

# ANNUAL

REPORT OF PROGRAM DATA

# 2023



UNIVERSITY of HAWAI'I  
**HAWAI'I**  
COMMUNITY COLLEGE

**July 1, 2022 through June 30, 2023**

## Electrical Installation & Maintenance Technology Program

Writer: Renee AK Dela Cruz, Associate Professor-EIMT

## 1. Program or Unit Mission

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This program prepares students for employment with electrical appliance shops, utility companies, and electrical construction, and maintenance companies. Learning will center on planning, designing, constructing, installing, and maintaining electrical wiring and equipment.

The initiative still maintains the goals of targeting student population in alignment, with the college's "open door policy" with no reservation to race, color, religion, gender, sex preference, etc. Program faculty will teach anyone who earnestly wants to learn and who wants to better their life, by successfully completing the EIMT two-year AAS degree or CA. By doing so, their chances of getting a job are very auspicious.

Note: EIMT's program has a maximum enrollment limited at twenty (20) seats. Currently there is only an English pre-requirement and no Math pre-requirement. The Program is currently assessing modifications to pre-requirements and is under review to ensure that students will have a seamless transition navigating through the programs training rigor.

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

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### PROGRAM LEARNING OUTCOMES

Upon successful completion, students are prepared to:

- 1.) Accurately demonstrate entry-level skills in residential, commercial, and industrial electrical installation and maintenance.
- 2.) Practice safety on the job and recognize potential hazards.
- 3.) Interpret and comply with the National Electrical Code NFPA 70 book and local codes.
- 4.) Read and interpret all sections of blueprints and draft electrical circuits.
- 5.) Integrate carpentry, masonry, plumbing, and HVACR systems with electrical installation and maintenance.
- 6.) Produce take-off lists, perform layout, and install new materials for existing and new projects.
- 7.) Think critically, do research, calculate minimum requirements, and solve problems.
- 8.) Demonstrate the qualities of an apprentice electrician: positive attitude and behavior, discipline, promptness and attendance, ability to work alone or with others, with cultural awareness, and good communication skills.
- 9.) Participate effectively in individual and group decision making.

2023 Hawai'i Community College ARPD  
Program: EIMT Program – R. Dela Cruz

In the Fall of 2022 the new EIMT 20 Cohort started their initial entry into the EIMT Program. Ninety percent of EIMT students had successfully passed with an 85% + grading score. Assessment was conducted by instructor.

Instructor: Renee AK <a href="#">Dela Cruz</a> EIMT 20 Fall 2022 17209								
Instruction Topics:								PLO(s):
SAFETY	Tool Use & Handling	Ladder Safety	Eye Safety	Back Lifting Safety	NEC- Codes and Definitions			1,2,
NEC Code Book 2020	NM-B	Grounding- Services	Definitions Art. 100	Bath Outlet Requirements- GFCI				1,2,3,4,6,7,8,9
Interpreting HECO ESIM Manual & Installing a Temporary Pole Installation w/ Grounding	Tools: O'O Bars, Sledge hammers, mallets, pick, shovel, rakes	Grounding- Bonding	Definitions OCPD- Breakers, Tie Bars. GFCI Protection.	Lumber, Hardware,	Services	Ladder- Equipment	OCPD- Breakers, Tie Bars. GFCI Protection.	1,2,3,4,5,6,7,8,9
Panel Directory	Phasing	Balancing Loads	Rating and difference of equipment types	Reading Directories	Code Compliance And Interpretation	Color coding		1,2,3,4,6,7,8,9
Meter Equipment & Installation	ESIM - Services	NEC 2020 – Services, Grounding	Equipment Rating	OCPD- Fusing Protection	Cables-SER, SEU, <u>Materials involved</u>	<u>Color Coding</u>		1,2,3,4,6,7,8,9

In the Spring of 2023, the same cohort entered their second semester. Under this writers' supervision and instruction these EIMT students were more adept to take on campus repair jobs and finish the trim out of the Department of Hawaiian Homeland (DHHL) Model Home Project # 55, that incorporated: Sewer Grinder Pump with control station, Solar Water heater System, tie in of new GE 42 Circuit Load Center Panel (AFCI Combination type breakers and GFCI 2-pole breakers) and installed LED fixtures throughout the structure.

Instructor: Renee AK <a href="#">Dela Cruz</a> EIMT 22 Spring 2023 # 18350								
Instruction Topics:								PLO(s):
Box Fill Calculations	Tool Use & Handling	NEC Tables and Definitions						1,3,4,5,6,7,8,9
NEC Code Book 2020	NM-B	Switches, Receptacles	Definitions Art. 100	Outlet Requirements- GFCI, AFCI	Wiring Methods			1,3,4,5,6,7,8,9
Upgrading existing trapeze lighting to Updated LED technology	Boxes and canopy aligners	Grounding- Bonding	Box Fill					1,2,3,4,5,6,7,8,9
Panel Directory	Phasing	Balancing Loads	Rating and difference of equipment types	Reading Directories	Code Compliance And Interpretation	Color coding		1,2,3,4,6,7,8,9
Trimming out MH # 55	Tool Use and Handling	NEC 2020 Compliance	Equipment Rating and tie in Sewer Grinding System and Control Box	GE Load Center tie in- AFCI Combination and GFCI breaker Protection	Data RG-6 and CAT 5 Data Connections	Fixture and Smoke Detector Tie In		1,2,3,4,6,7,8,9

Ninety percent of EIMT students in their second semester had successfully passed with an 85%+ or better. Assessment and grading were conducted by EIMT Associate Professor.

Although this writer did not input Campus Lab plans, coordination with Campus Assessment Coordinator has been ongoing.

### **3. Analysis of the Program/Unit**

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<https://uhcc.hawaii.edu/varpd/index.php?y=2023&c=HAW&t=CTE&p=2775>  
[2022 HAW 2545 Electrical-Installation-&-Maintenance-Tech 1670018616.pdf \(hawaii.edu\)](#)  
[2021-eimt-cpr.pdf \(hawaii.edu\)](#)

#### Demand Indicators:

EIMT has been deemed “Healthy” for the prior 5 years, with a new template this year it is a bit harder to navigate our range of performance. The EIMT Program continues to actively participate in the DHHL Model Home Project that are built in small communities in which we are hoping to gain curiosity and potentially attract Native Hawaiian students. The program also continues to participate in Career Fairs and accepts invitations for on campus visitations (even more this year) as COVID restrictions is depleting and life is progressing back to normalcy.

For the Demand Indicators there may be an error recorded for line #8 “Total Number of Classes Taught” is listed from 2019 – 2023 as Five- “5” . There should be only Four – “4”.

NOTE: Although Blprt. 30-C is “linked” as a requirement for EIMT majors, this is not a EIMT core class. Grading for this Blprt. 30-C does not uphold the strict requirement of passing with a “C” or better and lecturer is not included in the EIMT program as an Analytic FTE Faculty.

#### Efficiency Indicators:

“Average Class Size” has increased by 1 from last year 2021-2022. However, the “Fill Rate” has reduced by 7.5% which may have been contributed by some students changing majors, or felt the need to enter the work force due to financial restraints. There were some students who struggled with learning disabilities that could not endure the rigor of the EIMT program, especially when math exercises were introduced to our subjects, which only added to the stress and entailed unsuccess for the student(s) in the EIMT program. The EIMT program is reassessing the entry level of math skills as a pre requisite to enter the program.

#### Effectiveness Indicators:

Line # 17 Successful Completion (Equivalent C or Higher) maintained the same 96% as the year prior. Lines #18 reflected my report in the paragraph above, which also affected line # 19 Persistence Fall to Spring, where the percentage reduced by 4% from the year prior. As stated in last year’s report, we are still pursuing to resetting the prerequisites for verification of proficiency.

Distance Indicators: None

## 4. Action Plan

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[2021-eimt-cpdf \(hawaii.edu\)](#)

- Based on the Action Plan for CPR AY18-19 to 20-21 submitted by this writer:
  - To find avenues to gain funding to keep renewal subscriptions for Simutech TPC Troubleshooting Simulating program. Simutech TPC training offers students an interactive electrical trouble shooting-safety training to sharpen their theory and skills. This valuable training system promotes safety awareness as they proceed to engage in simulated electrical trouble shooting scenarios. Students are graded and timed which is automatically generated into a report that calculates safety error point deductions and/or bonus time added points. Scores are reviewed with students which have been a great tool to show them their weekly progress. We've seen such great improvements in student's competency and confidence.

The EIMT Program under the direction of this writer had secured a resubscription for Simutech Troubleshooting program in 2022 - 2023. In the Spring semester of 2023, the EIMT students were able to use the different levels of software to enhance their troubleshooting skills. We are continuously pursuing the continuance of using troubleshooting software to enhance students' skills.

- Continue leadership of students to educational success through instruction on the DHHL Model Home Project. This was mentioned in the ongoing action plan for 2020 EIMT Annual Program Review. [2020-eimt-apr.pdf \(hawaii.edu\)](#)

The EIMT cohort under this writer's instruction continues to participate in the DHHL MH projects. Last project MH #55 had gone through Procurement Violations in which impeded production of the project and had thrown the sequencing of timing for students to complete the home that had initially started the work. Hence, the last cohort that had graduated in the Spring of 2022 had fully wired and trimmed out MH # 54 located on Andrews Avenue which included a Grid Tie Photovoltaic system, had also wired up MH #55 located at 354 Nahale-A, but did not get to trim it out. Due to the rapid onset of inflation due to COVID, DHHL had chosen to omit the photovoltaic system for this particular project. The current cohort (Class of 2024) had gotten to trim out the MH #55 project, which was a very different sequence for our normal lesson plan. Despite the twist of events, the EIMT students had gleaned a lot and appreciated the opportunity to participate on this live project. This particular project also included a Sewer Grinding Station with a Control Cabinet. This was a great opportunity for the students to run PVC piping, trench, pull wires, and had made control connections to the control cabinet.

As technology continues to improve, we are moving towards photovoltaic systems which now includes lithium batteries that powers up during the day and serves the household's power needs during the night time when the utility rates are higher for the average user. The EIMT program

will seek updated tools and equipment to embrace the new trend of photovoltaic battery bases systems.

- To improve with every semester by updating labs that are pertinent to industry needs/trends

Improvements are always on going with improvements. We've received equipment from HEERF such as pipe benders, lithium tools, control boards, etc. This will definitely enhance the EIMT lab-lecture.

- To re-engage EIMT Advisory Council members active in assessment and meetings with faculty and observing students at different assigned projects. Updating of members may be necessary to stay on this projected action plan.

EIMT Advisory members (new are renewed members) have been selected to serve from 7-1-22 thru 6-30-24: Dean Oshiro, Troy Haspe, Tony Smith, Ross Iwamoto, and David Kaneshiro.

- To collaborate with Administration and other programs, to improve security for our shops and classrooms here on our Manono Campus.

New recruitment within Administration is being conducted and EIMT will be active with the ongoing initiative for campus security and beautification efforts.

Hence, in the efforts of updating the EIMT program with integrating evolving technology along with county and National Electrical Code changes, our mission and aligns with the Kauhale Mission statement, *"To promote lifelong learning, Hawai'i Community College will emphasize the knowledge and experience necessary for Kauhale members to pursue academic achievement and workforce readiness. Aligned with the mission of the UH Community Colleges, we are committed to serving all segments of our Hawai'i Island community."*

**In order to fulfill even the most minimal of these goals and challenges for the students, the EIMT program must be provided a reliable, safe truck that meets the necessary minimal capacity load requirements for the Model Home project. Please see the resource request attached to this Comprehensive Program Review for details on this transportation need for the program.**

## 5. Resource Implications

**Special Resource Requests not included in operating "B" budget \***

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

☒ I AM requesting additional resource(s) for my program/unit.



**Total number of items being requested: 4 (4 items max.)**

✓ **Item Description:**

✓ **Justification:**

✓ **Priority Criteria** (must meet at least one of the following):

1. Ensure compliance with mandates and requirements such as laws and regulations, executive orders, board mandates, agreements and contracts and accreditation requirements.
2. Address and/or mitigate issues of liability, including ensuring the health, safety and security of our Kauhale.
3. Expand our commitment to serving all segments of our Hawaii Island community through Pālanui and satellite centers
4. Address aging infrastructure.
5. Continue efforts to promote integrated student support in closing educational gaps.
6. Leverage resources, investments with returns, or scaling opportunities
7. Promote professional development.

<b>CATEGORY</b>	<b>Category-Specific Information Needed</b>			
<b>Equipment</b>	Estimated Date Needed Spring 2024	Quantity / Number of Units; Cost per Unit Ford F350, 4 door crew cab, gas with pipe racks (maybe priced by separate vendors) and Tommy Gate	Total Cost (with S&H, tax)  Estimated \$ 125K NOTE: Pipe Rack & Tommy Gate pricing may change.	On Inventory List (Y/N); Decal #, Reason replacing Serial # 1GCEK19K9RE277501 The EIMT program had a GMC truck that is no longer running. We need a safe reliable truck to safely transport students and materials to and from the DHHL Model Home Project.
	Spring 2024	Greenlee #23803 Shoe Group (EMT Shoe Set)	Estimated: \$ 3,200.00	
	Fall 2023	“Simutech” TPC Renewal 20 subscriptions	Estimated: \$5K	
<b>Facilities Modification</b>	Estimated Date Needed	Total Cost	Monthly/Yearly Recurring Costs	Utilities Required
<b>Personnel Resource</b>	Estimated Date Needed	FTE; Position Type; Position Title	Estimated Salary	Was an Existing Position Abolished? (Y/N); Position #

Requesting Training: Solar Power International (SPI 2024)

2023 Hawai'i Community College ARPD  
Program: EIMT Program – R. Dela Cruz

Location: Anaheim Convention Center, Anaheim CA

Date: Sep. 9 – 11, 2024

Estimated Cost for Event: Est. \$2K