TO: Erika Lacro, Vice President  
University of Hawai‘i Community College System

FROM: CARP and EIMT Cross Campus Working Group

Clifford Rutherford, Assistant Professor, CTEC, MauC  
Darryl Vierra, CARP, HawCC  
Dean Crowell, Assistant Professor, CARP, HonCC  
Duke Lang, Instructor, KauCC  
Gene Harada, Professor, CARP, HawCC  
Gordon Talbo, Professor, Division Chair, KauCC  
Grant Kaaua, Assistant Professor, Construction Academy Coordinator, HawCC  
Jessica Yamamoto, Dean of CTE, HawCC  
Jim Andrews, Assistant Professor, EIMT, KauCC  
Laura Nagle, Dean of CTE, MauC  
Louis Maghanoy, III, Instructor, EIMT, HonCC  
Patrick Pajo, Assistant Professor, EIMT, HawCC  
Preshess Willets-Vaquilar, Interim Dean of Transportation and Trades (Tech I), HonCC  
Renee Dela Cruz, Assistant Professor, EIMT, HawCC

DATE: March 12, 2021

SUBJECT: CARP/CTEC and EIMT Phase II Cross Campus Discussion  
Response to UH Community College Organizational and Resource Plan #3

DESCRIPTION OF CROSS CAMPUS PROCESS

On February 26, 2021, in response to the UHCC Organizational and Resource Plan #3, Dean Nagle (UHMC), Dean Yamamoto (HawCC), and Dean Willets-Vaquilar (HonCC) convened and facilitated a faculty cross-campus discussion around the UHCC Carpentry(CARP), Construction Technology (CTEC), and Electrical Installation and Maintenance Technology (EIMT) academic programs.
The following objectives for the meeting were identified:

1. To offer facilitation for faculty of related program areas and across campuses to review academic programs, offer potential solutions and prioritize potential solutions in response to VP Erika Lacro’s January 26, 2021 Plan #3.

2. To support development of faculty recommendations for repositioning UHCC academic programs for FY22 and beyond.

The cross campus working group convened to review data, discuss specific guiding questions outlined in the Organizational and Resource Planning framework, and recommend next steps for the following campuses and programs:

- Hawai‘i Community College Carpentry Technology
- Honolulu Community College Carpentry Technology
- Kaua‘i Community College Carpentry Technology
- Maui College Construction Technology
- Hawai‘i Community College Electrical Installation and Maintenance Technology
- Honolulu Community College Electrical Installation and Maintenance Technology
- Kaua‘i Community College Electrical Installation and Maintenance Technology

KEY DATA INDICATORS AND SUMMARY OF FINDINGS

The group reviewed the following data to frame the discussions.

a. VP Erika Lacro’s January 26, 2021 Plan #3 and all recommendations for academic programs, in particular CARP and EIMT listed on p.14 and 15.

b. ARPD data for each program summary analysis:
   i. A few errors were noted such as correction to number of classes offered by HawCC EIMT AAS corrected from 5 to 4 classes offered and data incorrectly reflects MauC CTEC graduates because of shift in program code.
   ii. HonCC and HawCC EIMT programs are identified as healthy with robust enrollments and healthy demand.
   iii. HonCC CARP program is healthy with 52 majors and in high demand.
   iv. HawCC CARP is identified as “Cautionary” with 20 majors
   v. MauC CTEC is identified as “Cautionary” with a ratio of 66 students to 1 full time faculty and a fall to spring persistence rate that dipped to 62%
   vi. KauCC EIMT and CARP programs were identified as “Cautionary” due to low enrollments

c. UHCC CARP and EIMT combined lecturer rough estimates per semester
   i. AY 2018-2019-$131,898
   ii. AY 2019-2020-$111,606
iii. F2020-$50,730

iv. Summary analysis: Lecturer costs have been going down since AY 2018 as a result of cost cutting efforts across campuses, particularly at Kaua‘i CC where now only full-time faculty teaches.

d. Low enrollment data and small programs report (data from UH IRO) analysis:

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Hawai‘i CC</td>
<td>Associate</td>
<td>Carpentry Tech</td>
<td>AAS</td>
<td>24</td>
<td>18</td>
<td>5</td>
<td>7</td>
<td>5.3</td>
<td>13</td>
<td></td>
</tr>
<tr>
<td>Kaua‘i CC</td>
<td>Associate</td>
<td>Carpentry Tech</td>
<td>AAS</td>
<td>13</td>
<td>10</td>
<td>4</td>
<td>2.0</td>
<td>8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kaua‘i CC</td>
<td>Certificate</td>
<td>Carpentry Tech</td>
<td>CA</td>
<td>3</td>
<td>3</td>
<td>1</td>
<td>2.3</td>
<td>8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maui College</td>
<td>Associate</td>
<td>Construction Tec</td>
<td>CTEC</td>
<td>AAS</td>
<td>50</td>
<td>63</td>
<td>4</td>
<td>3.3</td>
<td>16</td>
<td></td>
</tr>
<tr>
<td>Maui College</td>
<td>Certificate</td>
<td>Construction Tec</td>
<td>CTEC</td>
<td>CA</td>
<td>4</td>
<td>5</td>
<td>8</td>
<td>4.3</td>
<td>16</td>
<td></td>
</tr>
<tr>
<td>Honolulu CC</td>
<td>Certificate</td>
<td>Electrical Install</td>
<td>EMT</td>
<td>CA</td>
<td>2</td>
<td>1</td>
<td>12</td>
<td>7.3</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Kaua‘i CC</td>
<td>Associate</td>
<td>Electrical Install</td>
<td>EMT</td>
<td>AAS</td>
<td>20</td>
<td>19</td>
<td>3</td>
<td>4</td>
<td>3.7</td>
<td>9</td>
</tr>
<tr>
<td>Kaua‘i CC</td>
<td>Certificate</td>
<td>Electrical Install</td>
<td>EMT</td>
<td>CA</td>
<td>2</td>
<td>4</td>
<td>1</td>
<td>5</td>
<td>3.0</td>
<td>9</td>
</tr>
</tbody>
</table>

Snapshot of Small Programs Report from UH IRO

i. Class size is limited by shop size (max 16) so there is a pre-set capacity for many of class sections. Enrollment varies based on industry demand and the economy.

ii. KauCC CARP and EIMT low enrollment reflects the size of the island community and should be understood in context rather than in comparison to O‘ahu based programs.

iii. HawCC CARP- Enrollment has been fairly consistent. A glitch in the system impacted intake for the program pipeline which already had a max capacity of 16 students.

e. Wage Data for each program (data from UH IRO)

<table>
<thead>
<tr>
<th>CAMPUS</th>
<th>MAJOR_DESC</th>
<th>DEGREE_LEVEL</th>
<th>STATUS</th>
<th>STUDENTS</th>
<th># OF STUDENTS WHOSE WAGE DATA ARE REPRESENTED IN REPORT</th>
<th>PCT OF STUDENTS WHOSE WAGE DATA ARE REPRESENTED IN REPORT</th>
<th>MEDIAN WAGE OF STUDENTS WHOSE WAGE DATA ARE REPRESENTED IN REPORT</th>
</tr>
</thead>
<tbody>
<tr>
<td>HAW</td>
<td>Carpentry Techn</td>
<td>Graduate</td>
<td>16</td>
<td>6</td>
<td>38%</td>
<td>$32,058</td>
<td></td>
</tr>
<tr>
<td>HON</td>
<td>Carpentry Techn</td>
<td>Graduate</td>
<td>31</td>
<td>13</td>
<td>42%</td>
<td>$40,995</td>
<td></td>
</tr>
<tr>
<td>KAU</td>
<td>Carpentry Techn</td>
<td>Graduate</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>MAU</td>
<td>Construction Tec</td>
<td>Graduate</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>HAW</td>
<td>Electrical Install</td>
<td>Graduate</td>
<td>40</td>
<td>26</td>
<td>65%</td>
<td>$30,720</td>
<td></td>
</tr>
<tr>
<td>HON</td>
<td>Electrical Install</td>
<td>Graduate</td>
<td>43</td>
<td>18</td>
<td>42%</td>
<td>$32,184</td>
<td></td>
</tr>
<tr>
<td>KAU</td>
<td>Electrical Install</td>
<td>Graduate</td>
<td>11</td>
<td>6</td>
<td>55%</td>
<td>$36,011</td>
<td></td>
</tr>
<tr>
<td>MAU</td>
<td>Sustainable Contr</td>
<td>Graduate</td>
<td>29</td>
<td>19</td>
<td>66%</td>
<td>$36,291</td>
<td></td>
</tr>
</tbody>
</table>

Snapshot of Wage Data from UH IRO

i. UH IRO-prepared wage data indicates that the majority of the associate programs listed produce graduates for whom the median wage meets living wage standards for each county per the ALICE threshold.

ii. These industries have been pandemic-resistant, are considered essential, and are expected to grow in workforce opportunities.
PROGRAM NEXT STEPS AND RECOMMENDATIONS IN RESPONSE TO MEMO

1) Consolidate KauCC CARP and KauCC EIMT programs into KauCC CTEC

The KauCC EIMT program will be stopped out by Summer 2024 with no new enrollments beginning Fall 2022. Some EIMT courses will be offered in the KauCC Construction Technology program modeled on MauC CTEC to increase student placement into entry level positions and Journeyperson courses will be transferred to OCET through apprenticeship programs. This should also increase enrollment in KauCC CTEC AAS courses.

2) Align KauCC CTEC and MauC CTEC

Two years ago a lot of work was done by CARP faculty to align courses as much as possible. KauCC and MauC will continue this work as they align curriculum and courses.

3) Maintain separate EIMT and CARP programs at HawCC and HonCC.

CARP and EIMT are separate trades with curriculum, skills, and needs specific for each program that meet the specific and specialized industry requirements for their communities.

For the most part, HonCC CARP students who complete the program plan to join the Carpenter's Union.

In addition, both EIMT programs at HawCC and HonCC allow EIMT AAS students enough hours to meet the requirements to take the Maintenance Electrician “EM” license, immediately after receiving their AAS degree. The EIMT Program prepares students to apply for the State of Hawaii DCCA PVL Maintenance Electricians License which requires graduation in a Two-Year Electrical Program to qualify to take the exam. With this Two-Year Diploma, students will also be prepared to take the Journeyworker Electrician, Supervising Electrician, Specialty Electrician, and Electrical Contractors Licenses in the future anywhere in the 50 states. EIMT Programs curriculum is based on the IBEW National Curriculum. IBEW 1186 and IBEW 1260 employs a high percentage of Graduates from Hawaii Community College. For HonCC, after graduating from the program, many students go onto jobs in the private sector, non-union, union and government industries.

Finally, EIMT Advisory Council Members believe that there should not be any "mixing or blending of construction trade training with electrical instruction". That would only weaken the quality of "electrical specific" training a student would receive.
4) Recognize HawCC and HonCC curriculum meet unique industry needs for each island community.

Each community has very specific "skill set" requirements for the respective industries.

a. HonCC EIMT program focuses on PLC work while HawCC EIMT focuses more on house wiring and commercial wiring, students use the pick and shovel to trench, no machines.

b. HonCC CARP graduates are trained in commercial construction and most students go for their AAS degree. The program is hands-on with documented hours. Meanwhile, HawCC CARP graduates are trained in residential buildings on Hawaii island and have a contractual partnership with the DHHL.

HawCC EIMT and HonCC EIMT programs should continue to operate as they are. As stand alone programs that have the flexibility to cater to the specific needs and changes of the electrical industry in their respective areas. This would best serve the needs of the students and the community at large.

HawCC EIMT is unique with a live project that gives EIMT students the real experience of wiring an affordable home for a family of four in a Hawaiian DHHL residential subdivision. This project gives the students hands-on applications that include completing a double wall rough in wiring, performing calculations, and installing a Customer Grid Supply + (CGS+) - Photovoltaic System. The HawCC EIMT program works with County of Hawaii Electrical Inspectors, HELCO Engineering Representatives, study the ESIM (HELCO's Electrical Service Installation Manual) and Current NEC, apply safety, alongside the HawCC Carpentry Program, Architecture Engineering CAD Design (AEC) program, Agriculture, Hawai’i Life Style and Diesel Program faculty and students. Having this DHHL Model Home gives all of the students involved a sense of real time job scheduling commitments that on campus simulated labs can’t replicate, along with the networking with inspectors and other trades.

HonCC’s EIMT program prepares students for entry into the different aspects of the electrical industry on Oahu. The program prepares students for residential types of electrical installations. Throughout the four semesters of the program, students will learn about safety when dealing with electricity; AC and DC systems with an emphasis on motors, motor installation and troubleshooting different types of motor controls and industrial control circuits; solid state devices; understand reading, drawing, and using schematics and ladder diagrams; programmable logic controllers; commercial wiring and the various types of equipment used in commercial installations; pipe bending; and understand how to navigate the National Electrical Code. At the completion of the program, students will have had both the theoretical and practical hands-on experience for an easy transition into any aspect they choose in the electrical field. Upon graduation, students will also qualify for the State of Hawaii’s Maintenance Electrician licensing exam.
5) Convene working group to see where alignment among programs might occur. Some possibilities were already identified:

   a) Align and share online courses when possible such as general education requirements QM, MATH 100 or higher, electives 100 or higher, English or Blueprint classes.
   b) Collaborate when faculty are underloaded when possible.
   c) Look at low enrolled courses to see if collaboration is possible.
   d) Stagger campus offering of low enrolled courses.
   e) Consider sharing modules of EIMT synchronous training such as PLC, fire alarms, motors or software trouble-shooting training programs such as Simutech licenses and other interactive troubleshooting exercises.

6) Request system support to look into DOE high school to college to industry pathway for skilled trades.

   With DOE pathway changes and recent cuts to Construction Academy and Early College budget cuts, CARP/CTEC and EIMT programs would appreciate system support to strategize for DOE to UHCC pathways in areas such as curriculum collaboration and Early College.