

Automotive Technology Program



ANNUAL
REPORT OF PROGRAM DATA
2021



UNIVERSITY of HAWAII®
MAUI COLLEGE

1. Program or Unit Description

Program or Unit Mission or Purpose Statement

Value of degree

What is the industry/higher ed path value of the certificate versus degree level?

Provide graduate highlights based on recent graduate placement data.

The purpose of the Automotive Technology program (AMT) is to train students for employment in automotive service and repair. The laboratory phase of courses uses modern tools and equipment while performing actual “live” service and repairs on automobiles. The classroom phase includes discussion of principles and theory on the operation of automotive systems and components, demonstration of repair techniques by instructors through simulations, textbook assignments, and quizzes.

The industry/ higher ed path value of the certificate is that it allows the students to be trained in the automotive courses and gives students the opportunity to enter the workforce quickly. Students who pursue the automotive degree are awarded 1 year of work experience of the required 2 when they apply for ASE certifications. Students would only need 1 more year of work experience for gaining industry certification. Another benefit for students to pursue the degree is that if they choose to change careers in the future that they have the general education requirements from the Associate’s degree to build upon for further education.

What is the target student or service population?

Check all that apply for the program:

☐ Articulated Pathways for 4-year or graduate pathways: _____

☒ Articulated Pathways for High school: _____

☒ Articulated Pathways for Other: work in automotive field _____

The target audience for the UHMC Automotive Technology Program is the population of the Island of Maui. This includes high school students, high school graduates, transfer students, technicians currently in industry attaining updated skills, people transitioning from one industry to automotive,

and students trying to find a pathway in college. Some of the automotive pathways graduates can achieve are included below represented by the Classification of Instructional Programs Code (CIP 47.0617 but can be expanded to the whole section of 47) This includes the following:

47) MECHANIC AND REPAIR TECHNOLOGIES/TECHNICIANS.

- 47.00) Mechanics and Repairers, General.
 - 47.0000) Mechanics and Repairers, General.
- 47.01) Electrical/Electronics Maintenance and Repair Technology.
 - 47.0101) Electrical/Electronics Equipment Installation and Repair, General.
 - 47.0102) Business Machine Repair.
 - 47.0103) Communications Systems Installation and Repair Technology.
 - 47.0104) Computer Installation and Repair Technology/Technician.
 - 47.0105) Industrial Electronics Technology/Technician.
 - 47.0106) Appliance Installation and Repair Technology/Technician.
 - 47.0110) Security System Installation, Repair, and Inspection Technology/Technician.
 - 47.0199) Electrical/Electronics Maintenance and Repair Technology, Other.
- 47.02) Heating, Air Conditioning, Ventilation and Refrigeration Maintenance Technology/Technician (HAC, HACR, HVAC, HVACR).
 - 47.0201) Heating, Air Conditioning, Ventilation and Refrigeration Maintenance Technology/Technician (HAC, HACR, HVAC, HVACR).
- 47.03) Heavy/Industrial Equipment Maintenance Technologies.
 - 47.0302) Heavy Equipment Maintenance Technology/Technician.
 - 47.0303) Industrial Mechanics and Maintenance Technology.
 - 47.0399) Heavy/Industrial Equipment Maintenance Technologies, Other.
- 47.04) Precision Systems Maintenance and Repair Technologies.
 - 47.0402) Gunsmithing/Gunsmith.
 - 47.0403) Locksmithing and Safe Repair.
 - 47.0404) Musical Instrument Fabrication and Repair.
 - 47.0408) Watchmaking and Jewelrymaking.
 - 47.0409) Parts and Warehousing Operations and Maintenance Technology/Technician.
 - 47.0499) Precision Systems Maintenance and Repair Technologies, Other.
- 47.06) Vehicle Maintenance and Repair Technologies.
 - 47.0600) Vehicle Maintenance and Repair Technologies, General.
 - 47.0603) Autobody/Collision and Repair Technology/Technician.
 - 47.0604) Automobile/Automotive Mechanics Technology/Technician.**
 - 47.0605) Diesel Mechanics Technology/Technician.
 - 47.0606) Small Engine Mechanics and Repair Technology/Technician.
 - 47.0607) Airframe Mechanics and Aircraft Maintenance Technology/Technician.
 - 47.0608) Aircraft Powerplant Technology/Technician.
 - 47.0609) Avionics Maintenance Technology/Technician.
 - 47.0610) Bicycle Mechanics and Repair Technology/Technician.
 - 47.0611) Motorcycle Maintenance and Repair Technology/Technician.
 - 47.0612) Vehicle Emissions Inspection and Maintenance Technology/Technician.
 - 47.0613) Medium/Heavy Vehicle and Truck Technology/Technician.
 - 47.0614) Alternative Fuel Vehicle Technology/Technician.
 - 47.0615) Engine Machinist.
 - 47.0616) Marine Maintenance/Fitter and Ship Repair Technology/Technician.
 - 47.0617) High Performance and Custom Engine Technician/Mechanic.
 - 47.0618) Recreation Vehicle (RV) Service Technician.
 - 47.0699) Vehicle Maintenance and Repair Technologies, Other.
- 47.99) Mechanic and Repair Technologies/Technicians, Other.
 - 47.9999) Mechanic and Repair Technologies/Technicians, Other.

What effect has this program had on closing equity gaps?

The program believes that it is successfully closing equity gaps in a positive way by providing training and testing methods in non-traditional methods. These non-traditional methods include increasing confidence which according to the [EAB](#) is an effective method for retention as well as closing equity gaps which include learning gaps. The method being used by the UHMC Automotive Technology Program is the ASE entry-level certification program. This method allows students to receive practice and confidence in taking the complicated test in a real life situation. This certification is included in part of the A series certification process as well.

Current data is not being collected on equity gaps in the program however this data will be collected by survey during this year.

Awareness and knowledge of financial aid and student support services are provided to the Automotive Technology students in the syllabus as well as through talking to each class about applying for financial aid as well as grants and scholarships. The program also invites student support programs such as Kāko‘o Student Support to talk to students during class time as well as the Education Opportunity Center

2. Analysis of the Program/Unit

Discuss the Program’s or Unit’s strengths and areas to improve in terms of Demand, Efficiency, and Effectiveness based on an analysis of the program’s Quantitative Indicators or comparable unit-developed measures or program-developed metrics. Include a discussion of relevant historical-trend data on key measures (i.e., last three years).

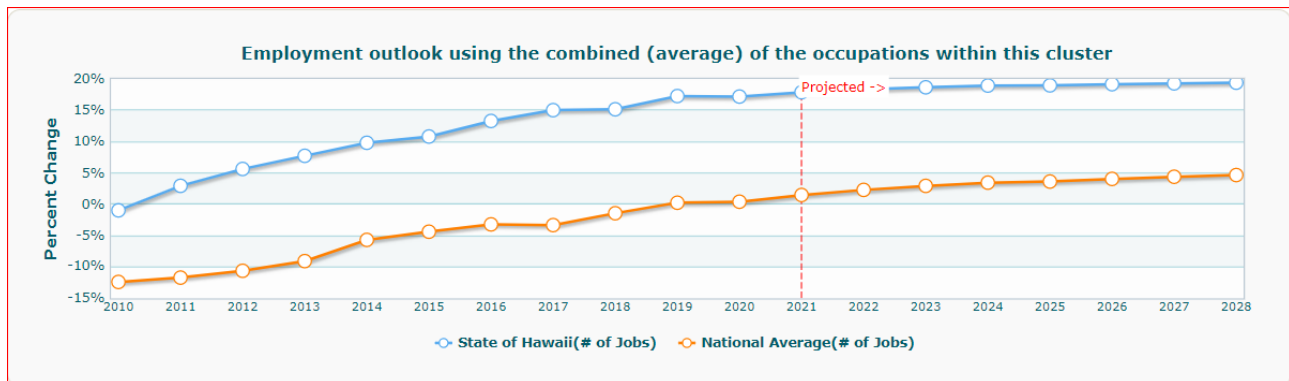
Discuss significant program or unit actions (new certificate(s), stop outs, gain/loss of position(s), results of prior year’s action plan, etc.). Include external factors affecting the program or unit.

Instructional programs must include ARPD health indicators with benchmarks to provide a quick view on the overall condition of the program; CTE programs must include an analysis of Perkins Core indicators for which the program did not meet the performance level.

2021 UH Maui College ARPD
Program: Automotive Technology

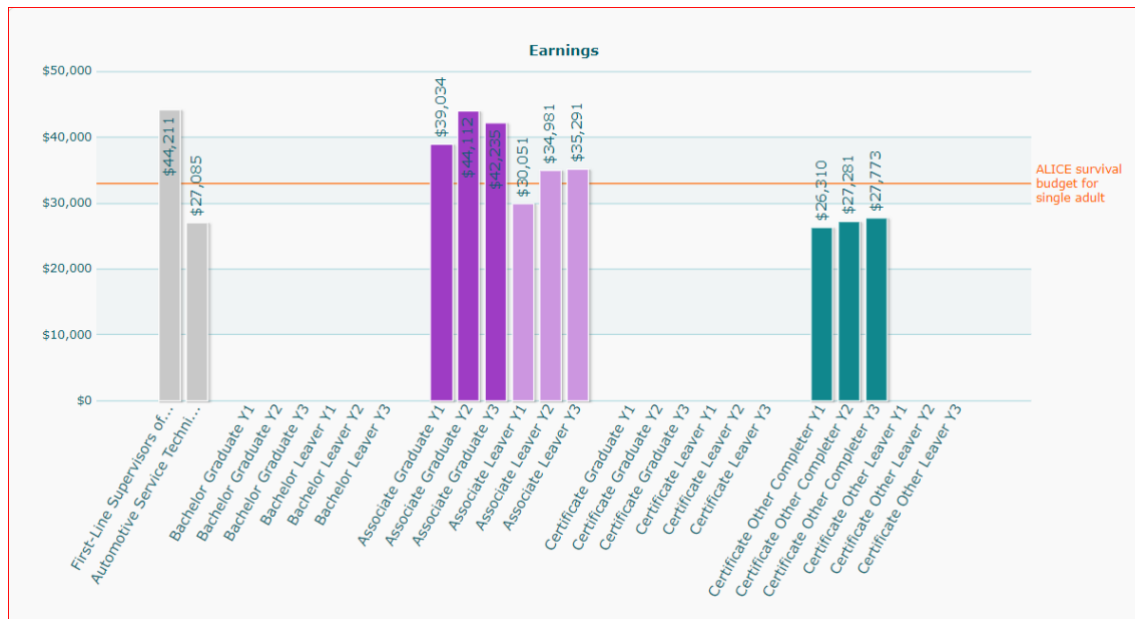
#	Demand Indicators	2018 - 19	2019 - 20	2020 - 21	Demand Health
1.	New & Replacement Positions (State)	636	554	514	Healthy
2.*	New & Replacement Positions (County Prorated)	79	59	54	
3.	Number of Majors	41	39	42	
3a.	Number of Majors Native Hawaiian	10	11	11	
3b.	Fall Full-Time	49%	68%	61%	
3c.	Fall Part-Time	51%	33%	39%	
3d.	Fall Part-Time who are Full-Time in System	0%	0%	0%	
3e.	Spring Full-Time	55%	39%	38%	
3f.	Spring Part-Time	45%	61%	62%	
3g.	Spring Part-Time who are Full-Time in System	0%	0%	0%	
4.	SSH Program Majors in Program Classes	678	706	645	
5.	SSH Non-Majors in Program Classes	44	23	63	
6.	SSH in All Program Classes	722	729	708	
7.	FTE Enrollment in Program Classes	24	24	24	
8.	Total Number of Classes Taught	14	14	16	

The headcount for majors has declined from 41 in 2018 to 39 in 2019; however, the FTE enrollment has stayed consistent at 24 throughout the last 3 years. There is high demand for program graduates with 54 projected county positions. Previous program data provides important ASE industry entry-level certifications that indicate the success of students in a variety of areas for ASE competencies with 97.92% pass rates for all 105 attempted tests.



The Automotive Industry reports to ARPD that there will be a 5% increase in the next 7 years, for positions in this occupation. This positive increase of required automotive positions supports the demand for qualified entry level technicians. This data also shows that retraining of current technicians will be necessary as technicals are promoted.

2021 UH Maui College ARPD
Program: Automotive Technology



According to the Earnings reports for the Automotive Industry data from ARPD, Associate Graduates earn a salary between \$39,034 and \$44,112 between years 1 and 2. Associate leavers earn less than the graduates with a salary ranging from \$30,051 at year 1 and \$35,291 at year 3. The data also shows that certificate completers earn the least at a range of \$26,310 to \$27,773. This data proves that students who complete the Associates degree have better chances of making the most pay next to First line Supervisors of Automotive Service Technicians which earn a range of \$27,065 to \$44,211.

The following data shows that the Automotive Industry supports the training of the students from the UHMC Automotive Program by hiring 19 of these students in the 3 years of being in the program with either an Associate degree or certificate graduation completion or not.

Associate	Certificate	Certificate Other
<p>Median earnings of students in this Automotive Technology program who were found working in Hawaii at least 3 quarters and who earned at least full-time minimum wage in the first, second, and third year after graduating or leaving. (includes: AA, AAS, AS, ATS, APC).</p> <p>19 students graduated</p> <ul style="list-style-type: none"> Year 1: 15 were found working Year 2: 16 were found working Year 3: 14 were found working <p>64 students did not graduate</p> <ul style="list-style-type: none"> Year 1: 30 were found working Year 2: 31 were found working Year 3: 33 were found working 	<p>Median earnings of students in this Automotive Technology program who were found working in Hawaii at least 3 quarters and who earned at least full-time minimum wage in the first, second, and third year after graduating or leaving. (includes: CA).</p> <p>* students graduated</p> <ul style="list-style-type: none"> Year 1: * were found working Year 2: * were found working Year 3: * were found working <p>* students did not graduate</p> <ul style="list-style-type: none"> Year 1: * were found working Year 2: * were found working Year 3: * were found working 	<p>Median earnings of students in this Automotive Technology program who were found working in Hawaii at least 3 quarters and who earned at least full-time minimum wage in the first, second, and third year after graduating or leaving. (includes: CC, CO).</p> <p>15 students completed</p> <ul style="list-style-type: none"> Year 1: 6 were found working Year 2: 7 were found working Year 3: 8 were found working <p>students did not complete</p>

2021 UH Maui College ARPD
Program: Automotive Technology

The data supporting this can be found at this

link(<https://uhcc.hawaii.edu/varpd/index.php?y=2020&c=MAU&t=CTE&p=2226>)

Of the total 83 students which data was collected from 19 students graduated. 64 students did not graduate however 83 of them were found employed by year 3. This data frames the conclusion that the automotive industry is cannibalizing 64 of the students from the program. The Industry should be held accountable for this in the form of partnerships with the college. The Program Coordinator is working on the framework for this plan with the members of the advisory committee to form a solution to the loss of completers.

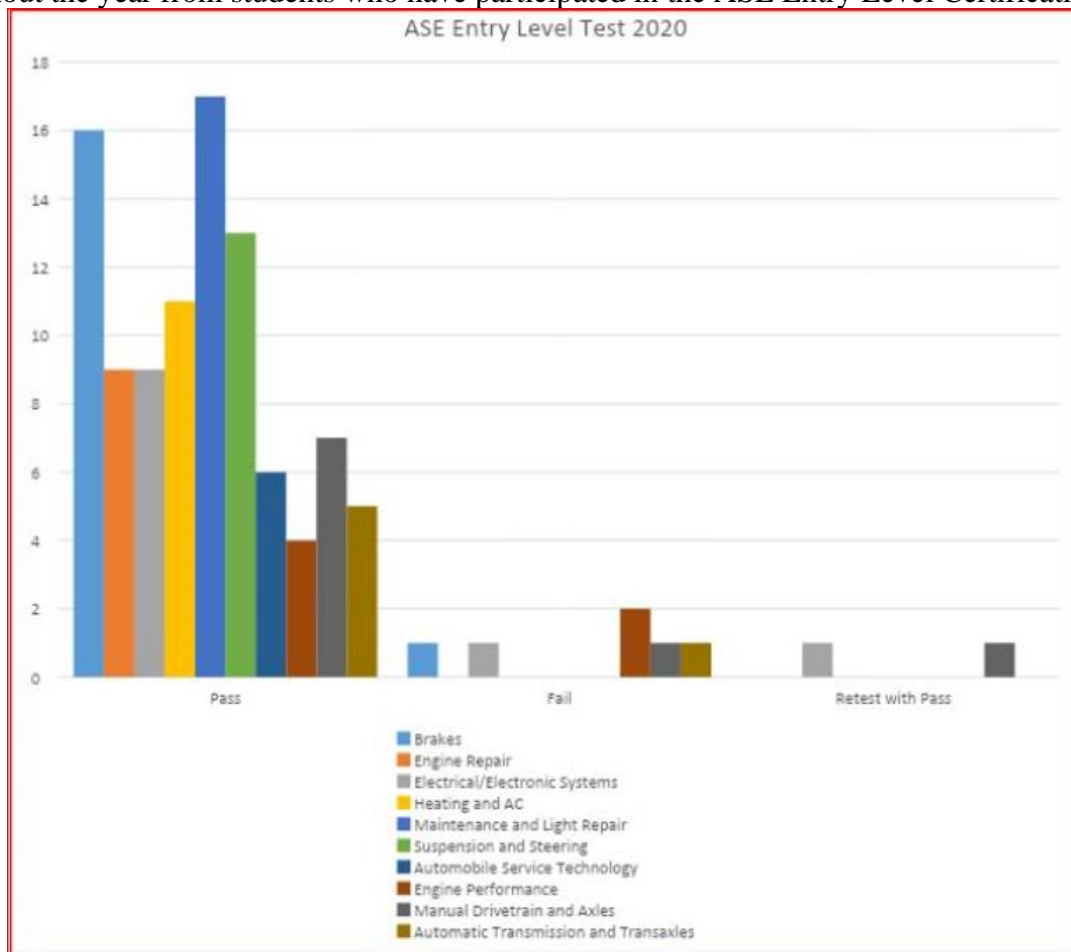
We have lost the lecturer for the rest of the year and are in search of new lecturers. Ads have been placed for applicants and the Program Coordinator has been in the process of recruitment for lecturers as well as substitute lecturers in case of an absence by an instructor. This recruitment is being held within the Automotive Industry which includes the OEM and local aftermarket businesses on the island of Maui.

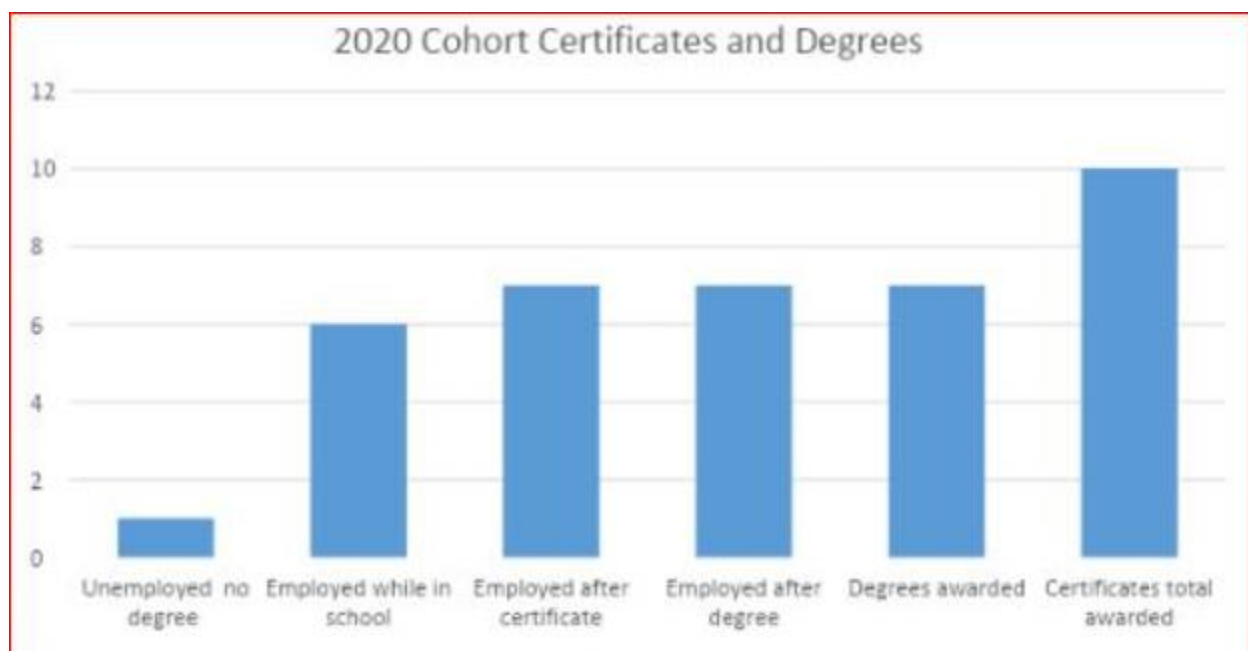
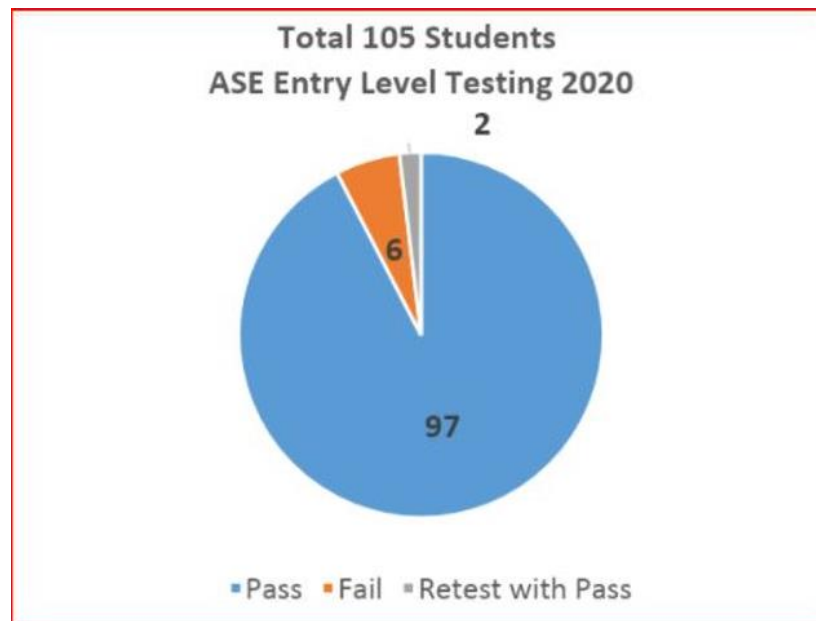
#	Efficiency Indicators	2018 - 19	2019 - 20	2020 - 21	Efficiency Health
9.	Average Class Size	13	14	12	Healthy
10.*	Fill Rate	81.1%	85.1%	73.8%	
11.	FTE BOR Appointed Faculty	2	2	2	
12.*	Majors to FTE BOR Appointed Faculty	21	20	21	
13.	Majors to Analytic FTE Faculty	21	20	21	
13a.	Analytic FTE Faculty	2	2	2	
14.	Overall Program Expenditures	\$318,262	\$243,308	\$238,482	
14a.	General Funded Budget Allocation	\$217,289	\$191,918	\$210,375	
14b.	Special/Federal Budget Allocation	\$46,041	\$23,119	\$18,283	
14c.	Tuition and Fees	\$54,932	\$28,271	\$9,824	
15.	Cost per SSH	\$441	\$334	\$337	
16.	Number of Low-Enrolled (<10) Classes	1	1	5	

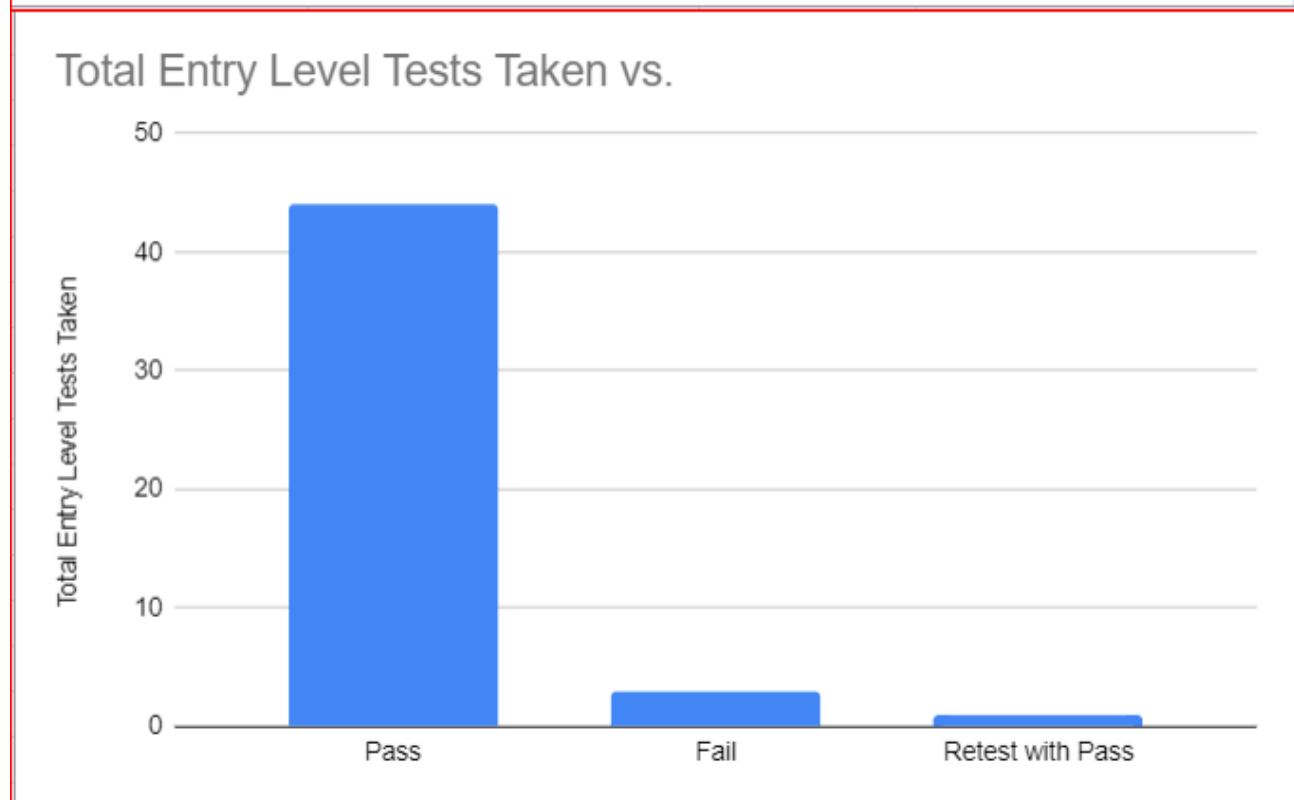
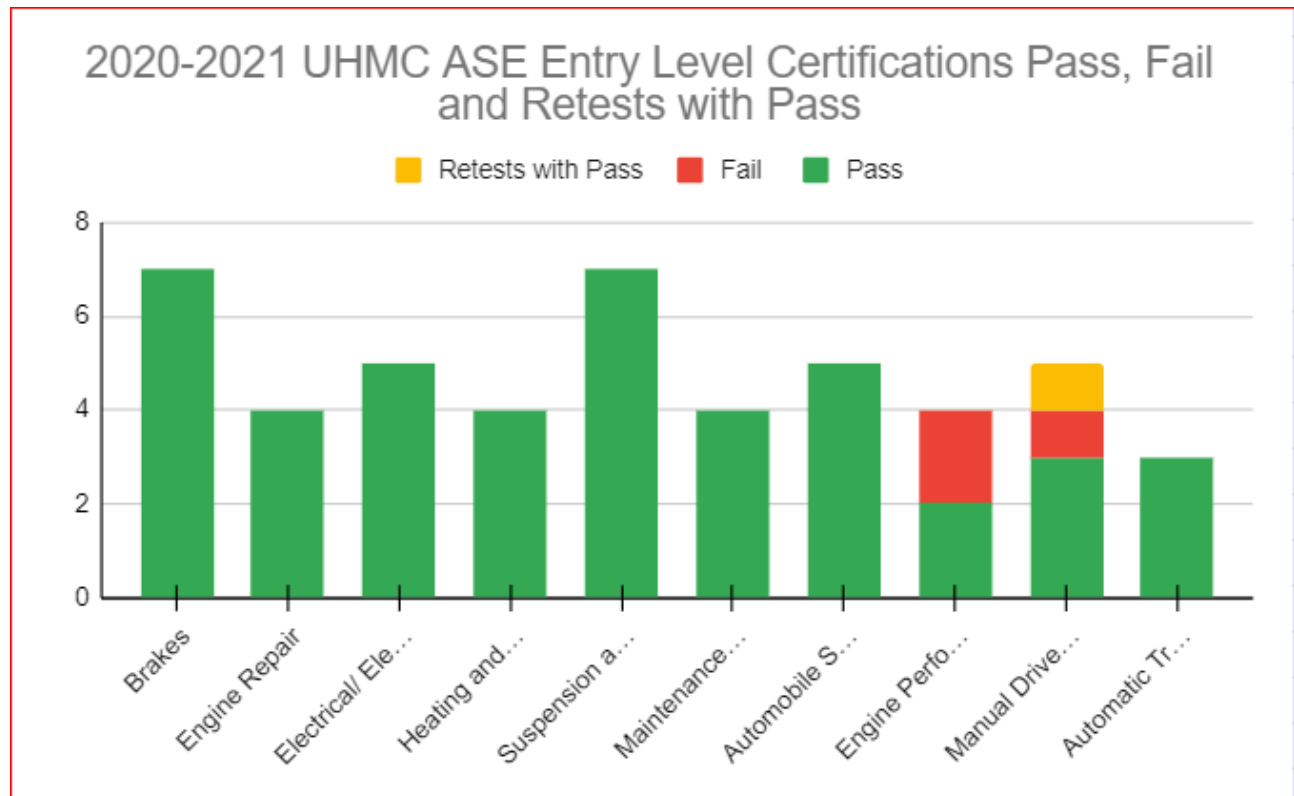
2021 UH Maui College ARPD
Program: Automotive Technology

#	Effectiveness Indicators	2018 - 19	2019 - 20	2020 - 21	Effectiveness Health
17.	Successful Completion (Equivalent C or Higher)	75%	73%	84%	Progressing
18.	Withdrawals (Grade = W)	4	7	3	
19.*	Persistence Fall to Spring	67%	80%	85%	
19a.	Persistence Fall to Fall	38%	50%	63%	
20.*	Unduplicated Degrees/Certificates Awarded	13	8	3	
20a.	Degrees Awarded	10	7	1	
20b.	Certificates of Achievement Awarded	8	7	1	
20c.	Advanced Professional Certificates Awarded	0	0	0	
20d.	Other Certificates Awarded	5	3	4	
21.	External Licensing Exams Passed ¹				
22.	Transfers to UH 4-yr	1	0	0	
22a.	Transfers with credential from program	1	0	0	
22b.	Transfers without credential from program	0	0	0	

The following charts provides data, from the Provided Perkins, funds showing the collection of data throughout the year from students who have participated in the ASE Entry Level Certifications.







2021 UH Maui College ARPD
Program: Automotive Technology

#	Perkins Indicators	Goal	Actual	Met	
29.	1P1 Postsecondary Placement	33	100	Met	
30.	2P1 Earned Recognized Credential	33	53.13	Met	
31.	3P1 Nontraditional Program Concentration	N/A	N/A	N/A	
32.	Placeholder - intentionally blank	N/A	N/A	N/A	
33.	Placeholder - intentionally blank	N/A	N/A	N/A	
34.	Placeholder - intentionally blank	N/A	0	N/A	

The Perkins Indicators for the 2020-2021 year including 1P1 and 2P1 were both met and exceeded the goals set. To continue to meet these Perkins Indicators further funding will be requested to keep the goals met at these standards set.

1. Fall to fall retention appears low at 47%. Please be sure to review the 2020 data and share an analysis of why this might be and what might improve this rate.

The fall to fall retention rate appears low however data hasn't been collected to show where these students have moved to or whom they are currently employed with. Either way the data is perceived will still show that the UHMC AMT Program is providing a successful pathway to employment in the local Automotive Industry. The AMT program believes that even though students are being employed that the local automotive industry is still cannibalizing students from the program. Students are getting hired without proper completion of training. The program coordinator has been busy in communicating with local automotive businesses that are interested in partnering with the UHMC Automotive Technology program in the form of an internship process, which include both Automotive and Autobody shops.

Another factor to consider when competing with the local automotive industry is the ASE certification process which may sway how a student views the program degree choice as opposed to learning a little by taking a few courses then choosing to work instead and bypassing degree or certificate completion. There are the new options given from ASE(the certifying body for automotive work in the United States). <https://workexp.ase.com/FormInstr.aspx>

2021 UH Maui College ARPD
Program: Automotive Technology

ASE recognizes the following types of automotive service industry work experience:

Category	Description	Minimum amount of experience	Required for these Tests
Repair Technician	Hands-on experience maintaining, servicing, and/or repairing light-duty or heavy-duty motor vehicles.	1 year full-time (or part-time equivalent)	G1
		2 years full-time (or part-time equivalent)	A1-A9, B2-B5, E1-E3, F1, H1-H8, MIL2-MIL8, S1-S7, T1-T8, and X1
		3 years full-time (or part-time equivalent)	L1, L2, and L3
Service Consultant	Hands-on experience as an automotive service writer/consultant or service manager.	2 years full-time (or part-time equivalent)	C1
Parts Specialist	Hands-on experience as a parts counterperson or managing a wholesale or retail parts store or in-house parts department.	2 years full-time (or part-time equivalent)	P1, P2, and P4
Collision Damage Estimator	Hands-on experience as an automotive collision damage estimator/adjuster.	2 years full-time (or part-time equivalent)	B6

Work experience as a **Repair Technician** does not satisfy the separate experience requirement for **Service Consultant**, **Parts Specialist**, **Collision Damage Estimator**, or the **High School and College Instructors alternative method** described below.

Formal Education: You can substitute high school, trade school, or community college education for part of the **Repair Technician** work experience requirement, as shown below. This credit can be combined with additional hands-on work experience if needed to meet the 1, 2, and 3-year **Repair Technician** requirements.

Formal Education / Training	Credit toward 1-year Repair Technician requirement	Credit toward 2-year Repair Technician requirement	Credit toward 3-year Repair Technician requirement
1) Complete any ASE-Accredited Program – Auto, M/H Truck or Collision-Refinish, including MLR, AST, MAST and all other current or grandfathered ASE standards	6 months	1 year	1 year
-or- 2) Complete an ASE-Accredited OEM-Sponsored Co-op Program	1 year	2 years	2 years
-or- 3) Pass 3 or more different ASE Entry-Level Certification Program Tests	6 months	1 year	1 year
-or- 4) All other training: 2 months of full-time training (or 200 program hours) equals 1 month credit	Up to 6 months	Up to 1 year	Up to 1 year

This section should be looked at carefully as ASE has modified its requirements to include having passed 3 or more ASE entry level certification program tests which the UHMC AMT program provides to the students taking Automotive or Autobody classes. This valuable certification data can be seen above for the 2020 year. The program coordinator believes that by providing these tests to the student not only encourages students to take the certifications but also keeps them in the program till graduation.

2. Explain the type of general education course changes the AMT program proposes.

The AMT program proposes a business for automotive type English or writing course where students are asked to write in the automotive required type of business writing. This course would replace the requirement of English and possibly be included in a writing intensive course by allowing students to create work orders in complete sentences and answer questions regarding their work done on a vehicle to either a customer or a service manager. This course would also include explaining detailed instructions to what was tested and hypothesis to the problem and an offered solution including the steps to the repair as well as a verification of repair.

The AMT program currently has a math and physics course that has been modified for the industry requirements asked of our students.

3. How does the high credit-load impact students each semester? Is this an issue for students?

Does this impact ability to balance work and coursework? Does this impact overall graduation rates? Are there any other campuses that do this with less credits and how?

The high credit load impacts the students lives negatively. Students whom have to work have very little time to accomplish both the degree and the maintain part time employment. This can also be looked at in the arpd data which shows that at some point the students decide that working full time is necessary to living here on Maui. The industry doesn't require the degree or certificate and this sways a majority of the students into employment over school.

The ASE education foundation has a requirement of how many hours an automotive program must maintain in order to be accredited and can be found at this link.

https://aseeducationfoundation.org/uploads/2018-Auto-Program-Standards_FV.docx

The ASE Accreditation hour requirements are:

Programs must meet the following hour requirements based on the level of accreditation sought.	
Maintenance & Light Repair	540 hours combined classroom and lab/shop instructional activities
Automobile Service Technology	840 hours combined classroom and lab/shop instructional activities
Master Automobile Service Technology	1200 hours combined classroom and lab/shop instructional activities

The current hours that the UHMC AMT program automotive courses totals: **1,710 hours**. This is 510 hours over the MAST program requirements from ASE.

These hours do not include the General Education requirements for the degree.

The Program Coordinator suggests modifications to the AMT 262 course to reduce the number of hours to 120 instead of 240 or by implementing an internship program to make more of an industry partnership. The AMT 240 and 246 courses will be combined into Engine performance class and will the credit load will be reduced into 5 credits. The new program hours for automotive classes will be changed into 1,587 hours.

4. Share the program's NATEF status in the next program review

5. What are 5 year visions for the AMT program? Can the program increase its student capacity? Are there curriculum innovations that need to be addressed? What is the vision for the ABRP courses? Capacity?

The AMT program can increase its student capacity in both automotive and autobody courses. Covid distance restrictions as well as classroom space is the only factor limiting the size of classes currently offered in the automotive classroom. The autobody classroom is currently double the size of the automotive classroom and is being used by the other instructor to hold classes concurrent to the classes being taught in the automotive classroom. There is more room for increased capacity in the autobody classroom for autobody courses. Unfortunately recruitment strategies didn't work last year which were offered in person as well as online. Current class capacities reflect this but the Program Coordinator has been diligently visiting the automotive programs in local high schools since the covid ban was lifted for visitors.

Innovations in both Automotive and Autobody courses can increase capacity however the vision for the autobody courses are to provide a pathway of internship from within the college and local autobody shops. This has been discussed in the program advisory meetings however nothing has been planned yet as this is the first semester that autobody classes have been in action. Further review of autobody classes will be taken in Spring after students return for further training and after given the chance to take the ASE Entry Level Certifications.

In conjunction with recruitment the AMT Program Coordinator has worked on a PLA with the local DOE CTE director Dennis Sasai. This PLA would articulate with the future curriculum changes which would modify the AMT 100 Introduction to Automotive course. This PLA would allow more students who are entering into the automotive program the ability to bypass the AMT 100 course allowing more seats in that course and would fill more seats in higher than 100 level automotive courses.

3. Program Student Learning Outcomes or Unit/Service Outcomes

- a) List of the Program Student Learning Outcomes or Unit/Service Outcomes
- b) Program or Unit/Service Outcomes that have been assessed in the year of this Annual Review.
- c) Assessment Results.
 - a. PLO: Provide a summary of the method used for assessment i.e. exit project or capstone results, proficiency standards, stakeholders participating in the assessment process, how the data was collected/analyzed, and the results. For brevity, include a link to complete assessment reports from the Academic Affairs website or include your write-up in the appendix.
 - b. CASLO: Provide a summary of CASLO assessment in the year of this annual review.
 - i. Identify CASLO and program's assessment method CASLOs

ii. Provide a summary of the analysis, results, and recommendations

- d) Changes that have been made as a result of the assessment results.

UHMC AMT Assessment can be found

here: <https://sites.google.com/hawaii.edu/amtassessmentpring-2021/home>

UHMC AMT Program Learning Outcomes

AMT PLO 1. Demonstrate the ability to communicate with customers and other industry trade professionals.

AMT PLO 2. Demonstrate effective retrieval of instructional and repair information for automotive diagnosis and repair procedures.

AMT PLO 3. Demonstrate the ability to identify characteristics and functions of automotive components.

AMT PLO 4. Demonstrate the ability to diagnose, service, and repair automotive vehicles.

AMT PLO 5. Demonstrate proper pre-employment skills including resume writing, interview preparation, and professionalism related to automotive repair industry.

Portfolio Model #3 was used for the assessment of these two courses AMT 240 and 246.

Portfolio Model #3

1. Identify program courses that progress toward exit level Program Learning Outcomes (PLO) and appropriate CASLOs.
2. Identify specific assignments and/or assessments for each course and select student evidence.
3. Review student evidence by course.
4. Review student evidence collectively by program.

3. College-wide Academic Student Learning Outcomes (CASLOs)

<https://sites.google.com/a/hawaii.edu/curriculum-committee/uh-maui-college/forms>

3.1) Creativity Level

Does Not Satisfy

3.2) Critical Thinking Level

Satisfy

3.3) Information Retrieval and Technology Level

Satisfy

3.4) Oral Communication Level

Does Not Satisfy

3.5) Quantitative Reasoning Level

Satisfy

3.6) Written Communication Level

Does Not Satisfy

UH Maui College CASLO Assessment Ignitions AMT 246

Standard 5 –Critical Thinking – *Apply careful, analytical thinking to address issues and solve problems.*

Criteria ↓ Ratings →	Exemplary achievement	Sufficient achievement	Insufficient achievement	Not applicable
Outcome 5.1 Identify and explain problems or issues	Presents key information (data, problems, issues, ideas) to accurately define problems or issues with appropriate depth and complexity.	Presents relevant information (data, problems, issues, ideas) to define problems or issues with sufficient accuracy, depth, and complexity.	Presents information without sufficient relevance, accuracy, depth, or complexity to adequately define the problem or issue.	3
Outcome 5.2 Investigate multiple solutions and perspectives	Demonstrates clear understanding of diverse approaches to solving a problem or addressing an issue.	Demonstrates adequate understanding of multiple approaches to solving a problem or addressing an issue.	Lacks sufficient understanding of more than one approach to solving a problem or addressing an issue.	3
Outcome 5.3 Scrutinize and interpret evidence or proposed solutions	Assesses evidence, arguments, or proposed solutions thoroughly to develop strong understanding or insightful interpretations.	Assesses evidence, arguments, or proposed solutions to develop sufficient understanding or interpretations.	Fails to evaluate evidence or proposed solutions sufficiently, resulting in an inadequate understanding or interpretation.	3
Outcome 5.4 Analyze assumptions and context	Carefully examines one's own assumptions and the relevance of context while diagnosing problems or building support for a position.	Adequately examines one's own assumptions and the relevance of context while diagnosing problems or building support for a position.	Inadequate examination of assumptions or context leads to poor diagnosis of a problem or limited support for a position.	3
Outcome 5.5 Synthesize evidence and perspectives	Skillfully synthesizes relevant evidence, strategies, and/or viewpoints to provide strong support for a position or proposed solution.	Synthesizes relevant evidence, strategies, and/or viewpoints to support an acceptable position or proposed solution.	Evidence, strategies, and/or viewpoints are not adequately synthesized to support a position or proposed solution.	3
Outcome 5.6 Formulate conclusions or solutions	Formulates a clear conclusion or solution that acknowledges limitations and alternative viewpoints while anticipating consequences.	Formulates a position that recognizes limitations and alternative viewpoints; includes discussion of consequences.	Position is formulated without sufficient recognition of limitations, alternative viewpoints, or consequences.	3

UHMC's standards, performance indicators, and outcomes for critical thinking are derived from the Association of American Colleges and Universities VALUE rubrics.

A discussion of the CASLO's was accomplished through Zoom meeting. An explanation of the course and PLO's were reviewed. The above CASLO list reviewing section 5 or Critical Thinking was agreed upon with the description of the course by the advisory boards agreement.

4. Action Plan

Based on findings in Parts 1-3, develop an action plan for your program or unit from now until your next Comprehensive Review date. Be sure to focus on areas to improve identified in ARPD data, student learning or unit/service outcomes, results of survey data, and other data used to assess your program or unit. This plan should guide your program/unit through to the next program/unit review cycle and must detail measurable outcomes, benchmarks and timelines. Include an analysis of progress in achieving planned improvements.

* CTE programs must include specific action plans for any Perkins Core Indicator for which the program did not meet the performance level.

Specify how the action plan aligns with the College's Mission and Strategic Plan.

Address opportunities for re-envisioning the program. How does the plan address emerging or future economic opportunities? What is the projected industry/community demand in 5-6 years?

Discuss how these recommendations for improvement or actions will guide your program or unit until the next Comprehensive Review. Be sure to list resources that will be required, if any, in section 5 below.

*The action plan may be amended based on new initiatives, updated data, or unforeseen external factors.

The AMT program addresses the action plan by looking backwards and into the future of the automotive and autobody industries. The recommendations of advisory members were:

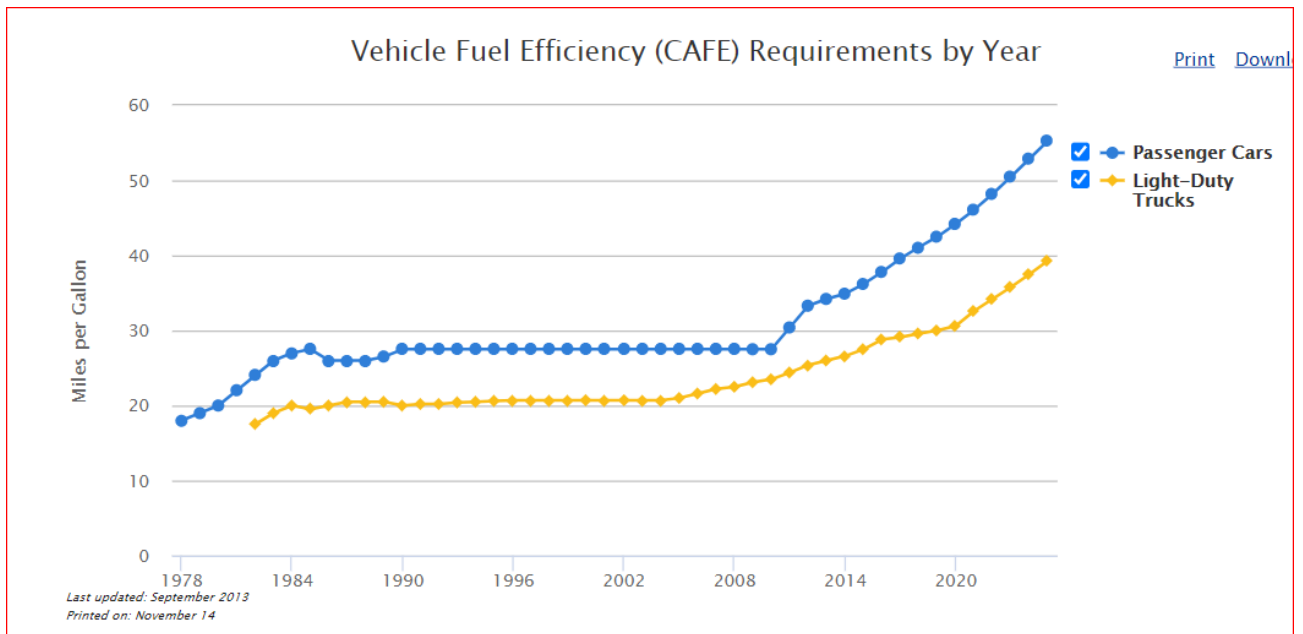
- The size of the current shop limits the variety of vehicles that the program can maintain and have space to safely work in groups as well as on individual tasks assigned with the current curriculum and that with the combination of Electric and Petroleum-based fueled vehicles will create a cramped space for students to learn properly.
- It was recommended that all the courses use the methods being used in the classes that were discussed in the assessment by the advisory members.
- The two courses separation was also discussed as the ASE test is the combination of both Ignitions and Fuels and Emissions. It is recommended that both courses be combined to teach engine performance in a more complete manner.
- A Dynamometer was recommended and was supported by the advisory members.
- Otto recommended that some older cars be used to teach fundamental theories of Carburation and older ignition systems. I explained that we only have one vehicle that can fit that category and Otto thought that wasn't enough.
- The members also discussed that if space wasn't available for the vehicles that modular models should be purchased and used to teach what is needed to complete the curriculum.
- Safety is also a large factor with space and exhaust hoses and fans are recommended to work in the space that is available for engine performance work to prevent dangerous carbon monoxide poisoning.
- Some of the current PLO's don't match the courses being assessed in the context of "resume writing and interview preparation". It was recommended to try and include some of these tasks into the courses being assessed even though time is limited with the current curriculum.

The UHMC AMT Program action plan includes

1. Taking into consideration all the recommendations of the advisory board members from the program assessment listed above. The Department chair and Dean will be consulted with about many of the standards set by ASE Education Foundation. These standards involve significant upgrades to the facilities and the current tools required for accreditation. The recommendations by advisory board are being followed currently, such as the Dynanometer which is held up at the facilities requirements due to the age of the infrastructure and current power grid limitations. The size of the shop is being reviewed for efficiency and use of space. Modular training units have been written for in Perkins grant and Program

Coordinator will continue to pursue grant funded acquisitions for more to make use of the spaces provide. Safety factors are being reviewed and more hoses will be acquired for exhaust fumes which are dangerous however a proper ventilation system should be installed to move all toxic exhaust fumes out of shop.

2. Answering and addressing the ASE Education Foundation(NATEF) Standards by current administration and Full Time Faculty members will help to create a budget and timeline for accreditation. This accreditation will solve the lack of Industry financial and physical support for the UHMC AMT program. Industry does not support non accredited schools.
3. Perkins funds will be requested for the replacement of vehicle work to training modules. The vehicles that are donated to the program often require significant repairs to safety and functional parts to continue training from course to course. With the budget restraints minimum repairs have been allotted from the budget and students training have been minimized.
4. NATEF or ASE Education Foundation accreditation application will be continued to be pursued by program coordinator by continuing to upgrade to current program standards by approval of department chair and the involvement of new and active advisory board members. The program coordinator has learned of equipment and tools that has not been replaced that is required by NATEF(ASE Education Foundation) and will continue to update these requirements as quickly as possible in order to turn in application for accreditation. Some of the standards that must be looked at by the school and advisory board include:
 - 8.5
 - 8.6
 - 9.1
 - 9.3
 - 9.7
 - 9.8
 - 9.9.
5. The program plans to make changes to the schedule coming out of the pandemic to offer students a more streamlined graduation plan. The current plan is under works with the Program Coordinator, Department Chair, Program Counselor, and Dean.
6. Student support in the form of ASE Entry Level Certification tests as well as Professional level certifications will be attempted to be offered through Perkins funding. This immediate change to the programs ability to offer trained and certified entry level technicians will offer the program the ability to keep students till completion. The support of local industry will follow when they witness the level of qualified technicians into the industry and the students will want to stay to graduation when they see what benefits the program offers them that the local industry does not.
7. Currently the ASE Education Foundation does not require a full development of a program involving hybrid or electric vehicle certificate or degree, however it is believed by the UHMC AMT program that due to the current federal CAFE(Corporate Average Fuel Economy standards) that the program should innovate earlier and provide the community and industry with a certificate training students in preparation for these changes.
(<https://www.govinfo.gov/content/pkg/FR-2012-10-15/pdf/2012-21972.pdf>)



Kaua'i Community College currently has a certification in Electric Vehicles and Hybrids and Leewards Community College has been asked by industry to develop a certification to fulfill the demand that Industry is placing on their employees. This would be a significant develop to UHMC and the island of Maui as we currently prepare for higher fuel prices and implications of all manufacturers moving the production of vehicles to Electric and Hybrid across of their fleets. This change would involve moderate to significant changes to the current infrastructure as safety spaces are required for high voltage training and repairs to these types of vehicles. This should have a minimum of 60" around the whole vehicle which includes a corded off section with safety signs requiring high voltage gloves when entering. The list of training can include:

1. Safety
2. OE (original equipment) Training
3. Technology

The UHMC Automotive Program has been recently funded with Perkins grant to purchase and acquire the safety and tools required for the implementation of the technology into the program. Training from the company ACDC was supported from the Chancellor to provide the program the education needed to further train students.

The last step of implementing this into the current infrastructure is to modify automotive building with the space provided to allow training to occur within the required safe space rules. These allotted bays would require safety tape and signs warning of high voltage work. It would also require enough safe space to remove and disassemble high voltage components for teaching purposes as well as repair.

1. 1 year plan
 - a. Modify shop space and examine current equipment for functionality and storage.

- b. Offer 190 V courses in EV and Hybrid vehicles during summer
- c. Acquire updated tools and equipment to match the industry standards and provide training to students to ensure that the automotive program is current and valuable to the Automotive industry.
- d. Increase capacity of current courses in automotive and autobody. This will be accomplished by recruitment strategies with Program Coordinator and new recruitment specialist. Increasing capacity will also be increased by providing new and current industry knowledge in both self driving cars and non self driving cars with incoming supplies funded by Perkins and by creating new partnerships with local industry who will provide scholarships and employment opportunities.
- e. Continue recruitment for lecturers in automotive and autobody courses.

2. 5 year plan

- a. Have all standards met by ASE Education Foudation and Accreditaion complete by either a new facility or significant modifications to the current facility
- b. Acquire Industry support from either Ford, Honda, Chevy, or Toyota.
- c. Have a Program certification in EV and Hybrid vehicles.
- d. Increase capacity of courses in automotive and autobody to 16.
- e. Continue partnerships with Industry and local businesses to provide multiple pathways of employment and Internship opportunities.
- f. Modifications to curriculum to provide Internship opportunities to students which will require modifications to courses taught to balance the work school schedule that currently exists. Reduction and reworking the credit loads that exists for AMT 262, 240, and 246. These curriculum changes will help to reduce the total hours of the program to 1,587 from 1,710 hours.

5. Resource Implications

Detail any resource requests, including reallocation of existing resources (physical, human, financial). *Note that CTE programs seeking future funding via UHCC System Perkins proposals must reference their ARPD Section 4. Action Plan and this ARPD Section 5. Resource Implications to be eligible for funding.

What is the cost? How can your program plan to reduce cost and streamline? Could elements of this program be combined with another program? Discuss any potential system partnerships and/or opportunities for collaboration.

Increase CTE General Fund Department Operating Budget
from \$23,250 to \$35,000

Over the last two budget cycles the CTE Operating budget has been drastically cut 25% from \$31,000 to \$23,250, to be shared by the Construction Technology, Automotive/Auto Body, and

Fashion Technology programs, severely reducing our ability to replicate real-world automotive tasks and scenarios. During the same timeframe, costs of practically all material resources, especially expendables, for the aforementioned programs have increased exponentially due to material shortages, production and transportation costs, and an extremely competitive construction and housing market. For example: one sheet of ½” plywood for a basic carpentry class that cost \$29-\$32 two years ago now sells for \$48, a cost increase of more than 30%. Another example is brake parts and filters which have also increased close to double in price. Additionally, the Automotive program is facing rising disposal costs for hazardous materials such as fluids, tires and batteries. These examples are par for the costs of all of our CTE programs. Although rapidly rising costs for products and services used for instruction and operation of these programs is projected to level off in the future (at a higher cost than before budget cuts), these programs cannot be expected to continue to offer quality instruction and curriculum operating on a budget of less than what is being requested. These budget restraints also affect the accreditation process of the UHMC AMT program as old tools and equipment breaking down delaying some of the training that is required for courses.

One solution to this problem can be to charge students for some of the supply costs such as the student life fees added into the tuition.

To avoid future issues with the old and inadequate structure requirements of the standards set aside for facilities, the UHMC AMT program would recommend an updated building which could be designed around the requirements set aside by the ASE Education Foundation. These requirements can be found at this link: https://aseeducationfoundation.org/uploads/2018-Auto-Program-Standards_FV.docx

These major facilities changes would eliminate chasing the required standards for accreditation. The program also believes that the Program Coordinator should be allowed to visit another articulated UH campus which holds the ASE Education Foundation (NATEF) accreditation to see what can be done to modify the current facility to acquire the accreditation. This day visit could give new ideas for making the current facility work until significant funding can be acquired for the new facility.

☐ I am NOT requesting additional resources for my program/unit.

6. Optional: Edits to Occupation List for Instructional Programs

Review the Standard Occupational Classification (SOC) codes listed for your Instructional Program and verify that the occupations listed align with the program learning outcomes. Program graduates should be prepared to enter the occupations listed upon program completion. Indicate in this section if the program is requesting removal or additions to the occupation list.

☒ I am requesting changes to the SOC codes/occupations listed for my program/unit.

After reviewing the SOC codes the program believes that the following codes should be included in the list:

- 49-2090 Miscellaneous Electrical and Electronic Equipment Mechanics, Installers, and Repairers
 - 49-2091 [Avionics Technicians](#)
 - 49-2092 [Electric Motor, Power Tool, and Related Repairers](#)
 - 49-2093 [Electrical and Electronics Installers and Repairers, Transportation Equipment](#)
 - 49-2094 [Electrical and Electronics Repairers, Commercial and Industrial Equipment](#)
 - 49-2095 [Electrical and Electronics Repairers, Powerhouse, Substation, and Relay](#)
 - 49-2096 [Electronic Equipment Installers and Repairers, Motor Vehicles](#)
 - 49-2097 [Audiovisual Equipment Installers and Repairers](#)
 - 49-2098 [Security and Fire Alarm Systems Installers](#)
- 49-3000 Vehicle and Mobile Equipment Mechanics, Installers, and Repairers
 - 49-3010 Aircraft Mechanics and Service Technicians
 - 49-3011 [Aircraft Mechanics and Service Technicians](#)
 - 49-3020 Automotive Technicians and Repairers
 - 49-3021 [Automotive Body and Related Repairers](#)
 - 49-3022 [Automotive Glass Installers and Repairers](#)
 - 49-3023 [Automotive Service Technicians and Mechanics](#)
- 49-3040 Heavy Vehicle and Mobile Equipment Service Technicians and Mechanics
 - 49-3041 [Farm Equipment Mechanics and Service Technicians](#)
 - 49-3042 [Mobile Heavy Equipment Mechanics, Except Engines](#)
 - 49-3043 [Rail Car Repairers](#)
 - 49-3053 [Outdoor Power Equipment and Other Small Engine Mechanics](#)
- 49-3090 Miscellaneous Vehicle and Mobile Equipment Mechanics, Installers, and Repairers
 - 49-3091 [Bicycle Repairers](#)
 - 49-3092 [Recreational Vehicle Service Technicians](#)
 - 49-3093 [Tire Repairers and Changers](#)