Honolulu Community College Mission Statement
- Serve the community as an affordable, flexible, learning-centered, open door comprehensive community college that meets the post-secondary educational needs of individuals, businesses, and the community.
- Serve the Pacific Region as the primary technical training center in areas such as transportation, information technology, education, communications, construction, and public and personal services.

Program Mission
The Automotive Technology program’s mission is to serve the community as a learner-centered, open-door program that provides technical training to meet the demands of the automotive industry and the needs of the individual. An open-exit option allows the students to identify their career objectives and participate in program exploration.

Program Description
The Automotive Technology (AMT) program at HCC is a comprehensive five-semester program master certified by the National Automotive Technology Education Foundation (NATEF) that prepares students for employment as automotive technicians. Students completing the program may earn a Certificate of Completion after one semester or an Associate in Applied Science degree upon program completion. The program has maintained its NATEF certification since 1993, undergoing a review every five years. It is certified in all eight ASE areas: engine repair, automatic transmission and transaxle, manual drive train and axles, suspension and steering, brakes, electrical/electronics systems, heating and air conditioning, and engine performance.

Program Goals
The competencies the student is expected to achieve in the program are based on the tasks described by NATEF. Students who successfully complete the program will be prepared with the skills and competencies necessary for a successful career in the automotive industry with emphasis on marketability by receiving training in all eight areas described by NATEF: engine repair, automatic transmission/transaxle, manual drive train and axles, suspension and steering, brakes, electrical/electronics systems, heating and air conditioning, and engine performance. The program is also structured for individuals exploring automotive as a potential career path, and allows individuals the opportunity to acquire knowledge in theory of operation and experience in vehicle repair for personal gain.
Program Student Learning Outcomes (SLOs)

- Upon completion of the program, students will be able to:
  - Gain employment in the automotive industry in any of the eight NATEF areas that the program is certified in. They include: engine repair, automatic transmission/transaxle, manual drive train and axles, suspension and steering, brakes, electrical/electronics systems, heating and air conditioning, and engine performance;
  - Increase their marketability through critical thinking skills, time management and teamwork.
  - Gain personal knowledge and technical experience in various types of vehicle repairs.

Part 1: Quantitative Indicators for Program Review

External Demand

Labor Market & Student Applications

Available data (produced by the Hawaii Department of Labor) predicts that employment in installation, maintenance, and repair operations will increase 11.7% (from 2390) in 2002 (to 2670) by 2012. This high demand for new technicians is the result of 30 average annual openings due to growth and 60 average annual openings due to separation for a total of 90 total average annual openings.

There were 13 new applicants to the Automotive Technology program in Fall 2004, and 4 new applicants to the program for the Spring 2005 Semester. Overall, among those Fall and Spring applicants, 82% appear to have been accepted by the college and admitted to the program, while 18% appear to have cancelled applications, or been redirected etc. Among those accepted and admitted, available data show that 10 students were enrolled in the same semester that they applied.

These new applicants along with continuing students combine to make up the enrollment with a 94% average fill rate to enter the program in the first semester courses.

Internal Demand

The data provided indicates that registration headcount of actively enrolled students in the Fall 2004 and Spring 2005 shows that the Automotive Technology Program carried 82 degrees in Fall 04 and 4 degrees in Spring 05 respectively in the AAS Degree program, of which 61 were enrolled in department classes in the Fall. (Data showing the number of students enrolled in department classes during Spring 05 was not available.)

Although the data that was provided to us indicate only 4 degrees registered in the spring, the department feels that this accounting may not be accurate or complete because our records indicate that a greater number matriculated.
through the program at that time (78 Fall or and 76 in the Spring 05). *Note: the department is not clear with the actual interpretation or accuracy of the data provided or how it was obtained. Resorting back to our resource, they too were unclear of its true meaning.*

Program major’s enrollment in department classes generated 690 student semester hours in Fall 2004 for an average of 11.31 semester hours. (Spring 05 data was not available) The resulting credit hours generated equate with 46 Full Time Equivalent (FTE) enrollments in Fall 2004. (Spring 2005 data not available)

There were also program non-majors enrolled in Department classes—26 and 86 respectively in Fall 2004 and Spring 2005—generating 302 and 926 student semester hours overall respectively. The data shows that these students are primarily from HCC’s AMT.

We see available data from Transportation and Trades, 290 (Fall 04) and 902 (Spring 05) are students for HCC AMT and 12 students (Fall 04) from UHManoa.

Enrollment by program majors and non-majors accounted for the 992 SSH and 996 SSH generated by the department subject code(s) AMT 20,30,40,42,43,46,50,53,55,67 in Fall 2004 and Spring 2005 respectively.

Overall, students under our program major enrolled for totals of 870 student semester hours in Fall 2004, and 35 in Spring 2005. As mentioned above, they generated 690 SSH in Fall 2004. (Spring 2005 was not available)

Then, augmenting coursework within the department, 26 Program Majors were enrolled in a total of 180 student semester hours of coursework in other departments in the Fall 2004, while 4 enrolled for 35 student semester hours outside the department in the Spring 2005 semester.

We see from additional data that program major’s coursework outside the department was primarily in the subject areas of ENG, ICS, and MATH with 8, 9, and 14 of our program majors enrolling for 24, 30 and 39 student semester hours respectively in Fall 2004.

In Spring 2005, major’s coursework outside the department was again primarily in the PHYS, PSY, and WELD subject areas, with 2, 2, and 2 students enrolled for 8, 6, and 5 student semester hours respectively.

Our sense from comparing major’s average credit hours within department classes 11.31 and 12 average SSH and outside the department 6.9 and 8.8 average SSH is that students are progressing toward their AAS degree that is reflected in the number of students taking coursework outside the department and is in direct alignment with the program’s goals.
Internal Efficiencies
Scheduling and Instructional Faculty

With 4.27 Full Time Equivalent (FTE) faculty in Fall 2004, and 4.27 in Spring 2005—the department offered 11 active class sections in Fall and 11 in Spring. Average Class Size in Fall 2004 was 17.3 and the Class Fill Rate was 73% For Spring 2005, Average Class Size was 16.7—with a Class Fill Rate of 61.4%. These numbers are satisfactory and considered normal due to anticipated attrition. Anticipated attrition is defined as students who exit the program for reasons other than failing. They include: having satisfied their educational objectives up to that point, completing a specific course(s) that they were interested in or having become satisfied with exploring the AMT program and determining that it is not necessary for them to continue on.

The department utilized 3.5 and 4 Full Time Equivalent (FTE) BOR approved faculty in Fall 2004 and Spring 2005 respectively. There were an additional .8 Full Time Equivalent (FTE) Part Time Lecturers teaching in Fall 2004, and .3 for Spring 2005.

Overall In Fall 2004, Full Time BOR approved faculty delivered 81.8%, taught 81.25% course credit hours, and were associated with generating 79.4% student credit hours within the department. In Fall 2004, Part Time Instructors delivered 18.2%, taught 18.75% course credit hours, and were responsible for 20.6% generated student credit hours within the department.

In Spring 2005, Full Time BOR approved faculty delivered 90.9%, taught 93.8% course credit hours, and were associated with generating 94% student credit hours within the department. Part Time Instructors in Spring 2005 delivered 9.1%, taught 6.2% course credit hours, and were responsible for 6% generated student credit hours within the department.

Based on student credit hours generated and course credit hours taught, the ratio of full time student equivalents (FTSE) to full time faculty equivalents (FTFE) was 15.5 FTSE/FTFE in Fall 2004, and 14.47 FTSE/FTFE in Spring 2005. The ratio of program majors to FTE faculty was 19.2 and .9 respectively in Fall 2004 and Spring 2005. The data provided for Spring 05 does not seem accurate. Our records indicate that the ratio of program majors to FTE faculty for Spring 05 higher than indicated (.9). Although some of the data is not clear and needs clarification, our overall sense of departmental operating efficiencies (considering these data) is that the program is meeting its educational goals as outlined by NATEF. The program is considering measures in assisting students needing additional help in completing difficult NATEF tasks but has not finalized any details at this time. Again, the department is not clear with the actual interpretation or accuracy of the data provided or how it was obtained. Resorting back to our resource, they too were unclear of its true meaning.
Instructional Outcomes

As reflected in available data for the 04/05 academic year, the department awarded 21 AAS degrees. Additionally, data on student grade distribution within the department subject code indicate that of all grades awarded in Fall 2004, 22.8% A, 41.3% B, 22.8% C, 0% D, 0% F. Grades awarded in Spring 2005, 33.5% A, 35.2% B, 19.2% C, 0% D, 0.5% F.

Student Persistence within the subject code AMT from Fall 2004 to Spring 2005 was 3.7%; persistence of majors in the same period (whether enrolled in department courses or not) Again, the department is not clear with the actual interpretation or accuracy of the data provided or how it was obtained. Resorting back to our resource, they too were unclear of its true meaning.

Review of department major’s performance on the Perkins Core Indicators indicates the program is fulfilling the primary goals of those enrolled because 100% of the students gain training in accordance to NATEF standards. This, in turn, allows all of the students in the AMT program to receive experience in the automotive industry by being employed prior to graduation through Cooperative Education. Upon graduation, 94% are employed in the automotive industry, with 100% maintaining employment in the industry 6 months after graduation.

Overall

Department demand for the 04/05 academic year was calculated at 4.3, which translates to a healthy (above satisfactory) demand status.

Department efficiency for the 04/05 academic year was calculated at 70.2, which translates to a cautionary (above minimum) efficiency status.

Department Outcome for the 04/05 academic year was calculated at 45.8%, which translates to a healthy (above satisfactory) outcome status.

- Given consideration of these demand, efficiency, and outcomes indicator data together, our sense of overall program health is that we are a healthy program.

Even though we have a healthy program, the department does feel that the data is not a true indicator of the program health. Because we have an open door policy that allows any students that meet the program academic pre-requisites to enter the AMT program, some students decide to enter the workforce full time once they received enough training in a specific area. Others find that although they initially thought AMT was their career objective, their personal goals change and decide to exit the program before completing core requirements for a Certificate or AAS degree. Therefore, although enrollment of majors in the program is consistently high, students that actually apply for and receive a Certificate or AAS degree are consistently low.
Outcomes

Attainment of student goals
Data extrapolated from the HCC New Student Survey shows the primary goal of 60 percent of the students that enroll in AMT is to gain employment/advancement in the automotive industry. In addition, 40 percent of those enrolled indicated that they wanted to obtain knowledge in a specific area. Therefore, the number of degrees is not really a good indicator of the health of the program. A better indication is based on how many AMT students gain employment/advancement in the automotive industry.

Persistence of majors (Fall to Spring)
The department feels this data provided seems may be incomplete and is not a true indicator of our continuing students. *Again, the department is not clear with the actual interpretation or accuracy of the data provided or how it was obtained. Resorting back to our resource, they too were unclear of its true meaning.*

Graduation rate
Data provided for graduation rate shows that 55.88% received a Certificate or Degrees, which is above the core standard of 36%. And 93.75% of those graduates were employed in the automotive industry with 100% continuing employment 6 months after graduation.

Transfer rate
No data available

Success at another UH campus (based on GPA)
12 UHManoa, Transportation and Trades (Minimal data available)

Licensure information where applicable
No supporting data available. While in attendance, our students are encouraged to take ASE exam after completing each course in the program. One requirement necessary before applying to take the ASE exam is a minimum of 2 years work experience in the automotive field. However, ASE will allow NATEF students to take the exam and hold their certification until work experienced is obtained (Passing test grades only). At which time they can convert their test certification into a State repair license.

Perkins Core Indicators for CTE programs
Data provided for Perkins Core Indicators show an increase in all of the program’s actual performance in the areas of vocational skills. Completers’ employment and retention indicates a healthy program. Note: The department does not have control over the success rate in areas such as academic support courses and non-traditional student enrollment, which are below the core standards.
Determination of program’s health based on outcomes (Healthy, Cautionary, Unhealthy)

The AMT Program is very healthy based on evidence from the enrollment data, Perkins core indicators, graduation and employment rate and the NATEF certification.

Part II: Assessment Results for Program SLOs

Students successfully completing each course will satisfy the SLO’s set by the program in accordance to the National Automotive Technicians Educational Foundation. Students who complete the NATEF performance tasks will be able to work independently and inter-dependently in an automotive repair facility; function safely in an automotive environment; communicate effectively to gather and convey industry related information; and operate automotive equipment and specialty tools properly.

The theoretical portion is evaluated is measured through an ASE-type test for each course or module (see ASE explanation below). Each instructor obtains ASE-type test questions from a question database.

ASE: Automotive Service Excellence (ASE) is a non-profit organization for the nations automotive industry and was established in 1972. ASE’s mission is to improve the quality of vehicle repair and service through the testing and certification of repair and service professionals.

ASE has years of experience helping the automotive industry verify the skills and knowledge of the technicians working at dealerships, independent repair shops, collision shops, franchises, fleets, and more. Car owners and the service and repair industry regard ASE certification as the standard measure of competency and a guide to quality auto repairs.

At present, about 420,000 professionals hold current certifications. They work in every segment of the automotive service industry: car and truck dealerships, independent garages, fleets, service stations, franchises, and more.

The practical portion of evaluation is accomplished by assessing lab activities associated to each task outlined by NATEF. Our program measured each student’s competency by utilizing all 450 NATEF tasks and not just the minimum amount required.

The automotive faculty has produced a checklist manual that we call the “Student Passport” and every student gets the appropriate passport at the beginning of each AMT course. This “passport” reflects the same information about the task (and the student’s ability to perform that task) that the instructor has on record and becomes the property of the student after completing the course. Students
have found this passport to be a great tool (evidence of their abilities) when applying for an automotive position.

Part III: Curriculum Revision

Being a nationally certified program, we are required to upgrade our curriculum material approximately every 3 years. Constant change in the automotive industry often requires revisions to be implemented within our program’s course content. Typically these changes include: new performance task listings, change in task priority value (priority number) or complete revisions of task description or language. Also, our course textbooks must be replaced every 6 years with those approved by NATEF.

Part IV: Analysis of data

Alignment with Program Mission
The automotive program is aligned with college and campus missions by serving the community as a learner centered, open-door program, which provides technician training that meets the demand of the automotive industry. The program maintains a partnership with the industry and provides the local automotive community with job placement. Students are guaranteed the opportunity for employment within the industry. We presently have 100% employment for students prior to graduating through the Cooperative Education Program.

Individual student needs are also meet by providing an open exit point that allow students to earn a Certificate of Completion after successfully completing the first semester courses. Students may also participate in the program as an exploration to identify their career objectives and gain personal knowledge and experiences.

Strengths and weaknesses based on analysis of data

Strengths
The program continues to maintain certification with the National Automotive Technicians Education Foundation (NATEF) since 1993 delivering instructions and task objectives.

AMT program is certified in 8 different NATEF areas. (Engine repair, automatic transmission and transaxle, manual drive train and axles, suspension and steering, brakes, electrical/electronics systems, heating and air conditioning, and engine performance.)

HCC’s automotive program is a unique five (5)-semester program that allow us to administer every task listed by NATEF and performs all 450 Priority Tasks (100%) which, our advisory committee members has supported. (A program is
required to perform 95% of priority 1 (P1) task, 80% of priority 2 task (P2) and 50% of priority 3 tasks).

The program has received excellent (positive) comments about our students from the local industry brought forth to us by our advisory committee member. (Advisory meetings are held twice annually)

The overall program has an 87.2 percent program success rate at 70 percent competency level or higher with 100 percent employment in the automotive industry prior to graduation. Upon graduation 94 percent of AMT graduates are employed in the automotive industry, and 100 percent maintain employment in the automotive industry 6 months after graduation.

Enrollment data supports a strong program demand with Fall 04 enrollment at 210 and Spring 05 enrollment at 227.

Program’s open door policy allows students to identify their learning objective and determine if the automotive career path is what they wish to pursue.

Weakness
Financial costs of new equipment, equipment maintenance, training aids or mock-ups, tools, shop materials and continuous instructor training are serious concerns to properly train students in accordance with NATEF. Obtaining adequate funding assures that the program does not jeopardize its certification standing.

There is a constant concern as to how instructors can find a way to leave their course during the semester (1 day –2 weeks) in order to obtain up-dated training when it becomes available. NATEF as well as other program affiliation (Chrysler, Toyota and Delco to name a few) all require the school/program keep its instructors at the cutting edge of technology in the areas they teach. It is very difficult to find a substitute who has the knowledge (and is willing to teach) and can leave their full-time employment (short term) to assist in this area. Again, this is another area that could result in jeopardizing our NATEF standing.

Insufficient computer labs to meet student demands that are required to efficiently perform NATEF tasks.

Classrooms need to be modernized. Multi-media, Internet functioning classrooms are the norm.

Network accessible computers in the shop/lab areas with wired or wireless capability.

Student attrition rate needs to be addressed without affecting the quality of instructions or its NATEF standings.
Evidence of Quality
Our evidence of quality is following the standards set by (NATEF) and making sure that the students can perform these tasks at an acceptable level.

The program is recertified every 5 years and must perform a mid-point review every 2.5 years to display currency. (Program has been certified since 1993)

The program utilizes the student’s passport to identify the level of skill and the competence for each NATEF task.

Each course utilizes test questions similar to that used by the industry (ASE) to certify its technicians for professional-level knowledge. 100 percent of our students are employed in the automotive industry prior to graduation, 94 percent are employed upon graduation and 100 percent remain employed 6 months after graduation.

Evidence of Student Learning
Every AMT course administers an entrance and exit exam that is used with the intention of measuring a student’s knowledge of a subject area before and after completing a course.

The AMT program utilizes two unique methods to determine the student’s ability to have learned a specific topic. The theoretical portion is measured using specific module exams and quizzes that simulate the Automotive Service Excellent (ASE) certification test used by the industry. The practical portion uses the “Student Passport” and measures each student’s ability in performing a specific (NATEF) task.

94% of our students enter the workforce at graduation and 100% remain employed 6 months after graduation.

Resource sufficiency
Resources are not sufficient. The program is approximately 15% under budget in keeping this program certified and teaching at the cutting edge of technology. Areas of concern include:

- Inadequate method of instructor substitution in order to obtain updated technical training that is required by NATEF and Daimler/Chrysler. Updated training is essential to provide students the latest in technology and a direct resource to their education. The insufficiency in access to training due to scheduling conflict during class directly affects the education students receive.
- Insufficient amount of properly operating equipment due to excessive inventory of broken/aging and outdated equipment that has not been repaired or replaced. The lack of properly operating equipment does not promote student learning.
- Insufficient amount of computer stations available to meet student demands to gather information in order to perform NATEF tasks.
- Insufficient amount of electronic information program subscriptions in All Data and Mitchell-On-Demand to serve our students. Manufacturers are turning to online electronic information and printed manuals will no longer be available. Program subscriptions must be purchased in order to maintain currency with the industry.
- Insufficient amount of classrooms set up with a complete multimedia system. Instructors are forced to use old methods to deliver information and only students in one of the six classrooms receive the full resources that are available with the multimedia system.

**Recommendations for improving outcomes**

A fulltime instructor position is required (tenure position) to assist with attrition issues.

Obtain an instructor to become a “floater” within the department allowing the course instructors to upgrade their training qualifications and satisfying certification requirements from organizations like: NATEF, CAP (Chrysler Apprentice Program), T-TEP (Toyota Technical Educational Program) and others potential partnerships (Mercedes, Honda, Mazda, etc) who are interested in working with Honolulu Community College’s AMT program.

Larger operating budget to tools, equipment, instructor training, lab and classroom updates.

Need to relocate improperly positioned vehicle hoists and address student attrition rate and retention.

**Part V: Action plan**

Replace retired tenure track instructor (not new position) for student attrition and instructor training issues.

Obtain funding to update and replace aging/broken equipment.

Obtain additional computers and set up a wireless network in the shop area and increase program subscriptions.

Set up remaining classrooms with a complete multimedia system.

Relocate two vehicle hoists that are not being used efficiently.

Create an AMT Certificate of Achievement.
Justification

The additional instructor is needed in order to meet NATEF standards for the midpoint compliance and re-certification. The program must provide an adequate method of substitution for current instructors to attend technical training classes, update curriculum and materials or as relief in case of an emergency or leave of absence. Instructor will also provide tutoring to students requiring extra assistance to improve student retention and serve to support the increased demands for the Auto Academy.

The upkeep and update of equipment and programs are needed to meet NATEF standards for the mid point compliance and re-certification. It is also essential in order to promote student learning. Continued deterioration and breakdown of aging equipment without any new replacement or updated equipment will jeopardize the program NATEF certification and the quality of the program.

5 computer stations are insufficient to provide adequate service to our 80+ students. Increased P-1 NATEF tasks in all AMT courses require students to research vehicle information, but they are not able to work efficiently as they wait for an open computer. Extra computers in each shop area will alleviate the congestion at the computer room, simulate on job training and increase student productivity.

Only 1 of our 6 classrooms is set up with a complete multimedia system containing an overhead projector. Instructors developing PowerPoint/multimedia presentations cannot provide the same quality of delivery during instruction. Instructors occupying other classrooms without the multimedia system are currently using alternative methods of presentation with cables running along the floor that pose a safety issue.

Poor planning in having two of the vehicle hoists installed next to a wall makes it inefficient in its accessibility. Valuable shop space is lost in order to have a lane clear to gain access to the hoist. Vehicles or workbenches cannot occupy this lane while vehicles use these hoists.

Create a Certificate of Achievement for students that have successfully completed specific courses that provides them entry-level skills or job upgrading in the automotive industry. It also fulfills individual career goals and allows an early exit point.

Part VI: Budget Implications

Not attaining the appropriate budget is critical and could possibly result in the termination of our NATEF certification or any agreement within its affiliations. Several manufacturers, within the automotive industry, will often only affiliate themselves with a NATEF certified program (tax purposes). Donations of vehicles, manuals, tools and specialized equipment along with current technical training (held at our school) would all be in serious jeopardy.