

# **HAWAI'I COMMUNITY COLLEGE PROGRAM ANNUAL REVIEW REPORT**

## **Automotive Mechanics Technology (AMT)**

**November 13, 2015**

**Review Period  
July 1, 2014 to June 30, 2015**

**Initiator: Joel Tanabe**

**Writer(s): Harold Fujii, Kenneth Shimizu, and Jeff Fujii**

*Program/Unit Review at Hawai'i Community College is a shared governance responsibility related to strategic planning and quality assurance. Annual and 3-year Comprehensive Reviews are important planning tools for the College's budget process. This ongoing systematic assessment process supports achievement of Program/Unit Outcomes. Evaluated through a college-wide procedure, all completed Program/Unit Reviews are available to the College and community at large to enhance communication and public accountability. Please see <http://hawaii.hawaii.edu/program-unit-review/>*

## Program Description

**Please provide a brief description of your Program. Include your Program Mission statement.**

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This program prepares the student for employment as a general mechanic in a service station or auto dealer's shop, or as a specialty mechanic or a specialist on engine tune ups or electrical systems.

This program has been in existence since 1941 servicing our community's needs in the transportation trades. Graduates have been placed in every facet of the automotive industry and even outside of the industry. They have found careers in the private sector as well as government agencies. Many have since become employers/managers as they now own and operate businesses of their own which creates an excellent career networking system. Some have ventured to the mainland as well as internationally in Japan, Europe and China.

### Part I. Review of Program Data

**Go to the Annual Reports for Program Data (ARPD) website linked below and review the data for your program.**

<http://www.hawaii.edu/offices/cc/arpd/>

### Part II. Analysis of the Program

**Based on the ARPD data in Part 1, analyze the Program in terms of Demand, Efficiency, and Effectiveness. Include significant Program actions (e.g., new certificates, stop out, gain/loss of positions) and results of prior year's action plan. Include analysis of any Perkins Core Indicator(s) for which the Program's goal was not met. Also discuss any trends or other factors (internal/external) affecting the Program and analyze other Program changes or information not included elsewhere.**

Based on the Program Quantitative Indicators, the AMT program has an overall program health call of Cautionary. Of the three indicators, only the Demand Indicator was deemed Unhealthy. Both the Efficiency Indicators and Effectiveness Indicators were given a Healthy health call.

After careful review, we have determine that the data used in the rubric to determine the Demand Health Call is flawed. The numerator in the formula, New & Replacement Positions (County Prorated), is based off of the wrong CIP code. The CIP code has been changed from 47.0604 (Automobile/Automotive Mechanics Technology/Technician), to 47.0617 (High Performance and Custom Engine Technician/Mechanic) for the 2014-2015 data. If this numbers was to be corrected, the outcome of the formula for the Demand Health Call would probably be higher, giving the program a Healthy call.

There were three Perkins IV Core Indicators not met during 2013-2014. They were 4P1, 5P1, and 5P2. We believe 4P1 was met, but many of the student placements were outside of the job code used to determine this data. As mentioned above, we are currently in the process of tracking our graduates work placement and current employment. We will be using this data to confirm our job placement next year. Meeting 5P1 and 5P2 has always been a challenge. We have been and are currently emphasizing the recruitment of non-traditional students. We participate in Keaau Middle School's and Kamehameha School's career days every year. We also have non-traditional students, in our program, volunteer to talk with students visiting our

Hawaii CC Day booth/display. We will continue to look for opportunities to recruit non-traditional students to our program.

### **Part III. Action Plan**

**Describe in detail the Program's overall action plan for the current/next academic year. Discuss how these actions support the College's Mission and can lead to improvement(s) in student learning. Include specific action plans to address any ARPD Health Call scores of "Cautionary" or "Unhealthy," and any Perkin's Core Indicator(s) for which the Program's Goal was not met.**

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We are planning to block (collapse 14 courses into 5) our courses for the 2016-17 school year. We also plan to and to broaden our course topics. The main reasons for the proposed changes is to allow for flexibility. The instructors will have the flexibility to adjust the course to the students. In general, every class has different strengths and weaknesses. The blocking of courses will allow instructors to tailor the courses according. Rather than "leaving" a student behind due to a set schedule, instructors can spend more time on what challenges students and not on concepts they comprehend. Also by blocking we will have less redundant CLOs to assess. Assessment will still be, if not more, effective due to the fact that more time can be spent reviewing assessment data rather than collecting them. In turn, student will learn from the most effective teaching methods.

The automotive industry is constantly moving forward, the technology is always changing. By allowing the courses to be a little broader we to allow for some flexibility which will allow for changes in the automotive industry. The instructors will be able to react instantly to changes and recommendations by their advisory committee. This quick reaction time allows students to learn what the industry/employers want, making them more employable.

### **Part IV. Resource Implications**

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**Please provide a brief statement about any implications of current operating resources for the Program. Budget asks are included in the 3-year Comprehensive Review, except for the following that may be included here: health and safety needs, emergency needs, and/or necessary needs to become compliant with Federal/State laws/regulations. Describe the needed item(s) in detail, including cost(s) and timeline(s). Explain how the item(s) aligns with one or more of the Strategic Initiatives of the Hawai'i Community College 2015-2021 Strategic Plan. Identify and discuss how the item(s) aligns with the Initiative's Goal, Action Strategy, and Tactic. [HAWCC Strategic Plan](#)**

AMT's alignment rack just went out. We did have a technician inspect it and was given a verbal quote of \$1,000.00. We are waiting for a formal quote for repairs. The alignment rack it a key component in AMT 55 which is completed this semester. This aligns with HGI Action Strategy 3: Anticipate and align curricula with community and workforce needs (Follow up with graduates and employers regarding Hawai'i CC students' preparation for the workforce and community). This course is needed for preparation for the workforce as per Hawaii CC AMT Advisory Council.

## **Part V. Comprehensive Review Information**

**Please provide a short summary regarding the last comprehensive review for this program. Discuss any significant changes to the Program since the last comprehensive review that are not discussed elsewhere.**

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The most significant change to the program since the last comprehensive review was the hiring of an Educational Specialist (APT). He has taken a large load off of us by running errands, maintaining equipment, assisting in lab, and taking care of a lot of paperwork.

**Required for ARPD Web Submission: Provide the URL to the specific location of this Unit's last Comprehensive Review on the HawCC Program/Unit Review website (see link on page 1):**

**[http://hawaii.hawaii.edu/program-unit-review/docs/2012-2013\\_amt\\_comprehensive\\_program\\_review.pdf](http://hawaii.hawaii.edu/program-unit-review/docs/2012-2013_amt_comprehensive_program_review.pdf)**

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## **Part VI. Program Student Learning Outcomes**

**For all parts of this section, please provide information based on the PLOs (P-SLOs) that were assessed through PLO-aligned course assessments in AY 2014-15.**

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### **A) Evidence of Industry Validation (CTE Programs)**

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**[General Pre-Professional Programs can skip industry validation.]**

**Provide documentation that the program has submitted evidence and achieved certification or accreditation from an organization granting certification in an industry or profession. If the program/degree/certificate does not have a certifying body, you may submit evidence of the program's advisory committee's/board's recommendations for, approval of, and/or participation in assessment(s).**

## **Automotive Mechanics and Technology**

**February 19, 2015, 4:00 p.m.**

### **Minutes**

**Present:** Wesley Ferreira      Mark Nishioka      Ken Shimizu

Excused

Stacy Akao, Jeffrey Quebral

**Call to Order** – Harold Fujii called the meeting to order at 4:04 p.m.

## **Assessment**

### **Results of program and course assessment**

- Students are grasping the ideas taught in the AMT program/courses

### **Review PLOs and SLOs**

- PLOs meets the industry needs for entry-level employment
- SLOs meets the industry needs for entry-level employment

## **Review of courses and curriculum**

### **Program CIP code**

- 47.0604 is correct
- Skills the graduates learn in this program qualify them for positions outside of this CIP code also

### **Plans for updates, new direction**

- Looking into blocking courses

### **Industry Feedback**

- Agree with blocking courses
- The majority of related courses AMT majors must take is not necessary to work in the industry
- Related courses should be applied courses (related to the students major)
- QM 197 is perfect! All related courses should be like QM 197 (applied courses is most useful in this industry)
- Be more hands-on then based on written test
- Tests do not determine if someone is “smart”

## **Industry Report**

### **Trends**

- Recommend to look into “green” technology, initial buy in is a little higher but in the long run it may lower costs and is better for the environment (Jeff will look into updating shop to become “green”)
- Watch Hybrid/Electric vehicles, it is upcoming technology but it is not a big trend in our community

- Make sure the school keeps up with the times by keep up the equipment (Jeff will look into current and future industry trends – SEMA Show is a good place to start).

### **Employment forecast**

- Future is looking good, demand for entry level auto mechanics will continue to grow
- Five year forecast is strong, new car sales is up which means more jobs

Meeting adjourned at 5:30 p.m.

### **B) Expected Level of Achievement**

**For each Course assessed in AY 2014-15: Discuss the rubric(s) standards and the benchmark goal(s) for student success (e.g., “85% of students will achieve Excellent or Good ratings in the assessed activity” or “90% of students will score Meets or Exceeds Standards on the assessment rubric”).**

70% Proficient was the goal for the students in all assessments. The following is the scoring rubric used.

#### **Scoring Rubric:**

<69%	Not Proficient
70%-79%	Developing Proficiency
80%>	Proficient

### **C) Courses Assessed**

**List all Program Courses assessed during AY 2014-15. Also list Program Courses for which a follow-up “Closing the Loop” assessment was implemented in AY 2014-15.**

<b>Assessed Course Alpha, No., &amp; Title</b>	<b>Semester assessed</b>	<b>PLO-aligned CLOs that were assessed</b>
AMT 20 Intro to Auto	Fall 2014	CLO2
AMT 23 Lubrication	Fall 2014	CLO1
AMT 30 Engines	Fall 2014	CLO4
AMT 50 Auto Transmission	Fall 2014	CLO2
AMT 53 Brake Systems	Fall 2014	CLO2
AMT 55 Steering and Suspension	Fall 2014	CLO3
AMT 40B Fuel System	Fall 2014	CLO2
AMT 46 Power Train	Spring 2015	CLO2
AMT 57 Emissions	Spring	CLO1

	2015	
AMT 40C Electrical System	Spring 2015	CLO4
AMT 60I Diagnostic and Repair: Engines and Related Components	Spring 2015	CLO1, CLO2
AMT 60J Diagnostic and Repair: Suspension/Brake and Related Components	Spring 2015	CLO5
AMT 60K Diagnostic and Repair: Power Train/Transmissions and Related Components	Spring 2015	CLO6
<b>“Closing the Loop” Assessments Alpha, No., &amp; Title</b>	<b>Semester assessed</b>	<b>PLO-aligned CLOs that were assessed</b>
AMT 20 Intro to Auto	Fall 2014	CLO2
AMT 23 Lubrication	Fall 2014	CLO1
AMT 30 Engines	Fall 2014	CLO4
AMT 50 Auto Transmission	Fall 2014	CLO2
AMT 53 Brake Systems	Fall 2014	CLO2
AMT 55 Steering and Suspension	Fall 2014	CLO3
AMT 40B Fuel System	Fall 2014	CLO2
AMT 46 Power Train	Spring 2015	CLO2
AMT 57 Emissions	Spring 2015	CLO1
AMT 40C Electrical System	Spring 2015	CLO4
AMT 60I Diagnostic and Repair: Engines and Related Components	Spring 2015	CLO1, CLO2
AMT 60J Diagnostic and Repair: Suspension/Brake and Related Components	Spring 2015	CLO5
AMT 60K Diagnostic and Repair: Power Train/Transmissions and Related Components	Spring 2015	CLO6

#### D) Assessment Strategy/Instrument

For each Course assessed in AY 2014-15, provide a brief description of the assessment strategy, including the type of student work or activity assessed how and when the assessment was conducted, how and why assessed artefacts were selected, and how the artefacts were analyzed.

AMT 20 Intro to Auto	The written test was based on the CLO assessed and reviewed by the Advisory Council. The assessment
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	was conducted at the end of the semester by our Educational Specialist. The results were reviewed by both instructors and the Educational Specialist using the scoring rubric.
AMT 23 Lubrication	The written test was based on the CLO assessed and reviewed by the Advisory Council. The assessment was conducted at the end of the semester by our Educational Specialist. The results were reviewed by both instructors and the Educational Specialist using the scoring rubric.
AMT 30 Engines	The written test was based on the CLO assessed and reviewed by the Advisory Council. The assessment was conducted at the end of the semester by our Educational Specialist. The results were reviewed by both instructors and the Educational Specialist using the scoring rubric.
AMT 50 Auto Transmission	The written test was based on the CLO assessed and reviewed by the Advisory Council. The assessment was conducted at the end of the semester by our Educational Specialist. The results were reviewed by both instructors and the Educational Specialist using the scoring rubric.
AMT 53 Brake Systems	The written test was based on the CLO assessed and reviewed by the Advisory Council. The assessment was conducted at the end of the semester by our Educational Specialist. The results were reviewed by both instructors and the Educational Specialist using the scoring rubric.
AMT 55 Steering and Suspension	The written test was based on the CLO assessed and reviewed by the Advisory Council. The assessment was conducted at the end of the semester by our Educational Specialist. The results were reviewed by both instructors and the Educational Specialist using the scoring rubric.
AMT 40B Fuel System	The written test was based on the CLO assessed and reviewed by the Advisory Council. The assessment was conducted at the end of the semester by our Educational Specialist. The results were reviewed by both instructors and the Educational Specialist using the scoring rubric.
AMT 46 Power Train	The written test was based on the CLO assessed and



	reviewed by the Advisory Council. The assessment was conducted at the end of the semester by our Educational Specialist. The results were reviewed by both instructors and the Educational Specialist using the scoring rubric.
AMT 57 Emissions	The written test was based on the CLO assessed and reviewed by the Advisory Council. The assessment was conducted at the end of the semester by our Educational Specialist. The results were reviewed by both instructors and the Educational Specialist using the scoring rubric.
AMT 40C Electrical System	The written test was based on the CLO assessed and reviewed by the Advisory Council. The assessment was conducted at the end of the semester by our Educational Specialist. The results were reviewed by both instructors and the Educational Specialist using the scoring rubric.
AMT 60I Diagnostic and Repair: Engines and Related Components	The performance rubric was based on the CLO(s) assessed and reviewed by the Advisory Council. The assessment was conducted during the last two months of the semester by our Educational Specialist. The results were reviewed by both instructors and the Educational Specialist using the scoring rubric.
AMT 60J Diagnostic and Repair: Suspension/Brake and Related Components	The performance rubric was based on the CLO(s) assessed and reviewed by the Advisory Council. The assessment was conducted during the last two months of the semester by our Educational Specialist. The results were reviewed by both instructors and the Educational Specialist using the scoring rubric.
AMT 60K Diagnostic and Repair: Power Train/Transmissions and Related Components	The performance rubric was based on the CLO(s) assessed and reviewed by the Advisory Council. The assessment was conducted during the last two months of the semester by our Educational Specialist. The results were reviewed by both instructors and the Educational Specialist using the scoring rubric.

## E) Results of Program Assessment

For each Course assessed in AY 2014-15, provide a summative description of the assessment results.

Discuss how these results collectively demonstrate achievement of the Program's Learning Outcomes and support the College's Mission.

AMT 20 Intro to Auto	<p>Upon completing the assessment of AMT 20's Course Learning Outcome number 2 (Entry level career opportunities), the students show that they have a great understanding of what entry level career opportunities there are and what duties are performed at that level.</p> <p>We set a minimum goal of 70% of the students at Developing Proficiency and we assessed at 98.5% Proficient. We have found that students grasp the concepts and understand the materials being covered in this curriculum.</p> <p>Students understand what career opportunities entry level mechanics/technicians have, the duties they would perform, and the skill level they need to have.</p>
AMT 23 Lubrication	<p>Upon completing the assessment of AMT 23's Course Learning Outcome number 1 (Student shall correctly select proper lubricant for vehicle component), the students show that they have a great understanding of what type of lubricants different components use.</p> <p>We set a minimum goal of 70% of the students at Developing Proficiency and we assessed at 98% Proficient. We have found that students grasp the concepts and understand the materials being covered in this curriculum.</p> <p>Students understand which lubricants are used in different components.</p>
AMT 30 Engines	<p>Upon completing the assessment of AMT 30's Course Learning Outcome number 4 (Correctly identify all parts of the above assemblies and their operation), the students show that they have a great understanding of the different engine parts and their function.</p> <p>We set a minimum goal of 70% of the students at Developing Proficiency and we assessed at 100%</p>

	<p>Proficient. We have found that students grasp the concepts and understand the materials being covered in this curriculum.</p> <p>Students understand what the different engine parts are and the function(s) they perform.</p>
AMT 50 Auto Transmission	<p>Upon completing the assessment of AMT 50's Course Learning Outcome number 2 (Correctly identify parts and components of the transmission), the students show that they have a great understanding of the different transmission parts.</p> <p>We set a minimum goal of 70% of the students at Developing Proficiency and we assessed at 100% Proficient. We have found that students grasp the concepts and understand the materials being covered in this curriculum.</p> <p>Students understand what the different parts in a transmission are.</p>
AMT 53 Brake Systems	<p>Upon completing the assessment of AMT 50's Course Learning Outcome number 2 (Correctly identify parts and components of the hydraulic brake system), the students show that they have a great understanding of the different hydraulic brake system parts.</p> <p>We set a minimum goal of 70% of the students at Developing Proficiency and we assessed at 100% Proficient. We have found that students grasp the concepts and understand the materials being covered in this curriculum.</p> <p>Students understand what the different parts in a hydraulic brake system are.</p>
AMT 55 Steering and Suspension	<p>Upon completing the assessment of AMT 55's Course Learning Outcome number 3 (Correctly identify all components of the automobile suspension and steering systems), the students show that they have a great understanding of the different components in the suspension and steering systems.</p> <p>We set a minimum goal of 70% of the students at Developing Proficiency and we assessed at 99.5% Proficient. We have found that students grasp the concepts and understand the materials being covered in this curriculum.</p> <p>Students understand the different components of the</p>

	steering and suspension systems.
AMT 40B Fuel System	<p>Upon completing the assessment of AMT 40B's Course Learning Outcome number 2 (Differentiate difference between safe and unsafe working conditions while working on fuel systems), the students show that they have a great understanding of what safe and unsafe working conditions are. We set a minimum goal of 70% of the students at Developing Proficiency and we assessed at 98.75% Proficient. We have found that students grasp the concepts and understand the materials being covered in this curriculum.</p> <p>Students can differentiate between safe and unsafe working conditions while working on fuel systems.</p>
AMT 46 Power Train	<p>Upon completing the assessment of AMT 46's Course Learning Outcome number 2 (Correctly identify all components), the students show that they have a great understanding power train components. We set a minimum goal of 70% of the students at Developing Proficiency and we assessed at 100% Proficient. We have found that students grasp the concepts and understand the materials being covered in this curriculum.</p> <p>Students understand the different components of the power train.</p>
AMT 57 Emissions	<p>Upon completing the assessment of AMT 57's Course Learning Outcome number 1 (Select proper tools and equipment for pin pointing defects and failures), the students show that they have a great understanding of selecting the proper tools and equipment for pin pointing defects and failures of the emission systems. We set a minimum goal of 70% of the students at Developing Proficiency and we assessed at 98% Proficient. We have found that students grasp the concepts and understand the materials being covered in this curriculum.</p> <p>Students understand how to select proper tools and equipment to pin point defects and failures in emission systems.</p>
AMT 40C Electrical System	<p>Upon completing the assessment of AMT 40C's Course Learning Outcome number 4 (Correctly</p>

	<p>describe theory of operation of components and systems), the students show that they have a great understanding of basic electrical theory of operation of components and systems.</p> <p>We set a minimum goal of 70% of the students at Developing Proficiency and we assessed at 98.75% Proficient. We have found that students grasp the concepts and understand the materials being covered in this curriculum.</p> <p>Students understand the basic theory of operation of electrical systems.</p>
AMT 60I Diagnostic and Repair: Engines and Related Components	<p>Upon completing the assessment of AMT 60I's Course Learning Outcome number 1 and 2 (CLO1 - Perform work safely, confidently, and neatly. CLO2 – Demonstrate safe working habits while working on automotive systems), the students show that they have a great understanding and apply safe working habits.</p> <p>We set a minimum goal of 70% of the students at Developing Proficiency and we assessed at 100% Proficient. We have found that students not only grasp the concept of safety, but they understand and apply safe working habits when working on engines and related components.</p> <p>Students understand and apply safe working habits when working on engines and related components.</p>
AMT 60J Diagnostic and Repair: Suspension/Brake and Related Components	<p>Upon completing the assessment of AMT 60J's Course Learning Outcome number 5 (Correctly identify all parts of the automotive assemblies and their operation), the students show that they have a great understanding of suspension/brake components and how they operate.</p> <p>We set a minimum goal of 70% of the students at Developing Proficiency and we assessed at 100% Proficient. We have found that students grasp the concepts and understand the materials being covered in this curriculum.</p> <p>Students were able to correctly identify all suspension/brake components and list their function.</p>
AMT 60K Diagnostic and Repair: Power Train/Transmissions and Related Components	<p>Upon completing the assessment of AMT 60K's Course Learning Outcome number 6 (Correctly use</p>

	<p>online manuals and information), the students show that they have a great understanding on inputting and retrieving online information.</p> <p>We set a minimum goal of 70% of the students at Developing Proficiency and we assessed at 98.69% Proficient. We have found that students grasp the concepts and understand the materials being covered in this curriculum.</p> <p>Students were able to correctly input and retrieve online information.</p>
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F) Other Comments

Include any additional information that will help clarify the assessment results. Include comparisons to any applicable College or Program standards, or to any national standards from industry, professional organizations, or accrediting associations. Include, if relevant, a summary of student survey results, CCSSE, e-CAFE, graduate-leaver surveys, special studies, or other assessment instruments used.

G) Next Steps

Based on the Program’s overall AY 2014-15 assessment results, describe the Program’s intended next steps to enhance instruction in order to improve student learning. Instructional changes may include, for example, revision to curriculum, teaching methods, learning outcome statements, student support, and other options. Please note here if proposed changes will involve Program and/or Course modifications requiring approval.

The Program’s next step is to implement the blocking of the courses. The assessment of the current courses are too labor intensive, wasting time on redundant CLOs. We are not performing assessments during AY 2015-16 to concentrate on the blocking of the courses. Once blocking is completed, more thorough assessments can be and will be completed.

Part VII. Cost Per SSH

Please provide the following values used to determine the total fund amount and the cost per SSH for your program:

General Funds = \$183,925  
Federal Funds = \$ 11,081

Other Funds = \$ 0  
Tuition and Fees = \$ 50,727

### Part VIII. External Data

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If your program utilizes external licensures, enter:

Number sitting for an exam       

Number passed       

[If your program does not utilize external licensures, skip Part IX.]