



2020

ANNUAL REVIEW OF PROGRAM DATA

## Electrical Installation and Maintenance Technology



UNIVERSITY of HAWAII®  
**KAUA'I**  
COMMUNITY COLLEGE

## 1. Program or Unit Description

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The Electrical Installation and Maintenance Technology (EIMT) mission is to provide Kaua'i employers with a trained workforce having entry-level electrical installation and maintenance skills. To provide Students with a certificate or degree that fulfills education requirements of HRS 448E of the State of Hawaii the Hawai'i Department of Commerce and Consumer Affairs: Professional & Vocational Licensing.

Electrical Installation and Maintenance fulfills its mission by incorporating the following practices. The Program:

- Makes classes available through credit/non-credit to meet State licensure requirements
- Delivers classes for entry level, working apprentice adults and experienced journey-people in small classes that meet the island population size
- Provides a valuable program that contributes to the island's workforce and community needs
- Prepares and supports electrical students by providing training that otherwise would not be available except by traveling to the mainland or other islands
- Encourages students to stay and work on the island of Kaua'i to provide economic growth to the community.

### Part I. Program Description

<b>Date of Last Comprehensive Review</b>	10/23/2017
<b>Date Website Last Reviewed/Updated</b>	8/16/2019
<b>Target Student Population</b>	Current Kaua'i DOE High School Seniors and 20 to 40 year olds looking to change occupations to learn a construction trade.
<b>External Factor(s) that Affected the Program or Unit</b>	Non-credit Courses offered through KCC OCET and the IBEW compete for the same students to attend the credit program to complete the legislative requirement for education for State of Hawai'i licensure. Currently working on BCT Program consolidation.

## 2. Analysis of the Program/Unit

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**Overall Program Health: Healthy**

### Demand Indicators

During the last year, the IBEW 1186 has accepted applications to hire 10 electricians in Kaua'i County into their program and have hired 10 to start the beginning of 2021. The IBEW local 1186 has been on the slow side during the last three years with large commercial building jobs down on the island. They try to start a new group of apprentices every four to five years. Because the union jobs are required to train through University of Hawaii of Community College (UHCC) Office of

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Continuing Education and Training (OCET) Apprenticeships using National Joint Apprentice Training Center (NJATC) Curriculum this will lower the students available for the Credit Program. Graduates are not given preferential treatment but are given credit for their first year of schooling that is required by the NJATC Training Alliance.

Because of economic climate, industry positions have increased over the past year with new jobs being created in remodeling during the Covid-19 shutdown. A few down years with new/ Replacement County positions an overall flat level by one less position, but does not include our largest Solar employer, Rising Sun Solar. The number of related trades is not taken into account with the number of jobs available. Therefore, the program produces more majors than New and Replacement positions available for Journey-Person Electrician. An increase in Maintenance Electricians will become available when the Hospitality Industry picks up later next year.

During the last year, the number of majors has stayed steady at 20. The data also shows a substantial number of full-time students have increased from 32% to 43% while the numbers of part-time students have leveled from 55% to 62% then back to 57%. This is because of stability in the faculty teaching courses and the classes being offered on a two-year cycle consistently. The number of SSH Program Majors in Program Classes have been up during the three-year cycle with an influx of new students during the initial startup, With a high of 280 and a low of 205 but is estimated to level off during next year at 240. FTE Enrollment in Program Classes peaked in AY19-20 at 362 and is trending to level off at approximately 250 over the next five years. More non majors have increased during the last year as adults have been attending courses of getting promotions at work by increase their skill level. The total number of classes taught has increased to 8 this year, mainly due creating a standard two-year pathway asked for by the administration. Demand for the EIMT Program in 2020 is Healthy during the last year due to the three year hiring cycle of IBEW jobs and increase in Solar jobs and more non-union jobs on the island and less workers coming from Oahu to work NECA contractors because of Covid-19.

### **Efficiency Indicators**

The Average Class size for the EIMT Program has increased slightly from 9 to 12 over last three years, and hopefully shows a future upward trend with the combining the credit/non-credit courses. The Fill Rate slightly increased over last year up to 68.8% from 48.6%. As OCET offered no electrical courses were offered the enrollment in EIMT does go up. This year eight working maintenance electricians or Facility Building Maintenance completed taking classes through in EIMT on Tuesday-Thursday nights. Spring Semester the EIMT 51 course is being moved to the afternoon to accommodate FENG 30 and 40 for Air Conditioning to allow fourteen students to graduate a year earlier than estimated. One NFPA 70E course was taught for OCET for Electrical Safety for Non-Electrical Workers for Timbers Hotel. FTE BOR Appointed faculty remains at one, and Majors to Analytic FTE Faculty has decreased over last five years. Several sections of data were not provided in this past three years under budget allocation. It should be noted that the FTE is also teaching FENG courses as part of his teaching assignment. The number of Low-Enrolled classes has decreased from 7 to 2 by trying to increase recruitment rates by offering tours and speaking at the Construction Academy classes at the High Schools. The number of entry level courses has been limited to fall semester and students must now start then to begin the cycle. The number of students taking EIMT on Kauai's is at 5.0 per ten thousand people while it is at 0.65 on Oahu and 1.75 for the Big Island. Health Efficiency for the

EIMT Program for 2019-2021 is *Healthy*.

### **Effectiveness Indicators**

In 2019-20 shows that the Successful Completion has decreased slightly to 87%, which is down from the highest of 100% in the past three years. Withdrawals have also been low overall with five (5) during the five-year cycle. One student received a job offer in the trade and began an apprenticeship in Georgia and the other decided that they did not like working at heights and changed programs. Three others students withdrew from school for personal reasons and have not returned. Persistence fall to spring indicates a downward trend from 78% to 64% once again over last year, although the Persistence fall to fall has dropped from 59% to 45%, part of that may be attributed to high number of students starting that year trying to use their enrollment to qualify for IBEW employment or for the Football Program. While the number of Unduplicated Degree/Certificates Awarded and Degree Awarded dropped, this is due to faculty intervention for students to complete and achieve an AAS. More students started of sequence the last year with some still needing to complete General Education Classes. The faculty contacted students that were one to three credits short to see what the program could do to help those students finish.

The data on the Certificates of Achievement Awarded is also related to those students who were contacted. Students have been found to have completed the EIMT Certificates, but failed to change their declared major from FENG after starting. A PAR change to Building Construction Technology in fall 2021 will address this issue of low enrollment, and will allow students to select from other course offerings. The number of Transfers with and without credential from the program is nonexistent; and is not a measured positive outcome for this CTE program that has historically been a terminal a degree. Health Effectiveness Indicators for the EIMT Program for 2019-2021 is *Cautionary*.

### **Distance Indicators (Completely On-line Classes)**

The EIMT program does not offer Distance Learning at the current time.

### **Performance Indicators**

The EIMT Program shows up and down growth in the Number of Degrees and Certificates and Number of Degrees and Certificates Native Hawaiians. The number of Pell Recipients has fluctuated over the past five years, perhaps due to the stronger economy and in direct relation to part-time students funding their own education. With the addition of the credit/non-credit courses in FY2019-2020 the number of Pell Recipients may increase. The overall cost of the OCET course is the number one reason given for not taking the licensure classes. Creating a credit/noncredit (CA) that has financial aid available will help draw more students to the program. The number of Transfers to UH 4-year was at zero as expected with most student entering the work force.

### **Perkins Core Indicators**

The EIMT Program met the Perkins Core Indicators for Technical Skills Attainment and Student Placement. However, Completion and Student Retention/Transfer goals were not met. It is difficult to ascertain why the other four core indicators were not met as the data provided is incomplete.

Nontraditional Participation and Completion has been a priority in the EIMT Program. The one female in the class and has decided to not complete her generals and did not graduate as expected even though she completed all EIMT courses. We have had our new Trades Tracking Coordinator working with her to make sure she stays on track to graduate, but still dropped out of her classes. The instructor contacted all students who completed the EIMT courses and two students are expected to complete this semester. Six are expected to complete after spring 2021 with those students currently enrolled to complete electives or non-electrical required classes.

The last CPR (Comprehensive Program Review) was in 2017 and was reviewed by the college cabinet.

<https://uhcc.hawaii.edu/varpd/index.php?y=2020&c=KAU&t=CTE&p=2184>

**College:** [Kaua'i Community College](#)  
**Program:** [Electrical Installation & Maintenance Tech](#)  
 Status: Report Complete  
**Program Quantitative Indicators**

**Overall Program Health: Healthy**

**Electrical Installation & Maintenance Tech**

**CIP Code = 46.0302**

[49-2095 - Electrical and Electronics Repairers, Powerhouse, Substation, and Relay](#)[47-2111 - Electricians](#)[47-1011 - First-Line Supervisors of Construction Trades and Extraction Workers](#)

#	Demand Indicators	2017 - 18	2018 - 19	2019 - 20	Demand Health
1.	New & Replacement Positions (State)	1148	1126	1140	<b>Healthy</b>
2.*	New & Replacement Positions (County Prorated)	70	65	64	
3.	Number of Majors	19	20	20	
3a.	Number of Majors Native Hawaiian	5	10	10	
3b.	Fall Full-Time	45%	32%	43%	
3c.	Fall Part-Time	55%	68%	57%	
3d.	Fall Part-Time who are Full-Time in System	0%	0%	0%	
3e.	Spring Full-Time	47%	47%	65%	
3f.	Spring Part-Time	53%	53%	35%	
3g.	Spring Part-Time who are Full-Time in System	0%	0%	0%	
4.	SSH Program Majors in Program Classes	205	210	280	
5.	SSH Non-Majors in Program Classes	33	15	82	
6.	SSH in All Program Classes	238	225	362	
7.	FTE Enrollment in Program Classes	8	8	12	
8.	Total Number of Classes Taught	7	6	8	

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#	Efficiency Indicators	2017 - 18	2018 - 19	2019 - 20	Efficiency Health	
9.	Average Class Size	9	9	12	<b>Healthy</b>	
10.*	Fill Rate	58.1%	48.6%	68.8%		
11.	FTE BOR Appointed Faculty	1	1	1		
12.*	Majors to FTE BOR Appointed Faculty	19	20	20		
13.	Majors to Analytic FTE Faculty	19	20	20		
13a.	Analytic FTE Faculty	1	1	1		
14.	Overall Program Expenditures	\$0	\$0	\$0		
14a.	General Funded Budget Allocation					
14b.	Special/Federal Budget Allocation					
14c.	Tuition and Fees					
15.	Cost per SSH					
16.	Number of Low-Enrolled (<10) Classes	6	3	2		
#	Effectiveness Indicators	2017 - 18	2018 - 19	2019 - 20		Effectiveness Health
17.	Successful Completion (Equivalent C or Higher)	100%	92%	87%		<b>Cautionary</b>
18.	Withdrawals (Grade = W)	0	0	5		
19.*	Persistence Fall to Spring	78%	67%	64%		
19a.	Persistence Fall to Fall	59%	50%	45%		
20.*	Unduplicated Degrees/Certificates Awarded	6	5	3		
20a.	Degrees Awarded	3	4	1		
20b.	Certificates of Achievement Awarded	1	5	3		
20c.	Advanced Professional Certificates Awarded	0	0	0		
20d.	Other Certificates Awarded	3	5	3		
21.	External Licensing Exams Passed <sup>1</sup>					
22.	Transfers to UH 4-yr	1	0	0		
22a.	Transfers with credential from program	0	0	0		
22b.	Transfers without credential from program	1	0	0		

<sup>1</sup> Campus to include in program analysis if applicable.

#	Distance Indicators	2017 - 18	2018 - 19	2019 - 20	
23.	Number of Distance Education Classes Taught	0	0	0	
24.	Enrollments Distance Education Classes	0	0	0	
25.	Fill Rate	0%	0%	0%	
26.	Successful Completion (Equivalent C or Higher)	0%	0%	0%	
27.	Withdrawals (Grade = W)	0	0	0	
28.	Persistence (Fall to Spring Not Limited to Distance Education)	0%	0%	0%	

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#	Perkins Indicators	Goal	Actual	Met	
29.	1P1 Technical Skills Attainment	94.75	100	Met	
30.	2P1 Completion	61	50	Not Met	
31.	3P1 Student Retention or Transfer	86	69.23	Not Met	
32.	4P1 Student Placement	66.75	80	Met	
33.	5P1 Nontraditional Participation	23.75	8	Not Met	
34.	5P2 Nontraditional Completion	23.25	20	Not Met	
#	Performance Indicators	2017 - 18	2018 - 19	2019 - 20	
35.	Number of Degrees and Certificates	4	9	4	
36.	Number of Degrees and Certificates Native Hawaiian	1	3	2	
37.	Number of Degrees and Certificates STEM	Not STEM	Not STEM	Not STEM	
38.	Number of Pell Recipients <sup>1</sup>	2	5	0	
39.	Number of Transfers to UH 4-yr	1	0	0	

\* Used in Rubric to determine Health Indicator

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### 3. Program Student Learning Outcomes or Unit/Service Outcomes

The new PSLO's approved by the Assessment Committee for the Building Construction Technology Program.

1. Examine blueprints sufficiently to use them to plan a project.
2. Select proper materials for a given project that comply with building standards and codes.
3. Maintain the tools required in the Construction Technology Industry.
4. Utilize Occupational Safety and Health Administration (OSHA) and State safety regulations necessary to assess a task for hazards and the steps required to minimize risks, protecting self and others.
5. Know the application of codes and regulations in the mechanical, electrical, and carpentry fields to construct or repair and maintain these systems within a facility.
6. Communicate successfully orally and in writing using computer technology.
7. Understand, integrate, and utilize knowledge in the professional environment.
8. Demonstrate professionalism with attitudes, conduct, ethics, and work practices.

Assessments were completed using the PSLO's for the 2019 AAS EIMT Program.

PSLO	Assessed During this APRU Cycle (Y or N)	Findings	Improvements Implemented	Next Assessment Date
1.The ability to read a blueprint and negotiate through the drawings to layout a	YES	1.Follow Blueprints in building lab projects 2. Use blueprints to complete load calculation from NEC 3.Select materials for a given	New blueprint reading software was requested in Perkins Grant from CMH Software to improve residential and motor control	Annually

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<b>PSLO</b>	<b>Assessed During this APRU Cycle (Y or N)</b>	<b>Findings</b>	<b>Improvements Implemented</b>	<b>Next Assessment Date</b>
project.		job from blueprints	diagrams	
2.The proper selection of materials that comply with published codes and deliver energy efficient outcomes	YES	1.Assignment to take of material list and receive pricing and the purchase materials for on campus projects. 2.Install materials accordance to the NEC Code and local county ordinances	Student are now required to understand materials, cost and procurement procedures for the college. More student projects needed. Labs to be built to accommodate when jobs on campus are not available	Annually
3.The ability to maintain and care for the tools required in the electrical industry.	Yes	1.Student must pick out the tools need to perform projects and demonstrate their proper use. 2.Cleanup and care for tools and equipment. Wear proper PPE when performing task.	Students are given a tool list at the beginning of EIMT 23 and must provide their own hand tools so that they will learn to take care of them. School will only provide necessary power tools.	Annually
4.The safety procedures necessary to assess a task for hazards and the steps required to meet OSHA and State safety regulations.	Yes	1.All students must pass the safety exam at the beginning of each class before participating in labs. 2.As a new task is given each student is required to demonstrate the proper and safe way to complete the task. 3.Students are not allowed to next task without completing safety requirements.	Students are docked points for unsafe conditions and for not using properly taking care of PPE during class.	Annually
5.The ability to communicate successfully in writing, orally and with computer technology.	Yes	1.Students are given written exams on each topic with a midterm and final at the end of the semester. Include are MC, TF, fill in the blank, short essay, and one long essay question. 2.National Electrical Code questions are open book in line with the national standard of being able to answer any questions within three minutes. 3.Many of the assessment are given on the computer system and require students to be computer literate.	The software used in the program was owned by the instructor and during the last APRU the program purchased updated software licenses making all software used legal. Computer services have taken over the update and maintenance of the computer system.	Annually
6.The commitment to craftsmanship including the use of energy efficient practices, dependability and punctuality, and pride in accomplishments.	Yes	1. Students are required to be in class. Three absents are allowed per semester with 30% of grade based on attendance 2. All projects done on campus are expected to be in a professional and workman like manner as according to the NEC and the NECA.	Labs that cover the tasked covered in the course material are important to make sure all skills are accomplished. Completing projects on campus are important; but must not take the place of classroom studies.	Annually

#### 4. Action Plan

The consolidation of the Carpentry, Electrical Installation and Maintenance, and Facility Engineering programs was created to help the college justify the building trades on the island of



Kaua'i by making it possible to meet the minimum numbers required by the UH BOR Executive Policy 5.229 Programs with Low Number of Degrees Conferred. The decision was made to modify the existing AAS Degrees to allow pathways to the Building Construction Trade (merging three programs into a single AAS degree with three concentrations). The Facility Engineering terminal CO has not had student completers formally noted in the total student graduates. Program consolidation will involve converting the existing terminal CO into a CA so that completion rates are formally reported by UH.

The Computer Aided Design, Welding, and Construction Academy courses are added to the program to give these stand-alone courses a CO under the Building Construction Technology Program to help boost enrollment and to budget funds to run the courses through the Trades Division. The Computer Aided Design is articulated with the P-20 DOE Pathways and needs to be included in the proposal so those courses can transfer to the UHCC system. Welding courses will reestablish itself because of public demand with increased AWS training standards to become an addition to the Facility Building Maintenance CA under the new BCT degree.  
Recommendations

Consolidation efforts are modeled after the UHMC Construction Technology AAS Degree while building on the strengths of the EIMT and Carpentry programs at KauCC. The following statements are our recommendations:

- Creation of EC pathways as a replacement for KauCC's Construction Academy for CARP and AEC classes and bring additional secondary students to the College.
- Consolidate these programs as planned and have full-time faculty teach courses in as many disciplines as possible, eliminating lecturers and additional staff, and combine courses that are similar under one program.
- Realizing the Hotel Industry will rebound and these courses will be needed in the future, a restructuring of course offerings and temporarily not schedule low enrolled classes.
- Our final recommendation is to teach courses every other year with every other year start dates in areas to better utilize classroom space and staff.

No salary or cost savings will be gained by the elimination of the Facility Engineering program as the majority of courses are taught by salaried faculty of the existing EIMT and CARP programs. Minimal lecturers are used on courses for which current faculty do not meet the MQs. Loss of FENG students will make many of those combined classes low enrolled. The majority of Facility Maintenance students are returning adults seeking an occupational change or a work promotion. KauCC is the only source of training for Kaua'i residents to update their skills in the Hospitality Industry

## 5. Resource Implications

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Detail any resource requests, including reallocation of existing resources (physical, human, financial)

I am NOT requesting additional resources for my program/unit.

