

HAWAI`I COMMUNITY COLLEGE COMPREHENSIVE INSTRUCTIONAL PROGRAM REVIEW REPORT

Diesel Mechanics

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July 1, 2008 to June 30, 2013

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Program/Unit Review at Hawai'i Community College is a shared governance responsibility related to strategic planning and quality assurance. It is an important planning tool for the college budget process. Achievement of Program/Unit Outcomes is embedded in this ongoing systematic assessment. Reviewed by a college-wide process, the Program/Unit Reviews are available to the college and community at large to enhance communication and public accountability.

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Part I: Annual Program Reviews

Populate the following spreadsheet with data from Program's ARPD for the past five (5) years.

	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013
Overall Program Health	Cautionary	Cautionary	Cautionary	Cautionary	Cautionary
Demand Indicators					
Demand Health Call	Unhealthy	Unhealthy	Unhealthy	Unhealthy	Unhealthy
Number of Majors	25	28	25	31	37
SSH in All Program Classes	480	415	456	437	432
Efficiency Indicators					
Efficiency Health Call	Healthy	Healthy	Healthy	Healthy	Healthy
Average Class Size	20	16	18	17	17
Fill Rate	100	99	100	100	100
Number of Low-Enrolled (<10) Classes	0	0	0	0	0
Effectiveness Indicators					
Effectiveness Health Call	Cautionary	Cautionary	Cautionary	Healthy	Cautionary
Successful Completion (Equivalent C or Higher)	98	95	95	91	94
Withdrawals (Grade = W)	0	1	0	7	0
Persistence (Fall to Spring)	79	72	70	75	56
Unduplicated Degrees/Certificates Awarded	10	11	4	8	4
Transfers to UH 4-yr	0	0	0	0	1
Distance Education: Completely On-Line Classes					
Number of DE Classes Taught	0	0	0	0	0
Enrollment DE Classes	0	0	0	0	0
Fill Rate	0	0	0	0	0
Successful Completion (Equivalent C or Higher)	0	0	0	0	0
Withdrawals (Grade = W)	0	0	0	0	0
	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012
Perkins IV Core Indicators Met or Not Met					
1P1 Technical Skills Attainment	Not Met	Met	Not Met	Not Met	Not Met
2P1 Completion	Met	Met	Met	Met	Met
3P1 Student Retention or Transfer	Met	Met	Met	Met	Not Met
4P1 Student Placement	Met	Met	Met	Not Met	Not Met
5P1 Nontraditional Participation	Not Met	Not Met	Not Met	Not Met	Not Met
5P2 Nontraditional Completion	Not Met	Not Met	Not Met	Not Met	Not Met

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Part II: Program Effectiveness

Alignment with College Mission and ILOs

In Table 1, write a brief narrative describing this program and how it supports the College's mission and Institutional Learning Outcomes (ILOs).

Reference the following CERC rubric when completing Table 1:

Criteria	1=Does Not Meet	2=Meets	3=Exceeds
The narrative states the program's mission statement and/or description and how it supports the college's mission statement	Program mission or description is not present <u>or</u> no evidence of connection to the College's mission	Program mission and description are present but weak or unclear <u>and/or</u> the explanation of program connection to the College's mission is weak	Program mission is present with very thorough, clear program description <u>and</u> contains substantial evidence of how the program connects to the College's mission
The narrative includes an explanation of how the program supports the College's Institutional Learning Outcomes (ILOs)	ILOs are addressed but explanations are not clear and/or no clear explanation of how the program supports the ILO(s)	Describes how the program supports the ILO(s) but the description is weak	Very thorough, clear and substantial explanation of how the program supports the ILO(s)

Table 1: Description and Alignment with Mission and ILOs

College's mission:

Hawai'i Community College (Hawai'iCC) promotes student learning by embracing our unique Hawai'i Island culture and inspiring growth in the spirit of "E`Imi Pono." Aligned with the UH Community Colleges system's mission, we are committed to serving all segments of our Hawai'i Island community.

Program Mission:

The Diesel Mechanics Program's mission is to prepare students to be valued trades people who have the knowledge and skills necessary to effectively troubleshoot, maintain, and/or repair diesel engines, trucks, tractors, boats, and/or other heavy equipment, and upon graduation, meet the industry's entry level requirements of employment.

Program Description (Use the official description from catalog then give more in depth explanation of what this program does, who it serves and generally describe its accomplishments)

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*

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- *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, Certificate of Achievement and Associate of Applied Science.

The DIMC Program's has initiated a new compressed curriculum combining existing modules to form larger units of study. This direction will hopefully improve current student interest and entice new students who are seeking a career or looking to upgrade skills in the work place.

Describe how this program supports the College's mission.

By providing a learning environment that promotes student learning, inspires growth, and embraces our island culture and local community.

Describe how this program supports the College's Institutional Learning Outcomes below.

ILO 1: Our graduates will be able to communicate effectively in a variety of situations.

Describe how this Program supports this ILO:

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

ILO 2: Our graduates will be able to gather, evaluate and analyze ideas and information to use in overcoming challenges, solving problems and making decisions.

Describe how this Program supports this ILO:

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Our graduates have been taught to gather, evaluate, troubleshoot, and repair problem they may face, in a variety of technical challenging situations. Making correct decision on repair procedures.

ILO 3: Our graduates will develop the knowledge, skills and values to make contributions to our community in a manner that respects diversity and Hawaiian culture.

Describe how this Program supports this ILO:

Our graduates have been taught to gather, evaluate, troubleshoot, and repair problem they may face, in a variety of technical challenging situations. Making correct decision on repair procedures.

Previous Goals

In Table 2, list this program's top 3 goals from the last Comprehensive Review period. Give a progress report for each goal and describe the degree to which the goal was achieved over the review period.

Reference the following CERC rubric when completing Table 2:

Criteria	1=Does Not Meet	2=Meets	3=Exceeds
Goal description and progress report	Goals are not present <u>and/or</u> the progress reports are unclear or unsupported by evidence	Adequate description of each goal and report	Very thorough description of each goal and the report provides substantial evidence of achieving the goal or clear explanation why goal is not achieved

Table 2: Progress Report of Previous Goals

Goals	Progress Evaluation
10.1 We will continue to promote Caterpillar/Hawthorne student scholarship awards at the high schools and new and returning students to the diesel program.	We will continue to have a strong relationship with these companies.
10.3 Donation of diesel engines and other training and related materials.	We will continue to have a strong working relationship with this local Caterpillar company to support the program. The program has received two engines and other training materials that is currently being used in the curriculum.
10.6 & 10.7 Updated student learning outcomes and develop assessment for the course.	We have modified all of the diesel mechanic courses from 28 different modules to 6 course modules. Student learning outcomes, course objectives, course topics, and assessments has been modified to meet the new course modifications.

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Strengths and Weaknesses

In Table 3, briefly describe this program's top 3 strengths and 3 weaknesses. Provide an explanation and supporting evidence for each strength and weakness (e.g. assessment results, data elements from ARPD, surveys, etc.)

Reference the following CERC rubric when completing the Strengths section in Table 3:

Criteria	1=Does Not Meet	2=Meets	3=Exceeds
Description of strengths and evaluation of supporting evidence	Does not include clear description of strength and/or explanation of supporting evidence is weak or unclear	Includes adequate description of strength and supporting evidence	Very thorough description of strength and substantial evidence in support of strength

Table 3: Analysis of Strengths and Weaknesses

Strengths	Using supporting evidence, describe why this is a strength
DIMC program class size has continued to be at a full capacity rate.	The diesel mechanics field has grown in the industry and students are showing more interest toward this trade.
The number of native Hawaiians enrolled in this program is higher than the past two years.	Results from instructional annual report of program data line 3a.
The student completion rate.	Results from instructional annual report of program data line 17 shows 94%.

Reference the following CERC rubric when completing the Weaknesses section in Table 3:

Criteria	1=Does Not Meet	2=Meets	3=Exceeds
Description of weaknesses and explanation of supporting evidence	Does not include clear description of weakness and/or explanation of supporting evidence is weak or unclear	Includes adequate description of weakness and supporting evidence	Very thorough description of weakness and substantial evidence in support of weakness

Weaknesses	Using supporting evidence, describe why this is a Weakness
Updating current diesel engines to electronically controlled diesel engine for the DIMC 20 courses.	Advisory council members recommend that electronically controlled diesel engine be part of the curriculum, more of the engines in the industry are electronically controlled engines.
Storage racking for DIMC shop.	Heavy duty C-Channel structural racking to help store training materials to allow more space on the shop floor for students to perform practical projects and complete rubric assignments. Due to shop floor limitation and student safety reason the system safety officer recommends that

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	program training materials be stored on pallet rack systems to allow for more safe and efficient floor accessibility.
Environmental parts washer.	Environmental parts washer to help reduce the use of harmful solvent and chemicals for safe cleaning of heavy duty equipment parts, student health and the environment.

Program Learning Outcome Assessment

Provide a summary of the assessments conducted during the reporting period. For each Program Learning Outcome, describe the assessment methods, the data gathered, describe any changes or improvements made based on assessments, and describe the results of making the changes (closing the loop).

Reference the following CERC rubric when completing the assessment summary in Table 4:

Criteria	0=Does Not Meet	2=Meets
Program Learning Outcomes assessed	Does not include a complete list of the PLOs assessed during the reporting period	Includes a complete list of the PLOs assessed during the reporting period.
Evidence of industry validation	Does not include a report of industry and/or advisory council participation in assessment	Includes a report of industry and/or advisory council participation in assessment
Results of assessment and any changes made	Does not include a summary of the assessment results	Includes a summary of the assessment results and changes made
Evaluation of the changes that were implemented	Does not include the action plans/changes implemented to courses and the program during the reporting period or provides no evaluation of the changes	Includes the action plans/changes implemented to courses and the program during the reporting period and provides an evaluation of how the changes affected the courses and the program

Part V: Program Student Learning Outcomes

List the Program Learning Outcomes and check mark those assessed for this reporting period.

	Check mark if Assessed this year	Program Student Learning Outcomes
1	<input checked="" type="checkbox"/>	Function safely in a heavy equipment shop environment. Note more info on attachment.
2	<input checked="" type="checkbox"/>	Demonstrate ability to communicate effectively to gather and convey information.
3	<input checked="" type="checkbox"/>	Apply theory and principles for proper diagnosis, repair, and maintenance in the heavy duty truck equipment industry.
4	<input checked="" type="checkbox"/>	Practice the minimum essential mental, physical, and behavioral skills necessary to maintain professional proficiency.
5	<input checked="" type="checkbox"/>	Work collaboratively with others as well as independently.

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6	<input type="checkbox"/>	
7	<input type="checkbox"/>	
8	<input type="checkbox"/>	
9	<input type="checkbox"/>	
10	<input type="checkbox"/>	

Table 4: Program Learning Outcome Assessment Summary

Evidence of Industry Validation for CTE Programs – Describe achieved certification or accreditation from granting organization, i.e. Re-accredited by ACF, June 30, 2013 for five years. If the program/degree/certificate does not have a certifying body, the recommendations for, approval of, and/or participation in, assessment by the program’s advisory council can be described. i.e. 9/27/2013 Minutes of ACC Advisory Council; Rubrics completed by Advisory Council Members, fall 2012, PLOs 1,2,3

The diesel mechanics program has an advisory member council committee team comprised of the program faculty; members of the community employed in the heavy duty equipment and trucking industry and, when possible, graduates of the program. The advisory team meets annually.

Course(s) Assessed – List the course(s) (Alpha/#) assessed during this reporting period.

Student activities were observed and evaluated for the Fall 2012 and Spring 2013 courses.

Fall 2012:

DiMc 20 Intro to Diesel Engines

DiMc 21 Engine Operating Principles

DiMc 22 Cylinder Blocks & Heads

DiMc 23 Crankshaft & Bearings

DiMc 24 Camshaft, Gear Train, & Timing

DiMc 25 Piston & Connecting Rod Assemblies

Spring 2013:

DiMc 30 Intro to Electrical Systems

DiMc 31 Starting Systems & Circuits

DiMc 32 Charging Systems & Circuits

DiMc 33 Intro to Fuel Systems

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DiMc 34 Caterpillar Fuel Systems

DiMc 35 Detroit Fuel Systems

DiMc 36 Cummins Fuel Systems

DiMc 37 Stanadyne Fuel Systems

DiMc 38 Bosch-CAV

Results of Assessments – Provide a summary of assessment results.

At the end of the semester, the student scores were entered into a spreadsheet (one each for the Fall and Spring semesters). For each semester, the spreadsheet calculated the student totals, averages and produced graphs that provide a comparison between the evaluation criteria and the semesters.

It was expected that, as a group, students would achieve an average at least 80% in all the evaluation criteria. This is the evaluation percentage for the assessment performed in fall 2012 - 91.4% score.

This is the evaluation percentage for the assessment performed in spring 2013 - 84.2% score. The two scores represent those overall assessments percentage were above average.

Changes that were implemented as a result of Assessment

One thought that emerged from the discussion was that the skill performance data could be compared against student performance in a project. Over time, the instructional methods could be modified to address the skill criteria that are in need of attention. Improvements in the scores could then be compared against improvement in project performance.

The evaluation team agreed that the skill performance rubric is returning meaningful information and needs no modification at this time.

Evaluation of the changes that were implemented

The process is on going.

Trends and Other Factors

Describe trends noted over the review period, including comparisons to any applicable standards, such as college, program, or national standards from accrediting associations, etc. Include, if relevant, a summary of Satisfaction Survey Results, special studies and/or instruments used, e.g.,

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CCSSE, etc. Describe any external factors affecting this program or additional program changes not included elsewhere.

The department of transportation and national trend has been shifted toward certification. The program encourages students to attempt the exam(s) but it is not a requirement of the program. Students will have to pay for exam registration as well for each exam. There are 8 basic areas of examination. Many employers offer incentive bonuses for passing exams. In that sense, it is not lucrative to have passed exams before employment. The program provides practice exams before graduation so that students will be familiar with testing format.

Part III: Goals and Program Improvement

Goals and Planning

In Table 5, list the top 3 goals for program success planned for implementation during the next Comprehensive Review period. Identify and briefly explain how these goals align to the College's ILOs, Strategic Plan, Academic Master Plan (AMP), and UH System collaboration (if applicable).

Refer to the following CERC rubric when completing Table 5:

Criteria	1=Does Not Meet	2=Meets	3=Exceeds
Each goal is stated, aligned with ILOs and planning, and describes innovations to improve student learning. A calendar of activities provides a timetable for implementing the goal	A goal or goals are not present, or not aligned with ILOs and various plans, or does not describe program improvements and/or no calendar of activities is present	Goals are adequately stated, aligned with ILOs and various plans and describe improvements to the program and a calendar of activities provides a timetable for implementing the goal	Goals are thoroughly detailed, provide strong evidence of ILO and various plans alignment, program improvements are thoroughly articulated and a calendar of activities provides a timetable for implementing the goal

Table 5: Goals and Alignment

Goal 1	ILO Alignment (select up to 3)	Strategic Plan Alignment (select best alignment; max 3)	Academic Master Plan Alignment (select best alignment; max 3)	UH System Collaboration
			Program Action from AMP (ie 4.3) or write "New Strategy"	
Environmental parts washer. These are	ILO 3	B.2	c.	
	ILO 2	C.1	a.	

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some of the training aide systems used for teaching and demonstration. Bendix brake board, differential assembly, and International electronically control diesel engine.	ILO 2	B.2	c.		
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[Link to Hawaii Community College Institutional Learning Outcomes](#)

[Link to Hawai'i Community College Strategic Plan](#)

[Link to Hawaii Community College Academic Master Plan](#)

Narrative of New Strategy for Strategic Plan:

Environmental parts washer will be an effective cost efficient addition to the program. This will eliminate toxic chemicals that students will be exposed to, and environmentally friendly.

Narrative of New Strategy for Academic Master Plan

	STEM	Graduation Remediation Workforce	Student Transfer	Underserved Populations	Green Curricula	Program Development
10.7 Updated student learning outcomes and develop assessment for the course.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Briefly explain how **Goal 1** aligns to the College's ILOs, Strategic Plan, Academic Master Plan (AMP), and UH System collaboration (if applicable):

The program will introduce the new technology parts washer for student lab activities. Environmental concerns and regulations have encouraged the innovation of natural, non-chemically based solvents to clean parts.
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Calendar of planned activities for **Goal 1** – In chronological order, briefly describe the procedures/activities planned to achieve **Goal 1**

Activity	When will the activity take place
Example: Nursery design development Shade replacement Irrigation design and installation	September 2014 Fall 2014 Spring 2015
Introduce the new technology parts washer to advisory members.	Fall 2014

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Goal 2	ILO Alignment (select up to 3)	Strategic Plan Alignment (select best alignment; max 3)		Academic Master Plan Alignment (select best alignment; max 3)	UH System Collaboration
			Action Strategy	Program Action from AMP (ie 4.3)	
Update current diesel engines (mechanical) to electronically controlled diesel engines. Some of these engines have been here for the past 25 years.	ILO 2	B.2	c.		
	None	None	None		
	None	None	None		

Narrative of New Strategy for Strategic Plan:

The new electronically controlled diesel engine will be introduced into the program during lecture and lab activities. This will enhance the program and prepare students for industry expectation.

Narrative of New Strategy for Academic Master Plan

	STEM	Graduation Remediation Workforce	Student Transfer	Underserved Populations	Green Curricula	Program Development
10.3 Updating diesel engines and other training and related materials.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Briefly explain how **Goal 2** aligns to the College's ILOs, Strategic Plan, Academic Master Plan (AMP), and UH System collaboration (if applicable):

We will align with ILO 2, strategic plan B.2, and AMP priorities 10.6 & 10.7.

Calendar of planned activities for **Goal 2** – In chronological order, briefly describe the procedures/activities planned to achieve **Goal 2**

Activity	When will the activity take place
Need to acquire proper funding for equipment, related components and training.	Fall 2015

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Goal 3	ILO Alignment (select up to 3)	Strategic Plan Alignment (select best alignment; max 3)	Academic Master Plan Alignment (select best alignment; max 3)	UH System Collaboration
			Action Strategy	Program Action from AMP (ie 4.3)
Heavy duty truck wireless lifting system, 48 tons, 6 set.	ILO 2	B.2	c.	
	None	None	None	
	None	None	None	

Narrative of New Strategy for Strategic Plan:

The new heavy duty truck wireless lifting system will be introduced into the program during lecture and lab activities. This will enhance the program and prepare students for industry expectation.

Narrative of New Strategy for Academic Master Plan

	STEM	Graduation Remediation Workforce	Student Transfer	Underserved Populations	Green Curricula	Program Development
10.4 Industry training	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Briefly explain how Goal 3 aligns to the College's ILOs, Strategic Plan, Academic Master Plan (AMP), and UH System collaboration (if applicable):

We will align with ILO 2, strategic plan B.2, and AMP priorities.

Calendar of planned activities for Goal 3 – In chronological order, briefly describe the procedures/activities planned to achieve Goal 3

Activity	When will the activity take place
Need to acquire proper funding for equipment, related components and training.	Spring 2015-fall 2015

Part IV: Justification for Program Existence

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Summarizing the data over the past 5 years, write a brief statement describing the value of this program to the College.

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.

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, Certificate of Achievement and Associate of Applied Science.