1. Program or Unit Description

The Leeward Community College Automotive Technology Program is a 2-year National Institute for Automotive Service Excellence Education Foundation (ASEEF) Master Automobile Service Technology Accredited training program. The mission of the program is: (1) to prepare students with the skills and competencies necessary for a successful career as an automotive technician; (2) to instill in students the work habits and attitude to work in a highly competitive field; and (3) to provide the students with the basic skills necessary to become lifelong learners in order to keep abreast of the latest technological changes in the automotive field.

The target population is comprised of students who are working toward a career position as a technician in the automotive repair industry. However, our student population also consists of students interested in other career opportunities in the automotive industry such as parts counterpersons, service advisors and management.

2. Analysis of the Program/Unit

Demand Indicators: HEALTHY

Demand Indicators continue as Healthy.

The number of new and replacement positions for both State and County have seen a significant 17-19% reduction since 2018-19. The Covid pandemic, having restricted visitor travel to Hawaii, has caused significant loss of employment in the rental car businesses and their rental fleet maintenance shops. The “Stay at home, work from home” directive in the spring of 2020 had greatly reduced the number of cars on the road. Consequently, the need for vehicle repairs and maintenance had also plummeted and resulted in automotive repair businesses reducing their workforce or closing their doors, some permanently.

The number of majors has also decreased over the prior year (104 to 98), probably because of the significant number of student withdrawals (16) seen in 2019-20, also a consequence of the pandemic fear. This correlates to a reduction in the number of SSH Program hours noted on line 6. The more than 100% increase in Non-Major semester hours reflects on the need to do a better job of getting our students to declare AMT as their Major.

It’s noted that approximately 3 and 1 (Fall and Spring) Part-time students were taking courses from another System College, lines 3d and 3g. The number of full-time students has decreased for both Fall and Spring, lines 3 b/c and 3 e/f although the percentages are within the range of the prior two years.
Efficiency Indicators: HEALTHY

Efficiency Indicators continue as Healthy.

Average Class Size, Line 10 has been consistent at 13-14 which is quite outstanding considering the Program generally intakes 20 new students each semester. Still, the program continues to experience a steady intake of unprepared or otherwise challenged students. It is hoped that successes in the AMT100 Early College courses will result in better prepared students and also an increase in the number of students in our second, third and fourth semester courses, increasing our Average Class Size and Fill Rate resulting in the strengthening of the Efficiency Health score from 1.5 to 2.

Line 16, Low-enrolled Classes increased from 2 to 8. The culprit courses were the fourth semester courses of Fall 2020 and also the second year Ford ASSET courses which had experienced very high attrition. The ASSET cohort began in the Fall of 2019 with a very healthy enrollment of 18 students, but some were unfit for the Program and unemployable, some moved to the mainland, and one was to begin a family. The remaining 8 students all graduated from ASSET and two others completed their degrees in the traditional Program.

Ford has begun an additional partnership with the traditional AMT Program with the implementation of the Ford ACE Program. This partnership allows the traditional Program to utilize Ford training modules in the curriculum as homework or extra study. Students who pass these modules qualify for Ford training credits and a head start in their training requirements should they gain employment in a Ford dealership. These credits may also allow a student to join the Ford ASSET Program after the start of a cohort, helping to reduce the possibility of Low-Enrolled ASSET classes.

Effectiveness Indicators: HEALTHY

Effectiveness Indicators improved to Healthy

Line 17, Successful Completion at 88% remains consistent with previous years. The number of Withdrawals, Line 18 has expectantly decreased from 16 to 5 with students having time to adapt to life during the Covid pandemic and also the Program being allowed to conduct classes as usual in the face-to-face, in-person modality of instruction. Line 19, Fall to Spring Persistence has also been consistent with previous years at 75%, but a 12% increase in Degrees/Certificates Awarded, Line 20 from 51 to 57 has resulted in a health indicator improvement from Cautionary to Healthy.
Distance Indicators

There are some numbers in the Distance Indicators that were never present before and this is due to the modality “adjustment” the Ford ASSET AMT93D CoOp Education made to online meetings with the students. This course has returned to regular in-person meetings.

Perkins Indicators

Perkins Indicators criteria has changed. The Indicators now reflect employment and Degree/Certificate Credentials earned. Both Indicators far exceed goals and earned a grade of “Met”.

https://uhcc.hawaii.edu/varpd/

3. Program Student Learning Outcomes or Unit/Service Outcomes

a) List of the Program Student Learning Outcomes or Unit/Service Outcomes

PLOs:

1. Demonstrate the professional skills and knowledge required in the automotive industry.
2. Apply safety procedures required in shop practices.
3. Employ principles necessary for practical applications within the automotive industry.

b) Program or Unit/Service Outcomes that have been assessed in the year of this Annual Review.

As stated in prior years, the concepts of our SLOs and PLOs are constantly taught, monitored and assessed by our strict adherence to the standards of our ASEEF accreditation requirements. In addition to the numerous operational tasks that must be completed, the constant demonstration of professional soft skills by the students are also required and are critically monitored as part of grading requirements.

7 courses were assessed in 2020-21 with a 91.9% successful completion rate.
c) Assessment Results.

As we do not screen our program students prior to enrollment and some may lack sufficient preparation, maturity, aptitude and talent level required, 100 percent task completion will not be consistently attainable, however it will always be intended. Regarding the SLO and PLO soft skills, continuing students have been successful at adhering to the ASEEF guidelines.

The 2020-2021 courses assessed were:

- AMT145 – 88% of students successfully completed all SLOs
- AMT145 – 91% of students successfully completed all SLOs
- AMT152 – 93.3% of students successfully completed all SLOs
- AMT162 – 93.3% of students successfully completed all SLOs
- AMT164 – 90% of students successfully completed all SLOs
- AMT93D – 87.5% of students successfully completed all SLOs
- AMT241 – 100% of students successfully completed all SLOs

https://docs.google.com/document/d/18RWs4wxYEV--2nKdt8oZ6PkunaA_L15ttV2laCLi8ds/edit

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

No changes have been made or planned

4. Action Plan

From the 2020 ARPD:

*The Automotive Program will continue to seek improvements in student recruitment, facilities and equipment supporting high-quality education and training as stated in the College Mission and as required by our ASEEF accreditation.*

AMT has succeeded in acquiring new vehicle hoists replacing outdated equipment. The Program has also succeeded in acquiring 30 laptop computers into which scan tool and lab scope software has been installed. These are used by students in the lab and shop for service information research and vehicle diagnostics utilizing the associated scan tool and lab scope hardware. AMT also succeeded in gaining approval for the replacement of the very old brake lathes used in AMT152 and AMT162. However, funding for these were swept during the resource restrictions in the Spring 2020. Also needed is the replacement of the aging “powertrain lift” used by the AMT145, AMT149 and AMT245 courses.
Improvements in student recruitment were not possible due to Covid restrictions prohibiting campus visitations by interested schools, although some recruitment activities were accomplished virtually. The Early College partnership begun with James Campbell and Leilehua High Schools have not met expectations in regard to student enrollment. In Spring 2021, a total of 9 students were enrolled in the Early College AMT100 courses. Continuation in the Fall of 2021 was cancelled, however Early College will resume at Leilehua in the Spring 2022 with 9 students registered. Additionally, a new partnership with James B. Castle High School will begin also in the Spring of 2022 with at least 13 students registered. Hopefully, these students will attend Leeward AMT courses better prepared and able to fill seats in the second and third semester courses.

Regarding improvements to facilities, the previous ASEEF reaccreditation recommendations to emergency electrical shutoffs has been addressed. All modules now have electrical shutoff switches located in the shop areas instead of the lab storage rooms.

Recently, the Advisory Committee has commented that the AMT Program should expand their training in the area of High Voltage hybrid and electric vehicles. Although ASEEF requirements only focus on training, they stated a desire to see the program move to the future as they view EV and HEV as here to stay and the program needs to ready itself to begin further instruction in these vehicles. This initiative will require resources for both equipment and space, however, the AMT Program still awaits the promised Automotive Building Modernization project. No further progress has been announced regarding this much needed project, so any expansion of program capabilities must hold.

Also indicated during Advisory Committee discussions is the future need for a calibration system for the camera and radar safety systems (Advanced Driver Assistance Systems, ADAS) present on late model vehicles. These calibration systems are expensive and require shop areas dedicated to the installation of the targeting systems these calibrators require. However, current shop space is not available.
5. Resource Implications

Recurring health and safety concerns are:

The replacement of the aging and very noisy (90db in classroom) shop air compressor located adjacent to Module 4. The instructor and students have difficulty communicating in class whenever the compressor is running, and the high noise levels are a health concern. Vendor recommends that all air lines and plumbing be replaced also because of age related deterioration. Energy savings with compressors of modern, efficient technology and engineering will not be realized unless the air lines are replaced. Estimated cost of the compressor has increased to approximately $75,000. Cost of plumbing replacement is not determined as a structural engineer must be contracted just for assessment and estimate.

Additional shop air, water and electrical concerns are the retractable reels that spool air and water hoses and electrical extension cords from the ceilings of the shops and labs. All of these fixtures are original to the building, almost forty years old, and are not functioning properly. All either leak or do not hold position when hose or cord is extended necessitating the need to wrap or otherwise lock the hose or cord in something to hold it from retracting with the extended length becoming a trip hazard. Replacement of all shop and lab hose and electrical reels, 134 in total is approximately $30,000 for the reels alone. Labor can be done by our maintenance department with rented man-lift. Contractor installation has not been determined.

Another recurring health and safety concern is the replacement of the aging "powertrain lift" used for the removal and installation of engines and transmission as well as other large heavy vehicle components from under the vehicle. The current item is difficult to modulate when lowering components and often surges downward undesirably and dangerously. Careful manipulation of the control is necessary, but awkward and very difficult to accomplish. Furthermore, this unit has been repaired several times already and has neared the end of its expected serviceable life. It is shared by two Modules and so two replacement units will be required at a cost of approximately $16,000.

Instructional equipment resubmissions include:

The refunding for 5 AMMCO brake lathes previously approved and funded in 2019, but swept during the start of the pandemic in the Spring of 2020. Cost to purchase is approximately $90,000.
Also, the AMT 129 Engine Repair class currently performs cylinder bore machining operations with forty-year-old equipment. Modern engines require much more precision in this operation and can only be accomplished with newer designed, dedicated machinery as used in modern industry machine shops. Cost of a modern replacement is approximately $75,000.

New instructional equipment requests:

The acquisition of ADAS calibration equipment including targeting systems, tooling and associated computer ware as discussed for future need by the AMT Advisory Committee will cost approximately $40,000.

6. Optional: Edits to Occupation List for Instructional Programs

No changes to the SOC codes will be requested.