

**HAWAI‘I COMMUNITY COLLEGE
PROGRAM COMPREHENSIVE 3-YEAR REVIEW
REPORT**

**Diesel Mechanics
(DIMC)**

Date November 16th, 2015

Review Period

July 1, 2012 to June 30, 2015

AY 2012-13, AY 2013-14, and AY2014-15

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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/>

PART I: ANALYSIS OF PROGRAM

This review may not have been written in the optimal form, but it does include all the relevant information required. We are aware of this and we will continue to strive to perfect it. (See Part II: Action Plan)

This program prepares the student for employment as a skilled tradesperson who troubleshoots, maintains, and repairs various types of diesel engines, trucks, tractors, boats, and other heavy equipment.

Opportunity for employment maybe in construction, Department of Transportation, marine, power generation, farming, quarry, agriculture, or transit.

Diesel service technicians and mechanics typically do the following:

- *Follow a checklist of inspection procedures*
- *Test drive vehicles to diagnose malfunctions*
- *Read and interpret diagnostic test results, often by using dials, gauges, and other computer equipment*
- *Raise trucks, buses, and heavy parts or equipment by using hydraulic jacks or hoists*
- *Inspect brake systems, steering mechanisms, transmissions, engines, and other parts of vehicles*
- *Do routine maintenance, such as changing oil, checking batteries, and lubricating equipment and parts*
- *Adjust and align wheels, tighten bolts and screws, and attach system components*
- *Repair or replace malfunctioning components, parts, and other mechanical or electrical equipment*
- *Disassemble and reassemble equipment and parts*
- *Test drive vehicles to ensure that they run smoothly*

The diesel mechanics program accepts students from all segments of our community that meet the Community College's open door policies. The program offers two degrees to graduates, the Certificate of Achievement and the Associate of Applied Science.

- **ARPD indicators:**

EFFICIENCY, DEMAND, and EFFECTIVENESS INDICATORS 2013-2015

The overall health of the program from 2013-2015 has been cautionary. Of the three indicators, the program consistently received a healthy call for the efficiency indicator. We have received an unhealthy call for the demand indicator and cautionary for the effectiveness indicator.

EFFICIENCY

The efficiency indicator has been healthy for the last three years and our enrollment is 100%, except for the semester that we did not take in new students because of the change in curriculum in order to modify the program. In order to remain healthy for this indicator, we plan to continue to stay in touch with students on the wait list and encourage new students to apply to the program even if their courses would not start immediately.

DEMAND

For the demand indicator, the data over the past three years, the data was consistent and there was not much change. The data showed that there were only four new and replacement positions in the county. We are currently in the process of tracking our graduates work placement and current employment and will have the data ready next year to show that there are more employment opportunities in the county overall than the ARPD data shows, which will give the program a more true number and a better Health Call.

EFFECTIVENESS

Although the effectiveness indicator has always been cautionary, the Persistence Fall to Spring has increased from 56.5 % (unhealthy) to 85.7 % (healthy) over the past three years. The cautionary call comes from an unhealthy rating based on the percentage of unduplicated degrees and certificates awarded to the number of

majors. In 2013 there was a “stop out” of courses so that the program could run consistently for two years without having both first year and second year students. This skewed the data by not having a graduating class every year because in the 2015 year there were zero unduplicated degrees/certificates awarded. If we had used the data for the smallest graduating class instead of zero, the effectiveness indicator health call would have been deemed healthy.

PERKINS INDICATORS 2013-2015

The main Perkins indicators we had trouble meeting over the past three years were 3P1, 4P1, 5P1 and 5P2.

The 3P1 Perkins indicator was not met in 2013 and 2015, but was met in 2014. The program is concerned that the economy was a factor in the 2013 and 2015 years, and believes that the reasons of not meeting this indicator were due to personal challenges of the students and not due to the program or college. The 3P1 Perkins indicator was met in 2014, we will continue to stay culturally sensitive to the diverse educational needs of our students as well as their socio-economic back grounds, in order to ensure that the 3P1 Perkins indicator continues to be met.

We believe that 4P1 was met but many of the student placements were outside of the job code used to determine this data. As mentioned, 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 for this program. The Diesel Program presently and currently attends Hawaii Community College Career Day. In order to address this challenge, we will continue to attend HCC career days in order to try to recruit non-traditional students. With the help of our recent female Casual Hire, we can focus on connecting with potential non-traditional students by attending various career days in the community and contacting various outreach programs.

- **College Mission:** *By providing a learning environment that promotes student learning, inspires growth, and embraces our island culture and local community.*

The mission of the Diesel mechanics Program (DISL) promotes the Hawaii Community College mission in many ways. The unique learning environment that

our students work in, allows hands-on learning and physical interaction with machinery and tools valuable to their trade as well as the classroom lectures and note taking that are crucial in preparing them for technician service reports and diagnostic communication with fellow co-workers and/or customers. Our mission is for the students to graduate with the skills necessary to carry out these tasks in order to perform in their trade at the highest level possible.

In becoming a valued trade’s person with these skills, some of the employment needs of our growing community are met. Hawaii’s population has increased over the last three years, and continues to do so, and the need for postsecondary education and training is high. Our students, upon graduation, will meet the industry’s requirements for employment and thus be able to enter the work force.

Institutional Learning Outcomes (ILOs):

1. ILO

Our graduates have been taught to effectively communicate technical information and diagnostic skills under a variety of situations.

2. ILO

Our graduates have been taught to gather, evaluate, troubleshoot, and repair problems they may face in a variety of technical challenging situation.

3. ILO

Our graduates possess the required knowledge and technical skills that are required of them to be a productive technician within our community that respects diversity and Hawaiian culture.

- **Assessment results:**

DIMC 20 assessment (Fall 2014) utilized a performance rubric to establish proficiency ratings. The performance results assessed Course Learning Outcome number 1, 2, 3, and 4. Twenty students were given a diesel engine to overhaul. 75% Developing Proficient was the goal for the students.

Scoring Rubric:

Competency	Proficient	Developing Proficiency	Not Proficient
Preparedness (includes appropriate)	Always in proper attire and ready to start immediately	In proper attire and ready to start most of the time	Inconsistently or seldom in proper attire and ready to start

dress) (CLO 1)			
Response to supervision and communication (CLO 1)	Is willing to learn and accept feedback and constructive criticism, eagerly follows through; listens to others, asks questions or makes appropriate suggestions	Most of the time is willing to accept feedback and constructive criticism, follows through; listens to others, asks questions or makes appropriate suggestions most of the time.	Demonstrates unwillingness to learn and accept feedback. Does not interact with the instructor in a positive way.
Attitude, teamwork, and cultural sensitivity (CLO 1)	Is positive, even-tempered, eager to work, doesn't complain Demonstrates respect for classmates, and works collaboratively with others	Most of the time is positive, even-tempered, eager to work, and usually doesn't complain. Most of the time demonstrates respect for classmates and usually works collaboratively with others.	Displays moodiness or a negative attitude. Reluctant to take part in activities. Has a negative attitude toward some or all of classmates. Does not function effectively in a team.
Attention to Task (CLO 1)	Can stay on task for the entire class with minimal supervision, is self-motivated	Most of the time stays on task for the entire class with minimal supervision and is usually self-motivated.	Needs to be reminded constantly to stay on task, is not self-motivated
Quality of Work (CLO 1, 2, 3, 4)	Makes few mistakes, independently able to spot and correct	Makes few mistakes, needs help spotting errors.	Displays inconsistent quality; rarely spots errors

Results:

Competency	Proficient	Developing Proficiency	Not Proficient
Preparedness (includes appropriate dress)	20	0	0
Response to supervision and communication	20	0	0

Attitude, teamwork, and cultural sensitivity	19 (95%)	1 (5%)	0
Attention to Task	20	0	0
Quality of Work	19 (95%)	1 (5%)	0

Total Average Score		Rating	
Goal	Actual	Goal	Actual
≥75%	98%	Developing Proficiency	Proficient

Evaluation:

The students were assessed at 95% proficient. Only one student was rated at developing proficiency on two of the competencies. If two or more students were rated at developing proficiency or lower on the same competency, we would need to perform a deeper evaluation.

Conclusion:

Upon completing the assessment of DIMC 20, the students show that they have a great understanding of basic diesel engine components/operation and have the ability to work safely.

Strengths:

Students understand basic diesel engine components/operation and have the ability to work safely.

Weaknesses:

No weaknesses were found during the assessment of DIMC 20.

Evidence of Industry Validation:

The assessment plan was validated by the Diesel Mechanics Program's Advisory Council. Since the heavy equipment and truck Industry is constantly evolving, we rely heavily on our Advisory Council to keep us up to date on what skill level an entry level mechanic/technician needs to be at.

Action Plan:

No Action Plan is necessary at this time for DIMC 20 due the high level of proficiency the students were assessed.

Budget Request:

No budget request is needed at this time due to no changes/no action plan is necessary at this time.

Comments:

Since the students were assessed at such a high level, no Action Plan is needed at this time. Although no changes are being recommended/implemented at this time, the course is constantly assessed for relevancy by our Advisory Council and updated as needed.

DIMC 30 assessment (Spring 2015) utilized a performance rubric to establish proficiency ratings. The performance results assessed Course Learning Outcome number 1, 2, 3, 4, and 5. Twenty students were given a diesel engine starter to diagnose and repair. 75% Developing Proficient was the goal for the students.

Scoring Rubric:

Competency	Proficient	Developing Proficiency	Not Proficient
Preparedness (includes appropriate dress) (CLO 1)	Always in proper attire and ready to start immediately	In proper attire and ready to start most of the time	Inconsistently or seldom in proper attire and ready to start
Response to supervision and communication (CLO 1)	Is willing to learn and accept feedback and constructive criticism, eagerly follows through; listens to others, asks questions or makes appropriate suggestions	Most of the time is willing to accept feedback and constructive criticism, follows through; listens to others, asks questions or makes appropriate suggestions most of the time.	Demonstrates unwillingness to learn and accept feedback. Does not interact with the instructor in a positive way.
Attitude, teamwork, and cultural sensitivity (CLO 1, 5)	Is positive, even-tempered, eager to work, doesn't complain Demonstrates respect for classmates, and works collaboratively with others	Most of the time is positive, even-tempered, eager to work, and usually doesn't complain. Most of the time demonstrates respect for classmates and usually works collaboratively with others.	Displays moodiness or a negative attitude. Reluctant to take part in activities. Has a negative attitude toward some or all of classmates. Does not function effectively in a team.

Attention to Task (CLO 1)	Can stay on task for the entire class with minimal supervision, is self-motivated	Most of the time stays on task for the entire class with minimal supervision and is usually self-motivated.	Needs to be reminded constantly to stay on task, is not self-motivated
Quality of Work (CLO 1, 2, 3, 4, 5)	Makes few mistakes, independently able to spot and correct	Makes few mistakes, needs help spotting errors.	Displays inconsistent quality; rarely spots errors

Results:

Competency	Proficient	Developing Proficiency	Not Proficient
Preparedness (includes appropriate dress)	20	0	0
Response to supervision and communication	20	0	0
Attitude, teamwork, and cultural sensitivity	19 (95%)	1 (5%)	0
Attention to Task	20	0	0
Quality of Work	19 (95%)	1 (5%)	0

Total Average Score		Rating	
Goal	Actual	Goal	Actual
≥75%	98%	Developing Proficiency	Proficient

Evaluation:

The students were assessed at 95% proficient. Only one student was rated at developing proficiency on two of the competencies. If two or more students were rated at developing proficiency or lower on the same competency, we would need to perform a deeper evaluation.

Conclusion:

Upon completing the assessment of DIMC 30, the students show that they have a great understanding of basic diesel electrical systems and have the ability to work safely.

Strengths:

Students understand basic diesel engine electrical system and components/operation and have the ability to work safely.

Weaknesses

No weaknesses were found during the assessment of DIMC 30.

Evidence of Industry Validation

The assessment plan was validated by the Diesel Mechanics Program's Advisory Council. Since the heavy equipment and truck Industry is constantly evolving, we rely heavily on our Advisory Council to keep us up to date on what skill level an entry level mechanic/technician needs.

- **CERC comments and feedback**

The last Comprehensive Report was not done in 2013 due to the modification of the program which assisted in the quality of the courses, and the graduation rate of our students. Unfortunately, 2008 CERC comments are also unavailable on-line or in hard copy form. Therefore there are no CERC comments available at this time.

- A challenge that we have faced is filing and maintaining records of assessment and program review documentation. It is a challenge because the program has only one faculty member. We hope to remedy this by filling the APT position that has been approved.

PART II: Action Plan:

A major goal we are planning to accomplish is filling the APT position. With this position filled, we will have the manpower to assist in the paperwork side of instruction. The APT will assist in all aspects of the assessment process from communicating with the advisory council to collecting and filing data. This will help to assess deeper so we can create more effective action plans to improve the learning environment that promotes student learning,

inspires growth, and embraces our island culture and local community student learning. The APT will also assist in writing Annual and Comprehensive Program Reviews. This aligns with HGI Action Strategy 2 & 3.

Other action plans:

- continue the high quality of the program HGI Action Strategy 2
- track graduate placement and employment - HGI Action Strategy 3, tactic 2
- continue to check in with Advisory Council – HGI Action Strategy 2

PART III: Budget Items

Electronic Controlled Diesel Engine

Cost : \$30,000

Item description: A computer controlled heavy duty Diesel engine that meets current emission standards set by the Federal Government. Currently this program does not have an equivalent engine.

Time line: ASAP *we currently cover this engine in lecture but do not have any hands on equipment. Our Advisory Council highly recommends training on this piece of equipment.

Technology is always moving forward heavy diesel engines are going to computer controlled due to emission regulations. Graduating students need to learn on current standards to be employed in the local work force. **This is aligned with HGI Action Strategy 3.**

Environmental Parts Washer

Cost: \$15,000

Item description: This is an automated parts washer that uses environmentally friendly solvent.

Time line: ASAP

The parts washer that we are looking to purchase will allow the students to spend less time on washing and cleaning parts and more time on curriculum to promote assistance in attaining a degree. **This will align to HGI Action Strategy 2.**