demonstrate proper testing and diagnostic procedures when performing laboratory tasks.

AUTO 119 - Introduction to Engine Performance - Demonstrate the proper interpretation of diagnostic data, measurements, and specifications when performing laboratory tasks.

AUTO 119 - Introduction to Engine Performance - Demonstrate proper shop safety practices and procedures when performing laboratory exercises.

AUTO 119 - Introduction to Engine Performance - Demonstrate the proper use of diagnostic tools.

AUTO 119 - Introduction to Engine Performance - Demonstrate proper testing and diagnostic procedures when performing laboratory tasks.

AUTO 119 - Introduction to Engine Performance - Demonstrate the proper interpretation of diagnostic data, measurements, and specifications when performing laboratory tasks.

AUTO 119 - Introduction to Engine Performance - Demonstrate proper shop safety practices and procedures when performing laboratory exercises.

AUTO 119 - Introduction to Engine Performance - Demonstrate the proper use of diagnostic tools.

AUTO 119 - Introduction to Engine Performance - Demonstrate proper testing and diagnostic procedures when performing laboratory tasks.

AUTO 119 - Introduction to Engine Performance - Demonstrate the proper interpretation of diagnostic data, measurements, and specifications when performing laboratory tasks.

AUTO 120 - Automatic Transmission Systems - Diagnose malfunctions using the accepted diagnostic procedure.

AUTO 120 - Automatic Transmission Systems - Disassemble, measure, inspect, adjust, repair, and correctly reassemble automatic transmission systems.

AUTO 120 - Automatic Transmission Systems - Follow proper inspection procedures and locate and repair malfunctions to applicable automotive transmission systems using computerized diagnostic equipment, pressure testing systems, and diagnostic service literature.

AUTO 121 - Manual Transmission and Drivetrain Systems - Diagnose malfunctions using the accepted and standard diagnostic procedures.

AUTO 121 - Manual Transmission and Drivetrain Systems - Disassemble, measure, inspect, adjust, repair, and correctly reassemble manual transmission and drivetrain systems.

AUTO 121 - Manual Transmission and Drivetrain Systems - Follow proper inspection procedures and locate and repair malfunctions to applicable transmission and drivetrain systems using diagnostic equipment and appropriate service literature.

AUTO 122 - Advanced Electrical Systems - Apply electrical/electronics theory and appropriate test methods to repair faults in typical automotive electrical/electronic components and systems.

AUTO 122 - Advanced Electrical Systems - Utilize specialized test equipment to obtain measurements and data from vehicle circuits and systems to verify proper and improper operation.

AUTO 122 - Advanced Electrical Systems - Utilize service information and software (electrical diagrams, diagnostic charts, specifications) to perform diagnosis and repair of vehicle components and systems.

AUTO 122 - Advanced Electrical Systems - Demonstrate proficiency, and safe and professional practices in the service and repair of modern vehicle electrical systems.

AUTO 122 - Advanced Electrical Systems - Apply critical thinking skills to determine the cause of simple to advanced electrical system fault symptoms and failures.

AUTO 122 - Advanced Electrical Systems - Discuss the need for continued education in the rapidly changing technological industry

AUTO 125 - Automotive Electronics - Explain the use of electronic control systems in a modern automobile

AUTO 125 - Automotive Electronics - Perform testing and analysis of electronic components and systems using appropriate diagnostic equipment

AUTO 125 - Automotive Electronics - Verify component and system faults, formulate a plan for diagnosis, execute to solution

AUTO 125 - Automotive Electronics - Perform appropriate repair/replacement procedures per manufacturer's recommendation

AUTO 125 - Automotive Electronics - Validate repair success via OBD-II monitors and/or other means

AUTO 127 - Ignition Systems - Apply ignition system theory to describe/demonstrate the operation of typical automotive ignition system components and systems.

AUTO 127 - Ignition Systems - Build and test working model of an HEI ignition system, explaining its operation and diagnostic procedures.

AUTO 127 - Ignition Systems - Utilize specialized test equipment to obtain measurements and data from vehicle ignition and engine control systems.

AUTO 127 - Ignition Systems - Utilize service information and software (electrical diagrams, diagnostic charts, ignition system specifications) in order to perform diagnosis and repair of ignition system components and functionality

AUTO 127 - Ignition Systems - Demonstrate proficiency, and safe and professional practices in the service and repair of modern vehicle ignition systems.

AUTO 127 - Ignition Systems - Apply critical thinking skills to determine the cause of common ignition system fault symptoms and failures.

AUTO 127 - Ignition Systems - Discuss the need for continued education in the rapidly changing technological industry.

AUTO 127 - Ignition Systems - Apply ignition system theory to describe/demonstrate the operation of typical automotive ignition system components and systems.

AUTO 127 - Ignition Systems - Utilize specialized test equipment to obtain measurements and data from vehicle ignition and engine control systems.

AUTO 127 - Ignition Systems - Utilize service information and software (electrical diagrams, diagnostic charts, ignition system specifications) in order to perform diagnosis and repair of ignition system components and functionality

AUTO 127 - Ignition Systems - Demonstrate proficiency, and safe and professional practices in the service and repair of modern vehicle ignition systems.

AUTO 127 - Ignition Systems - Apply critical thinking skills to determine the cause of common ignition system fault symptoms and failures.

AUTO 127 - Ignition Systems - Discuss the need for continued education in the rapidly changing technological industry.

AUTO 129 - DSO, GDMM, Scan Tool Diagnosis - Apply training skills to select and connect appropriate test equipment to a variety of vehicle systems.

AUTO 129 - DSO, GDMM, Scan Tool Diagnosis - Apply training skills to select and engage proper setup procedures to obtain appropriate test data.

AUTO 129 - DSO, GDMM, Scan Tool Diagnosis - Utilize scan tools to evaluate and control vehicle system operation, and re-flash operating software.

AUTO 129 - DSO, GDMM, Scan Tool Diagnosis - Utilize service information and software (electrical diagrams, diagnostic charts, vehicle system specifications) in order to perform diagnosis of system components and operation.

AUTO 129 - DSO, GDMM, Scan Tool Diagnosis - Demonstrate proficiency, and safe, professional practices in the diagnosis of modern vehicle systems.

AUTO 129 - DSO, GDMM, Scan Tool Diagnosis - Apply critical thinking skills to determine the cause of common component and system fault symptoms and failures.

AUTO 129 - DSO, GDMM, Scan Tool Diagnosis - Discuss the need for continuing education in the rapidly changing technological industry they have sought to enter.

AUTO 129 - DSO, GDMM, Scan Tool Diagnosis - Select and connect appropriate test equipment to a variety of vehicle systems.

AUTO 129 - DSO, GDMM, Scan Tool Diagnosis - Select and engage proper setup procedures to obtain appropriate test data.

AUTO 129 - DSO, GDMM, Scan Tool Diagnosis - Utilize scan tools to evaluate and control vehicle system operation, and re-flash operating software.

AUTO 129 - DSO, GDMM, Scan Tool Diagnosis - Utilize service information and software (electrical diagrams, diagnostic charts, vehicle system specifications) in order to perform diagnosis of system components and operation.

AUTO 129 - DSO, GDMM, Scan Tool Diagnosis - Demonstrate proficiency, and safe, professional practices in the diagnosis of modern vehicle systems.

AUTO 129 - DSO, GDMM, Scan Tool Diagnosis - Determine the cause of common component and system fault symptoms and failures.

AUTO 132 - Individualized Skills Training Lab - Diagnose malfunctions using the Five-Step diagnostic procedure

AUTO 132 - Individualized Skills Training Lab - Disassemble, measure, inspect, adjust, repair, and correctly reassemble complex mechanical systems

AUTO 132 - Individualized Skills Training Lab - Follow proper inspection procedures and locate and repair malfunctions to applicable automotive systems

AUTO 132A - Honda Individualized Skills Training Session A - Diagnose malfunctions using the 5 step diagnostic procedure.

AUTO 132A - Honda Individualized Skills Training Session A - Disassemble, measure, inspect, adjust, repair, and correctly reassemble engine systems.

AUTO 132A - Honda Individualized Skills Training Session A - Utilize proper inspection procedures to locate and repair malfunctions applicable to automotive systems using Honda scanners.

AUTO 132A - Honda Individualized Skills Training (IST) Session A - Demonstrate the Honda 5-step repair process.

AUTO 132A - Honda Individualized Skills Training (IST) Session A - Complete a Honda Express-Service on a vehicle within thirty minutes with little errors.

AUTO 132A - Honda Individualized Skills Training (IST) Session A - Describe the Honda philosophy and its benefits to society.

AUTO 132B - Honda Individualized Skills Training (IST) Session B - Demonstrate the Honda 5-step repair process.

AUTO 132B - Honda Individualized Skills Training (IST) Session B - Complete a Honda Express-Service on a vehicle within thirty minutes with little errors.

AUTO 132B - Honda Individualized Skills Training (IST) Session B - Describe the Honda philosophy and its benefits to society

AUTO 132B - Honda Individualized Skills Training (IST) Session B - Diagnose malfunctions using the 5 step diagnostic procedure.

AUTO 132B - Honda Individualized Skills Training (IST) Session B - Follow proper procedures and locate malfunctions to applicable automotive systems using Honda scanners.

AUTO 132B - Honda Individualized Skills Training (IST) Session B - Inspect measure, adjust, and repair electrical and fuel systems.

AUTO 132C - Honda Individualized Skills Training (IST) Session C - Diagnose malfunctions using the 5step diagnostic procedure.

AUTO 132C - Honda Individualized Skills Training (IST) Session C - Follow proper procedures and locate malfunctions to applicable automotive systems using Honda scanners.

AUTO 132C - Honda Individualized Skills Training (IST) Session C - Inspect measure, adjust, and repair multiplexed systems using advance scope, scanner and information retrieval functions.

AUTO 132C - Honda Individualized Skills Training (IST) Session C - Demonstrate the Honda 5-step repair process.

AUTO 132C - Honda Individualized Skills Training (IST) Session C - Complete a Honda Express-Service on a vehicle within thirty minutes with little errors.

AUTO 132C - Honda Individualized Skills Training (IST) Session C - Describe the Honda philosophy and its benefits to society

AUTO 133 - Computerized Engine Management - Identify, test, and repair computerized engine control system components.

AUTO 133 - Computerized Engine Management - Demonstrate proficiency in solving engine control system failures, poor performance, and other irregular operation.

AUTO 133 - Computerized Engine Management - Demonstrate proficiency in the utilization of on-board diagnostics systems, scan tool operation, and their application in the diagnostic process.

AUTO 133 - Computerized Engine Management - Identify, test, and repair computerized engine control system components.

AUTO 133 - Computerized Engine Management - Demonstrate proficiency in solving engine control system failures, poor performance, and other irregular operation.

AUTO 133 - Computerized Engine Management - Demonstrate proficiency using the ASE Composite Vehicle III service manual and performing virtual diagnosis and repairs.

AUTO 133 - Computerized Engine Management - Demonstrate proficiency in the utilization of on-board diagnostics systems, scan tool operation, and their application in the diagnostic process.

AUTO 133 - Computerized Engine Management - Demonstrate proficiency, and safe and professional practices in the service and repair of modern vehicle electrical systems.

AUTO 133 - Computerized Engine Management - Assess system condition to determine complex system enable criteria, operating strategies, and adaptive PCM learning.

AUTO 133 - Computerized Engine Management - Identify, test, and repair computerized engine control system components.

AUTO 133 - Computerized Engine Management - Demonstrate proficiency in solving engine control system failures, poor performance, and other irregular operation.

AUTO 133 - Computerized Engine Management - Demonstrate proficiency using the ASE Composite Vehicle III service manual and performing virtual diagnosis and repairs.

AUTO 133 - Computerized Engine Management - Apply critical thinking skills to determine the cause of complex system enable criteria, operating strategies, and adaptive PCM learning.

AUTO 133 - Computerized Engine Management - Demonstrate proficiency in the utilization of on-board diagnostics systems, scan tool operation, and their application in the diagnostic process.

AUTO 133 - Computerized Engine Management - Demonstrate proficiency, and safe and professional practices in the service and repair of modern vehicle electrical systems.

AUTO 133 - Computerized Engine Management - Recognize the need for continued education in the rapidly changing technological industry.

AUTO 134 - Advanced Engine Performance - Identify, test, and repair computerized engine control system components.

AUTO 134 - Advanced Engine Performance - Demonstrate proficiency in solving engine control system failures, poor performance, and other irregular operation.

AUTO 134 - Advanced Engine Performance - Demonstrate proficiency using the ASE Composite Vehicle III service manual and performing virtual diagnosis and repairs.

AUTO 134 - Advanced Engine Performance - Apply critical thinking skills to determine the cause of complex system enable criteria, operating strategies, and adaptive PCM learning.

AUTO 134 - Advanced Engine Performance - Demonstrate proficiency in the utilization of on-board diagnostics systems, scan tool operation, and their application in the diagnostic process.

AUTO 134 - Advanced Engine Performance - Demonstrate proficiency, and safe and professional practices in the service and repair of modern vehicle electrical systems.

AUTO 134 - Advanced Engine Performance - Recognize the need for continued education in the rapidly changing technological industry they have sought to enter.

AUTO 135 - Air Conditioning Systems - Diagnose malfunctions using the accepted diagnostic procedures.

AUTO 135 - Air Conditioning Systems - Recover, evacuate, adjust, repair, recharge, and leak test HVAC systems.

AUTO 135 - Air Conditioning Systems - Follow proper inspection procedures and locate and repair malfunctions to applicable HVAC systems using diagnostic equipment and appropriate service literature.

AUTO 138 - Occupational Work Experience - Explain the relationship between current career coursework and related work situations. (#8B);

AUTO 138 - Occupational Work Experience - Explain the relationship between educational experiences and eventual career goals. (#8B);

AUTO 138 - Occupational Work Experience - Demonstrate knowledge and workplace success skills acquired at the work-site which extend beyond those addressed in a regular class setting. (#8D);

AUTO 138 - Occupational Work Experience - Demonstrate understanding of workplace success skills which are directly to the work experience situation. (#8E);

AUTO 138 - Occupational Work Experience - Apply critical thinking skills by: Analyzing and describing personal and career learning processes and skills acquisition in relation to a work-site setting. (all); Developing measurable work experience objectives, evaluating and documenting results against initial expectations. (#8D); Analyzing work activities at work-site and determining areas of career knowledge and skills which need further growth and development. (all); Analyzing relationships between classroom-acquired learning and career-related success skills and activities at the work-site (all);

AUTO 138 - Occupational Work Experience - Understand the function of the department or position within the organization setting of the work experience site. (#8G);

AUTO 138 - Occupational Work Experience - Keep a written weekly work experience journal which demonstrates college-level writing skills and adequate computer application. (all);

AUTO 138 - Occupational Work Experience - Prepare a resume and letter of application for a career-related position. (#8K and L).

AUTO 138 - Occupational Work Experience - Explain the relationship between current career coursework and related work situations.

AUTO 138 - Occupational Work Experience - Demonstrate knowledge and workplace success skills acquired at the work-site which extend beyond those addressed in a regular class setting.

AUTO 138 - Occupational Work Experience - Analyze and describe personal and career learning processes and skills acquisition in relation to a work-site setting.

AUTO 138 - Occupational Work Experience - Summarize the function of the department or position within the organization.

AUTO 138 - Occupational Work Experience - Describe personal and career learning processes and skills acquisition in relation to a work-site setting.

AUTO 138 - Occupational Work Experience - Complete a set of occupational skills that will challenge the student and reinforce knowledge gained in automotive coursework.

AUTO 138 - Occupational Work Experience - Demonstrate and describe social-interactive skills related to employer and co-worker relations.

AUTO 141 - Clean Air Car Course - Describe the California smog licensing process.

AUTO 141 - Clean Air Car Course - Identify consumer rights and disclosure laws.

AUTO 141 - Clean Air Car Course - Demonstrate and conduct proper smog inspections.

AUTO 141 - Clean Air Car Course - Analyze various inspection results.

AUTO 141 - Clean Air Car Course - Describe California smog licensure process.

AUTO 141 - Clean Air Car Course - Discuss consumer rights and disclosure laws.

AUTO 141 - Clean Air Car Course - Discuss proper smog inspection.

AUTO 141 - Clean Air Car Course - Analyze various inspection situations.

AUTO 141 - Clean Air Car Course - Properly diagnose and repair emission failures.

AUTO 141 - Clean Air Car Course - Apply knowledge learned in class to the California Smog Exam.

AUTO 141 - Clean Air Car Course - Demonstrate OBD2 Scan tool usage.

AUTO 141 - Clean Air Car Course - Describe the technology of Wideband Oxygen Sensors.

AUTO 145 - Enhanced Emission Diagnostics Level 2 - Describe and demonstrate personal, shop, equipment, and vehicle safety practices.

AUTO 145 - Enhanced Emission Diagnostics Level 2 - Discuss the laws, regulations, and procedures associated with consumer authorization of inspections and the overall administration of the Smog Check Program.

AUTO 145 - Enhanced Emission Diagnostics Level 2 - Describe the standards of practice expected of Smog Check Inspectors.

AUTO 145 - Enhanced Emission Diagnostics Level 2 - Demonstrate ability to calibrate an emission inspection system.

AUTO 145 - Enhanced Emission Diagnostics Level 2 - Demonstrate knowledge, skills and abilities in performing Smog Check emission tests on various vehicle designs.

AUTO 145 - Enhanced Emission Diagnostics Level 2 - Demonstrate knowledge, skills and abilities in performing Smog Check visual inspections on various vehicle designs.

AUTO 145 - Enhanced Emission Diagnostics Level 2 - Describe and demonstrate knowledge, skills and abilities to perform smog check functional tests on various vehicle designs.

AUTO 145 - Enhanced Emission Diagnostics Level 2 - Recognize and apply the laws, regulations, and procedures associated with consumer authorization of inspections and the overall administration of the Smog Check Program.

AUTO 145 - Enhanced Emission Diagnostics Level 2 - Demonstrate ability to calibrate an emission inspection system.

AUTO 145 - Enhanced Emission Diagnostics Level 2 - Demonstrate knowledge, skills and abilities in performing Smog Check emission tests on various vehicle designs.

AUTO 147 - BAR Update Training and Recertification - Analyze wideband oxygen sensors and determine needed repairs as set forth by the BAR resulting in certification credit by BAR.

AUTO 147 - BAR Update Training and Recertification - Analyze latest BAR law changes and apply to existing situations.

AUTO 147A - BAR 2005 Update Training - Analyze wideband oxygen sensors and determine needed repairs as set forth by the BAR, resulting in certification credit by BAR. Analyze latest BAR law changes. Apply latest BAR law changes to existing situations.

AUTO 147B - BAR 2007 Update Training - Analyze CAN communication issues.

AUTO 147B - BAR 2007 Update Training - Determine needed repairs as set forth by the BAR.

AUTO 147B - BAR 2007 Update Training - Find Mode 6 data for various manufacturers' vehicles.

AUTO 147B - BAR 2007 Update Training - Analyze latest BAR law changes.

AUTO 147B - BAR 2007 Update Training - Apply latest BAR law changes to existing situations.

AUTO 147C - BAR 2009 Update Training - Analyze CAN communication issues.

AUTO 147C - BAR 2009 Update Training - Determine needed repairs as set forth by the BAR.

AUTO 147C - BAR 2009 Update Training - Find Mode 6 data for various manufacturers' vehicles.

AUTO 147C - BAR 2009 Update Training - Analyze latest BAR law changes.

AUTO 147C - BAR 2009 Update Training - Apply latest BAR law changes to existing situations.

AUTO 147D - BAR 2011 Update Training - Properly prepare a vehicle for testing and diagnosis

AUTO 147D - BAR 2011 Update Training - Properly diagnose catalytic converters

AUTO 147D - BAR 2011 Update Training - Apply the latest BAR directives to various situation

AUTO 147D - BAR 2011 Update Training - Identify aftermarket parts using BAR resources

AUTO 147E - BAR Update Training - Demonstrate evaporative emission code structure

AUTO 147E - BAR Update Training - Demonstrate evaporative emission diagnostic techniques

AUTO 147E - BAR Update Training - Describe various manufacturer OBD2 fault criteria

AUTO 147E - BAR Update Training - Explain various OBD2 applications relevant to smart phones

AUTO 147E - BAR Update Training - Correctly use smoke machine in leak diagnosis

AUTO 147E - BAR Update Training - Explain why evaporative emissions are evaluated by onboard software

AUTO 147E - BAR Update Training - Demonstrate critical thinking skills necessary to accurately diagnose and repair system failures

AUTO 169 - Ford Scan Tool Diagnostics - Demonstrate a basic understanding of electronic networks, multiplexing, and data communications found on late model Ford vehicles. Students will be able to understand, capture, and interpret program identification data (PID) as sent to and received by the vehicle. Students will also be able to send commands to the vehicle through the NGS tester. The course will utilize the Ford New Generation Star tester to perform various other diagnostic and communication functions such as bleeding brakes activating various lighting, body, and instrument components.

AUTO 170 - Electrical Systems - Apply electrical/electronics theory to understand the operation of typical automotive electrical/electronic components and systems

AUTO 170 - Electrical Systems - Build and test working models of common automotive lighting, instrumentation, and accessory circuits, demonstrating competence in design, operation and diagnostic procedures.

AUTO 170 - Electrical Systems - Utilize specialized test equipment to obtain measurements and data from vehicle circuits and systems.

AUTO 170 - Electrical Systems - Utilize service information and software (electrical diagrams, diagnostic charts, specifications) in order to perform diagnosis and repair of vehicle components and systems.

AUTO 170 - Electrical Systems - Demonstrate proficiency and safe and professional practices in the service and repair of modern vehicle electrical systems.

AUTO 170 - Electrical Systems - Assess vehicle and system condition to determine the cause of common electrical system fault symptoms and failures.

AUTO 170 - Electrical Systems - Discuss the need for continued education in the rapidly changing technological industry they have chosen to enter.

AUTO 170 - Electrical Systems - Apply electrical/electronics theory to understand the operation of typical automotive electrical/electronic components and systems.

AUTO 170 - Electrical Systems - Build and test working models of common automotive lighting, instrumentation, and accessory circuits, demonstrating competence in design, operation and diagnostic procedures.

AUTO 170 - Electrical Systems - Utilize specialized test equipment to obtain measurements and data from vehicle circuits and systems.

AUTO 170 - Electrical Systems - Utilize service information and software (electrical diagrams, diagnostic charts, specifications) in order to perform diagnosis and repair of vehicle components and systems.

AUTO 170 - Electrical Systems - Demonstrate proficiency and safe and professional practices in the service and repair of modern vehicle electrical systems.

AUTO 170 - Electrical Systems - Assess vehicle and system condition to determine the cause of common electrical system fault symptoms and failures.

AUTO 171 - Engine Systems - Discuss safety procedures and follow safety guidelines

AUTO 171 - Engine Systems - Search for and apply information with specifications for the purpose of testing and repairing engine components

AUTO 171 - Engine Systems - Demonstrate proper tool and equipment usage in engine repair

AUTO 171 - Engine Systems - Demonstrate proficiency on NATEF-required lab tasks.

AUTO 171 - Engine Systems - Discuss safety procedures and follow safety guidelines

AUTO 171 - Engine Systems - Search for and apply information with specifications for the purpose of testing and repairing engine components

AUTO 171 - Engine Systems - Demonstrate proper tool and equipment usage in engine repair

AUTO 171 - Engine Systems - Demonstrate and discuss proper techniques used to disassemble, inspect, and reassemble an engine

AUTO 171 - Engine Systems - Test the engine after it is running and explain any problems

AUTO 171 - Engine Systems - Demonstrate proficiency on NATEF required lab tasks

AUTO 172 - Chassis and Drivetrain Systems - Diagnose chassis and drivetrain systems malfunctions using accepted diagnostic procedures.

AUTO 172 - Chassis and Drivetrain Systems - Correctly install related system components by following the manufacturer's service procedures.

AUTO 172 - Chassis and Drivetrain Systems - Service, repair, and inspect applicable chassis drivetrain systems by following manufacturer's service procedures.

AUTO 173 - Automotive Service Operations - Explain why a career in Automotive Service would be beneficial

AUTO 173 - Automotive Service Operations - Demonstrate job search skills

AUTO 173 - Automotive Service Operations - Practice job interview techniques

AUTO 173 - Automotive Service Operations - Create a personalized resume and cover letter

AUTO 173 - Automotive Service Operations - Demonstrate the importance of diplomacy and fair treatment of customers.

AUTO 173 - Automotive Service Operations - Evaluate the nuances of working in and out of the union environment

AUTO 173 - Automotive Service Operations - Demonstrate work habits and attitudes of a professional service technician.

AUTO 174 - Body & Chassis Electronics - Apply electrical principles such as Ohm's Law to diagnose malfunctions

AUTO 174 - Body & Chassis Electronics - Diagnose ABS systems including wheel speed sensors and related components

AUTO 174 - Body & Chassis Electronics - Use electrical test manuals and other service literature to extract codes and locate problems with appropriate systems

AUTO 174 - Body & Chassis Electronics - Employ scanners and lab scopes to perform functional tests of multiplexed systems

AUTO 174 - Body & Chassis Electronics - Measure, locate and repair excessive parasitic drains

AUTO 174 - Body & Chassis Electronics - Interpret analog and digital inputs to determine performance issues and correct related systems malfunctions

AUTO 175 - Welding and Fabrication - Apply safety procedures and guidelines.

AUTO 175 - Welding and Fabrication - Create and fabricate a project based on a blueprint

AUTO 175 - Welding and Fabrication - Successfully operate a variety of metal working equipment such as mills, lathes, saws, etc.

AUTO 175 - Welding and Fabrication - Perform safety procedures and follow safety guidelines

AUTO 175 - Welding and Fabrication - Create and fabricate a project based on a blueprint

AUTO 175 - Welding and Fabrication - Successfully operate a variety of metal working equipment such as mills, lathes, saws, etc.

AUTO 175 - Welding and Fabrication - Successfully operate a MIG (Metal Inert Gas) welder

AUTO 181A - Introduction to Alternative Fuel and Hybrid/Electric Vehicles - Identify the various types of alternative fuel and propulsion vehicles

AUTO 181A - Introduction to Alternative Fuel and Hybrid/Electric Vehicles - Describe the systems and components used in a hybrid electric and full electric vehicle

AUTO 181A - Introduction to Alternative Fuel and Hybrid/Electric Vehicles - Describe the systems and components used in a compressed natural gas (CNG) Vehicle

AUTO 181A - Introduction to Alternative Fuel and Hybrid/Electric Vehicles - Identify the unique hazards associated with alternative fuel and propulsion vehicles

AUTO 181A - Introduction to Alternative Fuel and Hybrid/Electric Vehicles - Perform safety procedures and follow safety guidelines

AUTO 181A - Introduction to Alternative Fuel and Hybrid/Electric Vehicles - Perform successfully specified laboratory tasks required by NATEF

AUTO 181A - Introduction to Alternative Fuel and Hybrid/Electric Vehicles - Identify the various types of alternative fuel and propulsion vehicles

AUTO 181A - Introduction to Alternative Fuel and Hybrid/Electric Vehicles - Describe the function of the systems and components unique to hybrid electric, plug-in hybrid and full electric vehicle

AUTO 181A - Introduction to Alternative Fuel and Hybrid/Electric Vehicles - Describe the functions of systems and components unique to the Compressed Natural Gas (CNG) Vehicle

AUTO 181A - Introduction to Alternative Fuel and Hybrid/Electric Vehicles - Identify the unique hazards associated with alternative fuel and electric propulsion vehicles

AUTO 181A - Introduction to Alternative Fuel and Hybrid/Electric Vehicles - Perform shut off and shut down procedures following all manufacturers' safety guidelines

AUTO 181A - Introduction to Alternative Fuel and Hybrid/Electric Vehicles - Successfully perform specified laboratory tasks required by NATEF

AUTO 181A - Introduction to Alternative Fuel and Hybrid/Electric Vehicles - Identify the various types of alternative fuel and propulsion vehicles

AUTO 181A - Introduction to Alternative Fuel and Hybrid/Electric Vehicles - Describe the function of the systems and components unique to hybrid electric, plug-in hybrid and full electric vehicle

AUTO 181A - Introduction to Alternative Fuel and Hybrid/Electric Vehicles - Describe the functions of systems and components unique to the Compressed Natural Gas (CNG) Vehicle

AUTO 181A - Introduction to Alternative Fuel and Hybrid/Electric Vehicles - Identify the unique hazards associated with alternative fuel and electric propulsion vehicles

AUTO 181A - Introduction to Alternative Fuel and Hybrid/Electric Vehicles - Perform shut off and shut down procedures following all manufacturers' safety guidelines

AUTO 181A - Introduction to Alternative Fuel and Hybrid/Electric Vehicles - Perform specified laboratory tasks required by NATEF

AUTO 181B - Hybrid Electric Vehicle Maintenance and Repair - Utilize service information (electrical diagrams, diagnostic charts, specifications) in order to perform diagnosis and repair on hybrid and electric vehicles.

AUTO 181B - Hybrid Electric Vehicle Maintenance and Repair - Apply electrical/electronic theory to the operation of the unique systems and components used in modern hybrid and all electric vehicles.

AUTO 181B - Hybrid Electric Vehicle Maintenance and Repair - Demonstrate proficiency at charging plug-in and all electric vehicles.

AUTO 181B - Hybrid Electric Vehicle Maintenance and Repair - Demonstrate proficiency at removing and replacing the high voltage battery pack using manufacturers' procedures and safety practices.

AUTO 181B - Hybrid Electric Vehicle Maintenance and Repair - Assess hybrid and electric vehicle performance by using the proper diagnostic tools and proper interpretation of test data.

AUTO 181B - Hybrid Electric Vehicle Maintenance and Repair - Utilize specialized diagnostic equipment to test and validate vehicle performance.

AUTO 181B - Hybrid Electric Vehicle Maintenance and Repair - Utilize specialized repair tools and equipment when performing laboratory repair tasks.

AUTO 181B - Hybrid Electric Vehicle Maintenance and Repair - Utilize service information (electrical diagrams, diagnostic charts, specifications) in order to perform diagnosis and repair on hybrid and electric vehicles.

AUTO 181B - Hybrid Electric Vehicle Maintenance and Repair - Apply electrical/electronic theory to the operation of the unique systems and components used in modern hybrid and all electric vehicles.

AUTO 181B - Hybrid Electric Vehicle Maintenance and Repair - Demonstrate proficiency at charging plug-in and all electric vehicles.

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AUTO 181B - Hybrid Electric Vehicle Maintenance and Repair - Utilize specialized diagnostic equipment to test and validate vehicle performance.

AUTO 181B - Hybrid Electric Vehicle Maintenance and Repair - Utilize specialized repair tools and equipment when performing laboratory repair tasks.

AUTO 181B - Hybrid Electric Vehicle Maintenance and Repair - Correctly perform all laboratory tasks assigned.

AUTO 181B - Hybrid Electric Vehicle Maintenance and Repair - Identify the various types of hybrid electric vehicles

AUTO 181B - Hybrid Electric Vehicle Maintenance and Repair - Perform safety procedures and follow safety guidelines

AUTO 181B - Hybrid Electric Vehicle Maintenance and Repair - Identify the unique hazards associated with hybrid electric vehicles

AUTO 181B - Hybrid Electric Vehicle Maintenance and Repair - Describe the systems and components used in a hybrid electric vehicle

AUTO 181B - Hybrid Electric Vehicle Maintenance and Repair - Explain the function and operation of common hybrid systems

AUTO 181B - Hybrid Electric Vehicle Maintenance and Repair - Demonstrate how to use manufacturer specified diagnostic tools

AUTO 181B - Hybrid Electric Vehicle Maintenance and Repair - Perform specified diagnostic procedures

AUTO 181B - Hybrid Electric Vehicle Maintenance and Repair - Perform manufacturer-specified routine maintenance operations

AUTO 181B - Hybrid Electric Vehicle Maintenance and Repair - Perform NATEF-specified tasks successfully

AUTO 191 - Collision Electrical Diagnosis and Repair - Diagnose, test, and repair collision related vehicle electrical faults

AUTO 191 - Collision Electrical Diagnosis and Repair - Differentiate between electrical and electro-mechanical faults, and take appropriate corrective action

AUTO 191 - Collision Electrical Diagnosis and Repair - Obtain appropriate service/diagnostic information from online databases and other sources of service information

AUTO 202 - Bugged Vehicle Diagnosis - Demonstrate competent diagnostic methods under real world shop conditions

AUTO 202 - Bugged Vehicle Diagnosis - Develop diverse and efficient strategies to insure a high level of productivity and repair success

AUTO 202 - Bugged Vehicle Diagnosis - Complete paperwork and practices in compliance with industry ethical and legal standards

AUTO 202 - Bugged Vehicle Diagnosis - Utilize a wide range of resources to acquire diagnostic information, assistance, and best practices

AUTO 204 - Driver Assist Technology - Identify different driver-assist components and systems.

AUTO 204 - Driver Assist Technology - Troubleshoot and diagnose driver-assist systems.

AUTO 204 - Driver Assist Technology - Calibrate driver-assist systems.

AUTO 500 - Math for Automotive Technology - 1) Develop formulas and calculate area for standard 3D geometric figures, measure angles with a protractor, determine gear ratios from pulley size or number of teeth, and define pressure as a function of force and area.

AUTO 500 - Math for Automotive Technology - 2) Apply Ohm's law to simple circuits, define place values, and round to appropriate place values.

AUTO 500 - Math for Automotive Technology - 3) Calculate parts mark-up, labor charges, sales tax, and final estimated total.

AUTO 501 - English for Automotive Technology - Demonstrate command of English grammar when writing or speaking.

AUTO 501 - English for Automotive Technology - Correctly spell the names of common automotive systems, parts, tools, and equipment.

AUTO 501 - English for Automotive Technology - Demonstrate how to look up automotive dictionary entries, and glossary definitions found in most automotive text books.

AUTO 501 - English for Automotive Technology - Demonstrate the ability to write statements explaining the tests performed, failures found and corrective actions taken on automotive work order.

AUTO 501 - English for Automotive Technology - Demonstrate command of English grammar when writing or speaking.

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AUTO 501 - English for Automotive Technology - Demonstrate the ability to write statements explaining the tests performed, failures found and corrective actions taken on automotive work orders.

Program Learning Outcomes

- 1. On the program level, defined as a course of study leading to degree or certificate, list the Program Learning Outcomes (PLOs), and how they relate to the GE/ILOs (<http://www.evc.edu/discover-evc/student-learning-outcomes-%28slos%29>) (<http://www.evc.edu/discover-evc/student-learning-outcomes-%28slos%29>)). Please also indicate how the course SLOs have been mapped to the PLOs. If you are completing this program review as a department or discipline and do not offer any degrees or certificates, please write N/A in this space.

PLOs listed:

- Demonstrate knowledge of theory and operation of various automotive systems found in gasoline combustion vehicles.
- Demonstrate the ability to identify the basic components used in various automotive systems found in gasoline combustion vehicles.
- Demonstrate the ability to perform inspections on the basic automotive systems found in gasoline combustion vehicles.
- Demonstrate the ability to perform maintenance tasks in accordance with proper procedure.
- Demonstrate the ability to properly document service/repair information documents, to insure customer satisfaction.
- Demonstrate knowledge of theory and operation of all major automotive systems used on Honda and Acura vehicles
- Demonstrate the ability to perform fault validation and determine appropriate next actions.
- Demonstrate the ability to use proper repair procedures.
- Demonstrate knowledge of shop hazards safe practices in an automotive repair environment.
- Demonstrate the ability to diagnose, inspect, measure, and repair transmission, drivetrain, AC, brake and suspension systems in a competent and professional manner.
- Apply basic electrical principles to the repair of Chassis and Drivetrain systems.
- Recognize, diagnose, and repair faults in the following systems: Starting, charging, lighting, instrumentation, climate control, safety, navigation, communication, fuel, ignition, valvetrain, throttle, emissions, powertrain, and stability.
- Demonstrate skills using online vehicle diagnostic/repair information and specialized test equipment that is consistent with industry standards.
- Execute safe, proper, and ethical work practices.
- Students will learn to adhere closely to manufacturer service procedures.
- Students will demonstrate electrical diagnostic and repair skills.
- Utilize service information (electrical diagrams, diagnostic charts, specifications) to perform diagnosis and repair on hybrid and electric vehicles
- Complete all laboratory tasks using recommended tools and equipment following the manufacturer repair procedures and safety policies
- Describe the basic function and operation of major systems and parts common to most hybrid electric vehicles

SLOs have been mapped to PLOs with regards to safety and foundational outcomes to more specific outcomes in specialist classes, such as brakes or high-voltage theory. Some SLOs are reinforced in various classes with themes that help students master difficult topics or needed professional skills for personal development. SLOs and PLOs have been linked to ILOs, as well. These PLOs relate to ILOs regarding communication, information competency, and personal development. As an example, a student will use vehicle service information, make a decision for repair, and communicate with the instructor. Once a student is working, the student will perform better in the workplace and be more successful.

- 2. Since your last program review, summarize SLO assessment activities and results at the course and program level. Please include dialogue regarding SLO Assessment results with division/department/college colleagues and/or GE areas. Provide evidence of the dialogue (i.e. department meeting minutes or division meeting minutes, etc.) Your program review will not be approved unless every SLO for every course in your program, and every PLO (if your program has a degree or certificate) is complete and approved by EVC's SLO Coordinator. All SLOs and PLOs must be assessed every two years.

All SLOs are being assessed on a two-year schedule. PLOs haven't been regularly assessed. With four faculty retirements in the last four years, and loss of some part-time faculty, it has been difficult to get all SLOs and PLOs assessed. The remaining full-time faculty has made an effort to complete SLOs. The Division Dean has helped remind the department of assessment. The Slo chair has held workshops to assist in assessment. A department faculty joined the Slo committee to better understand correct assessment.

The Division Dean has reminded us every month to assess SLOs and PLOs. The following are two Division meeting agendas:

I. : Updates, October 20, 2021

A. Faculty Prioritization

B. \$50K HEERF (COVID related) & Resource Allocation Model (RAM)

C. SLOs & Program Review

D. Committee assignments

II. Campus updates

A. Vaccination mandate and exemptions: Students and employees

III. Program updates

A. Auto Technology

- B. Accounting
- C. Advanced Manufacturing
- D. EDIT
- V. Spring 2022

I. : Updates, November 19, 2021

- A. Faculty Prioritization Updates
- B. Program updates: Labor Market Index request process
- C. SLOs & Program Review

II. Campus updates

- A. Vaccination mandate and exemptions: Students and employees
- B. New ITSS helpdesk support process
- C. Keys
- D. Town hall for Guided Pathways
- E. Spring 2022: PDD presentation, return to campus for work

III. Program updates

- A. Auto Technology: Tesla START day January 7th
- B. Accounting: VITA start in February
- C. Advanced Manufacturing: 4 new students
- D. EDIT: BSP completion

V. Other:

- A. PGE VIM training completion
- B. Conference Presentation for CCCAOE
- C. Out of the Office

The following is an example assessment given by the Dean to assist in assessment:

CLASS (e.g., PSYCH 001)

SECTION (e.g., 202)

SEMESTER (e.g., Fall 2019)

Student Learning Outcome

e.g Evaluate and discuss gender as a social construct

Assessment Tool

Ch2 (Gender and Power) quiz: questions on gender as a social construct; **Midterm 1:** Covered chapters 1-3. This included questions on gender as a social construct;. **Research paper:** Students described how their primary caregiver influenced their understanding of gender.

Assessment Results

Ch2 quiz: 22/27 (81.5%) scored C or higher; C or higher; **Research Paper:** 18/20 students

- **3. What plans for improvement have been implemented to your courses or program as a result of SLO assessment? Please share one or two success stories about the impacts of SLO assessment on student learning.**

With the addition of two new full-time faculty, the department will have dedicated faculty to stay current with assessments. In order to make assessment more efficient, less SLOs have been created in the curriculum, however the SLOs created are relevant and measurable.

As an example, "Demonstrate principles of safe shop practices", is introduced, reinforced, and mastered in all classes. The automotive field has many safety concerns and needed safeguards to prevent injury. The program hasn't had any significant number of injuries since created. Also graduates have continued to practice safety and good habits learned in the program.

Another example, "Demonstrate the proper interpretation of diagnostic data, measurements, and specifications when performing laboratory tasks", reinforces the use of manufacturer service manuals and critical thinking. Students have shown more use of service information which leads to precise diagnosis and repair of technical vehicle systems. Improved critical thinking skills helps students isolate the cause of a problem, when given multiple values and data.

Faculty and Staff

Part D: Faculty and Staff

- 1. List current faculty and staff members in the program, areas of expertise, and describe how their positions contribute to the success of the program.

David Ames

Education: I have a B.S. degree in Business Administration and a Master's degree in Education.

Summary of Licenses, Certifications, and Automotive Training: I am a Honda Master Technician certified instructor and an ASE Master Technician. I have over twenty years of experience in the automotive industry as a technician and shop owner working on various makes of vehicles. I have taught full time for the last 19 years.

How does my position contribute to program success?

I teach five of the nine Automotive ASE certification areas. I am chairman of the Safety and Facilities Committee, and co-chair of the CalWomenTech grant, which has increased the department's visibility as a potential career path for women. I regularly promote the department through videos that I produce and by leading tours directed at potential students. I make regular visits to potential employers to secure employment opportunities for our students. I secured an SB70 grant that increased our visibility with CCOC and other feeder schools and brought funding to procure resources for our hybrid and alternative fuels courses. I also coordinate the Honda program, which brings training opportunities, late-model vehicles, equipment, curriculum, service literature, special tools, and high-wage employment opportunities for our students.

Professional development in the past six years:

I completed hybrid training with PG&E. I continue to complete Honda online modules regularly, as well as annual update training at the Honda training center. I have attended several workshops on Driver-Assist and ADAS systems. EVC offers regular staff development in various areas related to enhancing the educational experience for our students. I also regularly attend CAT conference workshops, and yearly Honda conferences.

Proposed Professional Development activities:

I continue to attend regular training with Honda. I also maintain studies in various academic subjects that support my teaching.

Mark Bernbeck**Background:**

I have a bachelor's degree in Psychology. For 22 years I was an automotive technician at independent shops and dealerships, most recently at Audi dealerships where I became a master-certified Audi technician.

Other certifications are: Master ASE with L1, CA; Smog repair technician, CA; smog instructor; and registered Honda PACT instructor. For 15 years I taught automotive classes part-time at EVC and was hired to teach full-time in 2016, reaching Tenure status.

My contribution to our automotive program:

I have taught all classes that are part of our Drivetrain-Chassis and Honda certificate. I have been the Honda Coordinator as well as Faculty Coordinator for the department since 2018, organizing department meetings, passing accreditation and smog certification, and hosting advisory meetings with industry professionals. For two years, I have served on the SLO committee and for one year served on the Curriculum committee. I cooperate closely with my fellow instructors in designing a curriculum that is current and adheres to NATEF standards.

Recent Professional Development:

In 2016 I achieved Audi Master-Technician certification. I have maintained my ASE Master status for the last 25 years. In the past 24 years I have maintained my smog license, earned smog instructor certification, attended diversity training, joined the Safety and Facilities, SLO, and Curriculum committees.

Future goals:

By continuing to educate myself on the latest technologies, such as Electric Vehicles and Driver-Assist systems, I will be able to design and update curriculum to teach the most current technologies. After updating smog curriculum, I will use my smog instructor certification. My continued Honda training and certification will allow me to teach all Honda content. My desire is to motivate students while holding them to the highest standards to empower them to succeed in the automotive industry.

Ed Van Hagen**Education:**

I have an AS degree in Automotive Technology – Fuel and Electrical from Evergreen Valley College. I am General Motors Master Certified in three categories: Electrical/Electronics, Engine Performance, and HVAC. I am ASE Certified in Electrical/Electronics, Engine Performance, HVAC, and Advanced Engine Performance. I worked at General Motors dealerships for 20 years (1986-2006) and have been an EVC adjunct faculty member for 27 years (1994-present). I have taught full time at Silicon Valley Career Technical Education (formerly CCOC) for twelve years.

How does my position contribute to program success?

I have taught all of the Fuel/Electrical courses at EVC and am always prepared to teach them if needed. I offer a nice balance to the department and pride myself on providing current information to my classes. Due to the constantly changing nature of automotive technology, I never teach a class exactly as I taught it previously. I have also taught the Foundational Skills classes.

I believe it is a significant benefit to EVC that I teach at one of EVC's feeder schools and that I have promoted EVC with my high school students by organizing annual field trips to the college for the past several years. Many of my former high school students have continued their education at EVC.

In cooperation with David Ames and Mike Hernandez I helped secure an SB70 grant in 2007 for collaboration between two schools on the topic of hybrid vehicles.

I am also the AYES/NATEF coordinator for our school, and I arrange dealership internships for my students.

Professional Development in the past six years:

I continue to maintain an EO/EI smog license and attend the required 16-hour update class every two years. In the past ten years I have attended the week-long VocEd training at the Honda training center four times (40 hours each). In 2015 I attended an eight-hour CAN communication class and completed as many Honda online modules as possible. I have attended all of the required professional development training provided by SVCTE. Last week I brought my class to the Honda/STEAM Connections presentation and exhibit at San Jose State University.

Proposed Professional Development activities:

I plan to continue taking Honda's online and hands-on training. Additionally, Subaru has approached SVCTE to offer its instructors and students the opportunity to participate in Subaru online training, and I look forward to taking this training. I also enjoy attending workshops to keep current with the latest developments and new information that I can bring to my classes.

Michael Cortese

Education: I have an AS degree in Automotive Systems and an AA degree in General Studies. I am a Ford Master Technician and an ASE Master Technician in both Heavy Duty and Automotive. I have more than twelve years of experience in the automotive industry as a dealership service technician. I have taught full time for 13 years.

How does my position contribute to program success?

I teach three of the nine Automotive ASE certification classes.

Professional Development in the past six years:

I recently completed NC3 training for Snap-On multimeter and Snap-On scanners. Every summer I spend two weeks completing hands-on training at the Honda training center. I continue to complete Honda's online modules, and I have attended Mopar instructor training.

Proposed Professional Development activities:

I continue to attend Honda training regularly, and I maintain studies in various academic subjects that support my teaching.

Robert M Bodden Jr

Education

- 1973 – High school diploma Kearny High School, San Diego, Ca.
- 1985 - AA degree in Aviation, San Diego Mesa College, San Diego, Ca.
- 2000 - AS degree in Automotive Technology with certificates in fuel and electrical from Evergreen Valley College, San Jose, Ca.

How does my position contribute to program success?

I have been teaching at Evergreen Valley College for 21 years. Within that time, I have sat on various committees; four years as a member of the Academic Senate Committee and a member of the AS Executive committee for two summers. I'm also a member of the Full Time Hire Committee; I've been a member of two different full-time hire select committees. I believe my experience and commitment to Evergreen Valley College over the past 21 years has given me the ability to understand what the program has to offer our students and contribute ideas for improvement to our program to maintain and increase enrollment so that our students are successful at achieving their goals thereby increasing the graduation rate at Evergreen Valley College. I would also encourage our associate faculty to participate on committees, attend division and department meetings to help themselves learn how faculty involvement can improve our programs.

Professional Development in the past six years

The technology of the automotive industry is continuously and rapidly changing. I have an obligation to my students and to myself to keep up with the latest technological changes in the industry. I have joined several organizations that offer training such as California Automotive Teachers (CAT); North American Council of Automotive Teachers (NACAT) and Automotive Service Councils of California. I have also attended training offers by Advanced Transportation and logistics.

Proposed Professional Development activities:

Evergreen Valley College in cooperation with Elmwood Correctional Facility are in the process of providing automotive training to its inmates at its facility. I have been a part of that process by visiting the facility and having discussions as to how to logistically provide the necessary training and equipment needed for the training. Our goal is to encourage the inmates to continue their training and education at EVC when they are released from the facility.

Long Tran

Education:

I have an AS degree and am Honda certified.

How does my position contribute to program success?

I'm working as a professional auto technician while teaching part-time. I'm sharing my real-life hands-on experiences with my students in class room lectures and workshop lab exercises. I believe my students will learn the most when being taught with real-life examples.

Professional Development in the past six years:

I've been attending automotive update/training classes at other colleges and online to maintain up to date repair/industry information.

Proposed Professional Development activities:

I'm experimenting/developing techniques to repair or retrofit old/out of production automotive electronic parts for vintage/collection vehicles. The challenge is to make used part with security protection to work with other vehicles. I've successfully adapted many old electronic parts and made those old cars reborn.

Staff:

Laboratory Technicians:

Diane Ontiveros

Paul Paiz

Our staff members manage the Auto program's tool room inventory and purchases and interact with students in checking out tools, maintaining vehicles and equipment, and overseeing the lab facilities

- **2. In addition to major professional development activities completed by faculty and staff in the past, in particular with regards to students' success, equity, distance education, SLO assessment, guided pathways and/or innovative teaching/learning strategies, are there any additional professional development needs of your department in the future? What are they? Please provide details about a timeline.**

Since Automotive Technology is going through rapid and numerous changes, faculty training is a priority. The Dean has helped faculty financially to attend new-technology training. Every year, to meet accreditation, faculty must attend twenty hours of training and attain ASE certification for all courses taught. Recent training completed has been by ASE, the California Teachers Association, other colleges, regional training, Honda, TESLA, and other High-Voltage systems training. Faculty have joined the Academic Senate, SLO, Curriculum, and Safety and Facilities committees, not only as part of shared governance but to share important updates from these committees with the department and Division.

Budget Planning

Part E: Budget Planning

- **1. With your Dean, review the department Fund 10 budget (operational budget) and discuss the adequacy of the budget in meeting the program's needs.**

The Automotive Technology Program does not have Fund 10 for department operations. However, Fund 10 does pay full-time salary lines for full-time faculty (3), classified staff (1 full-time day hours and 1 evening hour), and adjunct salaries (4 during the academic semesters only). Non-salary lines that fund 10 of \$2000 is for Alldata software renewal.

The program has not received any fund 10 to assist with the operations cost of maintaining the program in quality standards for the ASE accreditation. Since the last PR report, there has been no additional fund to support the major equipment upkeep, OSHA/Hazard waste fees, and updated tools and classroom materials. The actual full operational cost of this program on a skeleton budget to maintain the academic quality of the program for students is \$50k for the academic year. This does not include the faculty development training hours required for ASE program accreditation. This would be another \$15K needed allocation.

The impact on students' learning and achievement by not having the needed fund 10 allocation is critical and solely relied on Fund 17 (grant funds). The impact of not having an annual allocation of \$65K would decrease the retention and completion rate. It would also impact the enrollment rate in the academic quality of the program. For example, the equipment and tools often deteriorate overtime due to the frequency of usage and requires equipment updates. Without these updates, the students would not be able to get the hands-on training hours required for ASE accreditation.

- **2. List all external funds, i.e. fund 17, the department/program receives, and describe their primary use.**

Automotive Technology program is funded by Fund 17 for program operations. The Fund 17 are Perkins Funds and Strong Workforce Program (SWP) funds. The Automotive Technology program is considered next generation automotive program and requires consent updating to keep up with the new technology in vehicles/cars. Thus, to bring the Automotive program and building to state-of-the art status the estimated expenditures are about \$110 for the departments operational cost. The following are Fund 17 that stabilizes the Automotive Technology Program operations:

I. Salary Lines:

- A. Part-time Counselor: .50 FTE from Perkins Funds = \$30K (includes Benefits)
- B. Non-instructional assignment for faculty from SWP: \$25K (includes Benefits)

II. Instructional Materials and Supplies:

- A. Perkins Funds= \$6K (tool room materials)
- B. Perkins Fund = Data/software = \$1000
- B. SWP= \$20K (textbook loans and software updates)

III. Equipment updates

A. SWP=Maintenance/upkeep= \$20K

B. Perkins= Lift inspections = \$15K

C. SWP= Updated Laptops = \$10k

IV. New Equipment

A. SWP=Electrical/hybrid training boards, other new equipment = \$10K

Technology and Equipment

Part F: Technology and Equipment

- **Review the current department technology and equipment needed and assess program adequacy. List and changes to technology or equipment since the last program review. If changes were made please indicate how the change impacted student success.**

Since the last program review, a new tire changer was purchased with the latest technology to better replicate the modern equipment used in dealerships and tire centers. Several precision measuring tools for brakes and engine components were purchased to allow students to use the latest type of digital tools. A High-Voltage Battery Trainer was purchased so that students have an accessible and visual high-voltage battery that allows them to learn in a safe and controlled environment. Electrical test-boards and electrical test-equipment have been purchased for our electrical classes. Twenty laptop computers were bought so that students can individually and in groups use a computer to search electronic service and repair information. We have several subscriptions to electronic training and service and repair sites, some of it piloted during the pandemic school closure and online instruction. All of these purchases of updated equipment has made our program stay advanced and remain current. Students who graduate from our program have had a thorough hands-on education, better preparing them for the latest technology that they will use in the field. Having enough tools and equipment so that students have better access to test vehicles or equipment has increased mastery of skills and reinforced theory.

The current tools and equipment for the program are listed below:

TOOLS AND EQUIPMENT	qty
Abrasive pads	9
Air chisel/Hammer	2
Air compressor portable	
Air drill (cordless) on counter	2
Air pressure blower chucks	5
Air rachets 3/8 drive	3
Allen wrenches	6
Automotive [grease, spraycleaners] etc...	
Automotive stethoscope	3
Axle stands [safety stands]	4
Batteries [9V, AA, AAA, D, C]	
Battery charger	2
Battery service tools	6
Bearing packer	1
Belt tension gauge	2
Bench grinder	2
Bolts & nuts & washers	
Brake disc micrometer	5
Brake drum micrometer	6
Brake drum installing tools	8
Breaker bars 3/8 1/2 inch	5
Bearing & race drivers	2
C-clamps	10
Car care guides	
choke (torque) angle gauge	4
Clutch pilot	16
Combination wrenches	
Cordless impacts 3/8 1/2 inch	3
Compression testers	5
Computer scan tool [snap-on scanner] etc..	10
Cooling system pressure tester & adapters	6
Constant velocity joint tools	
Boot installation tool	
Boot clamp pliers/crimping ring	
Cotter pins	
Crankshaft turner	2

Crescent wrench	6
Cylinder dial bore gauge	7
Cylinder leakage testers	5
Diagonal cutters	5
Dial indicator w/ magnetic base	7
Dial indicator w/ flex arm	4
Die grinder	2
Digital multi-meter	10
Digital thermometer	
Distributor wrenches	6
Digital Venier calipers	8
Drain pans	15
Drill 3/8" variable speed, reversible	2
Drill 1/2" variable speed, reversible	1
Electrical tool boxes	
Electrical wire [various gauge]	
Electric drills	3
Extension cords	10
Extensions 3/8 1/2 inch bars	10+
E-Z outs	2
Face shields	
Fender covers	20
Files	10
First aid box	3
Flaring tools	5
Floor jack	5
Fluke temp probe	3
Fluke meters	10
Freeze plug driver	1
Fuel injector testers	2
Fuel pressure testers	4
Fuses	
Funnels	
flare nut wrenches	6
Grabbers	4
Hacksaws	3
Half moon wrenches	
Hammer [ball peen, brass, plastic tip]	15
Hand held vacuum pump	5
Harmonic balancer pullers	2
Honda scanners	11
Honda service manuals	
Honda videos	
Hoses [sae fuel, vacuum, cooling hose]	
Hub cap remover	4
Hydraulic press w/adapters	
Impact gun	4
Impact sockets sets-3/8" drive standard	
Impact sockets sets-3/8" drive metric	
Impact sockets 1/2" drive standard	
Impact sockets 1/2" drive metric	
Impact wrench 3/8" drive	5
Impact wrench 1/4" drive	1
Ignition testers	
Jumper batteries	
Jumper cables	2
Jumper wires	10
Label maker	2
Machine screw nut asst	
Memory Saver	3
Magnetic pick up tool	3
Micrometers [outside type]	
Micrometer boxes	7
Mirrors	4
Mitchell domestic cars	
Mitchell automatic trans. manuals	
Mitchell emissions manual	
Mitchell heating & air condition	
Needle nose pliers	5

Noid lights	5
Nut drivers	10
Offset screwdrivers	
Oil filter wrench	10
Oxy-Acetylene torch	
Parts cleaning tank	
Phillips pan head asst. screws	
Pliers [standard, needle nose, jaw type]	6
Pop rivet gun	1
Propane tanks	
Pry bars	10
Pullers	4
Punch & chisels	20+
Putty knives	5
Pyrometer	
Ratchet wrenches 3/8 1/2	10+
Remote starter switch	5
Retaining ring	
Rib joint pliers	5
Rotary brush	
Rubber O-rings	
Safety glasses	20+
Sand paper	
Scratch awl	10+
Screwdrivers [flat head]	10+
Screwdrivers [phillips]	10+
Screw extractor set	3
Slip joint pliers	5
Small hole gauges	6
Snap-on scanners	5
Snap ring pliers	15+
Sockets [6 point, 12point] metric	
Sockets [6 point, 12point] standard	
Soldering iron	5
Solderless terminal assortment	
Slovent tank	
Spanner wrenches	3
Spark boot puller	4
Spark plug gapper	6
Spark plug socket	10+
stethoscope	3
Serpentine belt tool	1
Speciality wrenches	10+
Speedhandle	5
Spring & strut compressor tool	
St-125 testers	3
Supplies [reserve stock]	
Tach/Dwell meter	
Tap & die set	3
Tape [electrical, clear, teflon, masking]	
Tape measure	4
Tapping screw assortment	
Telescoping gauges	6
Test light	6
Thread repair insert kit	
Timing lights	4
Tire inflator chuck	6
Tire repair kit	
Tool boxes for drivetrain classes	
Torque wrenches	15
Torque sticks	10
Trouble/work lights	5
Torx sockets/drivers	5+
Tubing bender	
Tubing cutter flaring set	6
Twist drill set /bits	6
Vacuum fittings	
Vacuum pressure gauges	6
Valve core removing tool	
Valve stem compressors	4
Vantage pro graphing meter	4
Vernier calipers	6
Vise grips	

Universal joint	
Wheel chocks	10+
Wrenches [open end, box end, tubing]	
Flashlights	10
Fuse puller	
maximus scanners	6
Lap tops	20
Vacuum pumps	6
Battery Testers	7
Refrigerant and recovery machines	4
Transmission jack stands	3
Tire changers	2
Wheel Balancers	1
Brake Lathes	2
VAT-40'	3
On CAR Brake Lathe	1
Stand Alone forklift	1

Additional Information

Part G: Additional Information

Future Needs and Resource Allocation Request

Based on the areas noted below, please indicate any unmet needs for the program to maintain or build over the next six years. Please provide rationale on how the request connects back to SLO/PLO assessment, strategic initiatives or student success. If no additional requests are needed in any of the areas, put N/A.

1. Faculty Request

Ongoing Budget Needs

One-Time Expenditure

Total Expenses (Staffing and Faculty Requests include Salary and Benefits)

Request linked to SLO/PLO #

Total Cost

Strategic Initiatives (student centered, organizational transformation, community engagement)

No

Improving Student success rates

Yes

Achievement of program set standard for student success

Yes

2. Equipment/Supplies

Ongoing Budget Needs

One-Time Expenditure

Tools and Equipment

Request linked to SLO/PLO #

Total Cost

Strategic Initiatives (student centered, organizational transformation, community engagement)

Yes

Improving Student success rates

Yes

Achievement of program set standard for student success

No

3. Technology

Ongoing Budget Needs

One-Time Expenditure

High-Voltage Electrical Trainer

Request linked to SLO/PLO #

Total Cost

Strategic Initiatives (student centered, organizational transformation, community engagement)

No

Improving Student success rates

Yes

Achievement of program set standard for student success

Yes

4. **Equipment/Supplies****Ongoing Budget Needs****One-Time Expenditure**

Vehicle Lifts

Request linked to SLO/PLO #**Total Cost****Strategic Initiatives (student centered, organizational transformation, community engagement)**

Yes

Improving Student success rates

Yes

Achievement of program set standard for student success

No

5. **Facilities****Ongoing Budget Needs****One-Time Expenditure**

New building due to growth from future BA program

Request linked to SLO/PLO #**Total Cost****Strategic Initiatives (student centered, organizational transformation, community engagement)**

Yes

Improving Student success rates

No

Achievement of program set standard for student success

No

Attach Files

Attached File

IEC Reviewers

IEC Mentor

Fahmida Fakhruddin

IEC Second Reader

Guy Ras