HAWAIʻI COMMUNITY COLLEGE
PROGRAM ANNUAL REVIEW REPORT

ELECTRICAL INSTALLATION AND MAINTENANCE TECHNOLOGY PROGRAM

Date: February 14, 2017

Review Period
July 1, 2015 to June 30, 2016

Initiator: Harold Fujii
Writer(s): Renee AK Dela Cruz
Patrick Pajo

Program/Unit Review at Hawaiʻi 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 and Institutional 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/files/program-unit-review/

Please remember that this review should be written in a professional manner. Mahalo.

PROGRAM DESCRIPTION

Describe the Program	
Provide the short description as listed in the current catalog.	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 EIMT Program educates traditional, Non-traditional, and underrepresented gender groups. The EIMT Program has always been a popular trade program that has a large number of students who are competent, engaged to learn and perform the rigor of the EIMT program requirements. The EIMT Program has produced many responsible individuals who are employed in the construction and maintenance job positions. Many past graduates are entrepreneurs who employ present day graduates of Hawaii Community College (HawCC) EIMT Program.
Provide and discuss the program's mission (or goals and objectives if no program mission statement is available).	Program Learning Outcomes Upon successful completion, students are prepared to: • Accurately demonstrate entry-level skills in residential, commercial, and industrial electrical installation and maintenance. • Practice safety on the job and recognize potential hazards. • Interpret and comply with the National Electrical Code NFPA 70 book and local codes. • Read and interpret all sections of blueprints and draft electrical circuits. • Integrate carpentry, masonry, plumbing, and HVACR systems with electrical installation and maintenance. • Produce take-off lists, perform layout, and install new materials for existing and new projects. • Think critically, do research, calculate minimum requirements, and solve problems. • 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.

Comprehensive Review information: Required for ARPD Web Submission

Provide the year and URL for the location of this program's last Comprehensive Review on the HawCC Program/Unit Review website: http://hawaii.hawaii.edu/files/program-unit-review/	
Year	2011
URL	http://hawaii.hawaii.edu/files/program-unit-review/docs/2011_eimt_comprehensive_instructional_program_review.pdf
Provide a short summary regarding the last Comprehensive Review for this program. Discuss any significant changes to the program since the last Comprehensive Review that are not discussed elsewhere in this review.	N/A Comprehensive was more than five years ago.

QUANTITATIVE INDICATORS

ARPD Data

Please attach a copy of the program's ARPD data tables and submit with the Program Review document.

a) **If you will be submitting the Program Review document in hard copy, print and staple a copy of the data tables to the submission; the icon to print the data tables is on the upper right side, just above the data tables.**
   OR
b) **If you will be submitting the Program Review document in digital form, attach a PDF copy of the data tables along with the digital submission; the icon to download the data tables as a PDF is in the upper right side, just above the data tables.**

Program data can be found on the ARPD website: http://www.hawaii.edu/offices/cc/arpd/

ANALYSIS OF THE PROGRAM's DATA

Analyze the program's ARPD data for the review period. Describe, discuss, and provide context for the data, including the program's health scores in the following categories: http://www.hawaii.edu/offices/cc/arpd/	
Demand	Demand indicators are based on the "New & replacement Positions (County Prorated) listed on line #2 divided by the Number of majors listed on line #3. Bench marks: Healthy = > 0.75, Cautionary: 0.5 – 0.74 and Unhealthy < 0.5

	Currently the EIMT Program's Demand Indicator for 2015-16's outcome is at an "Unhealthy" status. This outcome is due to the reduction (18 positions) for "New & Replacement Positions (County Prorated), as compared to 2013-14 positions were at 27. Through updates on past EIMT graduates, majority of the working students have found jobs in private non-union shops. Despite the "Unhealthy" status, the EIMT program continues to be a popular program that has a waiting list every Fall semester. Students are finding job placements upon completion of the program.
Efficiency	Efficiency Indicators are based on the "Fill Rate" listed on line #10. Bench Mark: Healthy: 75-100%, Cautionary: 60 – 74%, unhealthy: < 60 %. Currently the EIMT's Efficiency Indicator for 2015-16's outcome is at a "Healthy" status, due to the 93.3% Fill Rate. EIMT Program is a popular program.
Effectiveness	Effective Indicators are based on two areas: 1.) Increasing the number of Degrees and CA's awarded by 5% per year (Difference between actual and goal) 2.) Persistence Fall to Spring. Currently the EIMT's Effectiveness Indicator for 2015-16's outcome is at a "Healthy" status.
Overall Health	The Overall Health of the EIMT Program for 2015-16's outcome is at a "Cautionary" status. Graduates who are employed are placed mostly in private sector which is not indicated in the Demand Indicators. The program overall health status which is placed as "Cautionary" is not accurate. The Effectiveness Indicators reflects a Healthy status that shows rising numbers of Persistence Fall to Spring and line 20B Certificates of Achievement Awarded has also risen quite a bit for 2015-16.
Distance Education	N/A. No distance education offered for EIMT.
Perkins Core Indicators (if applicable)	We haven't had too much non-traditional genders enter the EIMT cohort. We will need to find ways to attract more females into this male dominated field. Having a female instructor within the EIMT Program helps to display the accomplishments of introducing females into a male dominated profession, such as the electrical industry.
Performance Funding Indicators (if applicable)	

Describe any trends, and any internal and/or external factors that are relevant to understanding the program's data.	External factor (jobs are abundant, low enrolment) Current trend is that construction is abundant and enrolment is inversely affected due to economy gain.
Discuss other strengths and challenges of the program that are relevant to understanding the program's data.	The major **"Strength"** for the EIMT Program is definitely based on the popularity of the program that is reflected in **Line item #9, Average Class Size** (18.7 – 19) and **#10, Fill Rate** (93.3% - 95%). Students are accomplishing their academic goals as shown in **Line # 17 Successful Completion Equivalent C or Higher** 2013-14 = 95%, 2014-15 = 95% and ***2015-16= 86%***. As of Fall of 2014 the EIMT Program produced two cohorts. Data trends are reflected due to new teaching arrangements along with attrition and the strong economy, which reduced student completion of the program see: **Line #18 Withdrawals (Grade = W)** 2013-14 = **2**, 2014-15 = **3**, **2015-16 = 7**. **Line #19 Persistence Fall to Spring** 2013-14 =84.3%, 2014-15= 69.8%, 2015-16 = 88.4% **Line 19a Persistence Fall to Fall** 2013-14 = 62.7%, 2014-15= 51%, **2015-16 = 46.1%**.

Analyze the program's IRO data for the year under review. Discuss how data/analysis provided by the Institutional Research Office has been used for program improvement. (For example, how results from CCSSE or IRO research requests have impacted program development.)	
Describe, discuss, and provide context for the data.	N/A.
Discuss changes made as a result of the IRO data.	

Report and discuss all major/meaningful actions and activities that occurred in the program during the review period. For example:	
Changes to the program's curriculum due to course additions,	As of Fall 2015, DHHL Model Home Project has shifted to the third and fourth semester, to be completed by only second year students.

deletions, modifications (CRC, Fast Track, GE-designations), and re-sequencing	To meet ACCJC's requirement, Etro. 120 math has been added to EIMT's first semester for both CA & AAS degrees which replaced Math 51, along with the addition of Eng 102 (for AAS only). As a result the program overall AAS credit has decreased from 72 credits to 71 credits. BLPRT. 22 and BLPRT 30-C has also shifted to different semesters due to this program adjustment.
New certificates/degrees	N/A
Personnel and position additions and/or losses.	N/A
Other major/meaningful activities, including responses to previous CERC feedback.	

Describe, analyze, and celebrate the program's successes and accomplishments. (For example, *more students were retained/graduated* OR *the program successfully integrated new strategies/technologies*.)	
Discuss what the program has been doing well. Are there areas that needs to be maintained and strengthened? Please provide evidence if applicable (ex: program data reports, relevant URL links, etc.).	The working relationship between EIMT & Carpentry has been re-established, starting this Fall 2015, plans for both EIMT instructors to be alternating supervising and instructing of students to participate on the wiring of the Department of Hawaiian Homelands Project. This re-established working relationship will need to be maintained for the sake of the EIMT students who glean valuable work experiences through this active live job. The DHHL Model Home Project requires interaction for all trades involved, along with a realistic sense of time management schedules. Majority of our graduates have found employment with nonunion privatized companies that focuses on residential and commercial type of jobs. By having this DHHL Model Home project integrated into the program the students will have more skill and retention by their participation. Students will be more adept to perform their skill sets that industry will require from them.

Describe, analyze, and discuss any challenges and/or obstacles the program has faced.	
Identify and discuss the program's challenges/obstacles.	The challenges that the EIMT programs have faced is the struggle of not having adequate work areas between both cohorts. These areas include both indoor and outdoor work spaces. Updated equipment and materials would be needed for student assignments to align with our CLO and PLO's in both cohorts.
Discuss changes and actions taken to address those challenges, and any results of those actions.	Action Plan not available from last year.
Discuss what still needs to be done in order to successfully meet and overcome these challenges.	The EIMT program will need to find funding to properly equip both cohorts. We have received information from Admin. that building #391 has received special funding for building improvements that entails new roofing, flooring, lighting and partial painting for both interior & exterior. A major concern is lack of necessary equipment between both EIMT cohorts, along with necessary indoor and outdoor work areas. We are currently working with Administration to ensure that proper provisions will be supplied.

PROGRAM ACTION PLAN

Discuss the program's prior year's (AY14-15) action plan and results.	
Describe the program's action plan from the prior review period and discuss how it was implemented in AY15-16.	The Action Plan that was submitted for July 1 2014 – June 30, 2015 was a proposal for a "Mock Up Model Lab Structure" two bedroom single-family dwelling. This project had an estimated cost projection of $90K+. This year we are asking for a modified double duplex structure that would allow all of EIMT students to have the structure as a lab project.

	This proposal would be very beneficial to all EIMT students. We will be requesting one unit per cohort. However, funding for original proposal was never awarded.
Discuss the results of the action plan and the program's success in achieving its goals.	N/A. No funding has been awarded.
Discuss any challenges the program had in implementing that action plan or achieving its goals.	No funding was available for the proposed "Action Plan". We are currently trying to overcome the challenge of not having this mock up practicum structure by submitting a request once more through the Annual Comprehensive Review and Program Annual Review Reports.

- Did the program review its website during AY15-16? Please check the box below that applies.

[X] Reviewed website, no changes needed.

[ ] Reviewed website and submitted change request to webmaster on _____(date)_____.

[ ] Reviewed website and will submit change request to webmaster.

Please note that requests for revisions to program websites must be submitted directly to the College's webmaster at
http://hawaii.hawaii.edu/web-developer

Discuss the program's overall action plan for AY16-17, based on analysis of the Program's data and the overall results of course assessments of student learning outcomes conducted during the AY15-16 review period.	**Benchmarks and Timelines for implementation and achievement of goals.**
Action Goal 1: Stabilizing resources for new arrangement of separate cohort groups. Please see health and safety/emergency funding requests below, and long-term funding requests to support this goal in the AY14-16 Comprehensive Review.	**Benchmarks/Timelines:** Currently working with Admin. to secure necessary funding, apparatus, equipment, and necessary health and

	safety upgrades to instructional facilities to be used in this upcoming Fall 2017.
How can this action Goal lead to improvements in student learning and attainment of the program's learning outcomes (PLOs)? Students should definitely not be deprived of lack of equipment and materials. Students are required to be trained using up-to-date equipment, tools and materials to be properly educated to meet our EIMT mission statement and PLO's. Proper funding of both EIMT cohorts will bring forth student skill attainment, knowledge retention, comprehension, and student success.	
Action Goal 2: Increase educational opportunities in photo-voltaic. **How can this action Goal lead to improvements in student learning and attainment of the program's learning outcomes (PLOs)?** Industry has taken a turn due to the over saturation of HELCO power lines. The latest alternative is to have Customer Self Supply Systems (CSS) installed to offset fluctuating HELCO fee's. This package would then take the place of the DHHL MH Project (PV Installation) and would be transferred to on campus instruction instead, which will fulfill the course description for EIMT 20, 22 and EIMT 43. This new concept is a current trend that will eventually be common for consumers in the state of Hawai'i which will possibly entail a future demand.	**Benchmarks/Timelines:** **Fall 2017**
Action Goal 3: Immediately secure new New Quad Cab 4 X 4 truck for health and safety reasons.	**Benchmarks/Timelines:** **Fall 2017- Spring 2018**
How can this action Goal lead to improvements in student learning and attainment of the program's learning outcomes (PLOs)? This action goal is a **health and safety concern** for all passengers of the truck. At times the driver's bench set does not engage to set, so drivers bench seat slides while operating the vehicle. Gas pedal is sticky (hard to control throttle) and the rear tail gate does not open, which makes the truck difficult to load & off load.	

RESOURCE IMPLICATIONS

NOTE: General budget asks are included in the 3-year Comprehensive Review. Budget asks for the following categories only may be included in the Annual review: health and safety needs, emergency needs, and/or necessary needs to become compliant with Federal/State laws/regulations.

Please provide a brief statement about any implications of or challenges with the program's current operating resources.

The allocated budget reserved for EIMT was equally disbursed between the two cohorts units about 11 years ago, which is not adequate for materials, hardware, apparatus and necessary supplies. Prices on copper wires that we use daily has increased with no comparable increase in the G-Budget to compensate for inflation.
Projecting into June 2018 when the renovation of building #391 we will be completed. The Separated shop will now be required to have our own first aid kit that's required to meet OSHA's standard. Currently working with Admin. to obtain the necessary apparatus.

This is an **emergency need**.

For budget asks in the allowed categories (see above):	
Describe the needed item(s) in detail.	Fencing for grass areas around Building 391 (Mauka West Facing & South Facing). These areas intersect with the main driveway leading to the main rear parking lots and overflow parking lots. Students who walk through the parking lot alongside the grass areas are prone to being run over by passing cars, or falling into the EIMT trenches that are used for lab assignments. This driveway has no shoulder or walkways for pedestrians to walk on. Estimated fencing 180' x 6' high, with two doors (one in each section-with provisions for locking) and one divider fenced wall located at the SW corner of the Building 391. This is a **Health, Safety** & emergency deemed situation.
Include estimated cost(s) and timeline(s) for procurement.	Estimated cost: $15,000.00

Explain how the item(s) aligns with one or more of the strategic initiatives of 2015-2021 Strategic Directions.	HGI Action Strategy 2: Bullets # 9 & 10. *"Strengthen and align assessment, program/unit review, date collection, and data analyses processes to support improved teaching and learning, accreditation, and governance and planning."* *"Provide enhanced professional development to improve teaching and learning."* By securing these lab sites, we will have security for our students being protected by passing vehicles when they are completing their outdoor lab assignments that will be used for assessment. The other safety concern is to ensure that pedestrians will not get injured by walking near the open trenched lab areas. This is a **safety & health** concern.

http://hawaii.hawaii.edu/sites/default/files/docs/strategic-plan/hawcc-strategic-directions-2015-2021.pdf

LEARNING OUTCOMES ASSESSMENT

For all parts of this section, please provide information based on CLO (course learning outcomes) assessments conducted in AY 2015-16, and information on the aligned (PLOs) program learning outcomes assessed through those course assessments.

If applicable, please also include information about any PLO assessment projects voluntarily conducted by the program's faculty/staff.

Evidence of Industry Validation and Participation in Assessment (for CTE programs only)

Provide documentation that the Program has submitted evidence and achieved certification or accreditation from an organization granting certification in an industry or profession. If the program/degree/certificate does not have a certifying body, you may submit evidence of the program's advisory committee's/board's recommendations for, approval of, and/or participation in assessment(s). **Please attach copy of industry validation for the year under review and submit with the document.**

Courses Assessed

- List all program courses assessed during AY 2015-16, including those courses for which a follow-up "Closing the Loop" assessment was implemented during the review year.

Assessed Course Alpha, No., & Title	Semester assessed	CLOs assessed (CLO# & text)	CLO-to-PLO alignment (aligned PLO# & text)
EIMT 41	Fall 2015	3.) Calculate wire fill to select appropriate type of size of conduits.	PLO: 1, 3, 6 & 7.
EIMT 43	Spring 2016	4.) Design and Draft Electrical Control Schematics and Electrical Wiring Diagrams.	PLO: 1, 4, 7 & 8.
"Closing the Loop" Assessments Alpha, No., & Title	**Semester assessed**	**CLOs assessed (CLO# & text)**	**CLO-to-PLO alignment (aligned PLO# & text)**

Assessment Strategies

For each course assessed in AY 2015-16 listed above, provide a brief description of the assessment strategy, including:	
a description of the type of student work or activity assessed (e.g., research paper, lab report, hula performance, etc.);	EIMT 41: Artifact used, students Conduit Fill Calculation Worksheet. Observation of students in lab. EIMT 43: Artifact used, students Motor Control Workbook Exercise Work Sheet "Logic Control Circuitry". Observation of students working in lab.
a description of who conducted the assessment (e.g., the faculty member	EIMT 41: Faculty-R. Dela Cruz had conducted assessment. Assessors included: Former EIMT Instructors: Mr. Kenneth Kamioka, and Mr. Richard Uchida, EIMT Advisory Members: Mr.

who taught the course, or a group of program faculty, or the program's advisory council members, etc.);	Troy Haspe and Mr. Gene Villaurel. Electrician Mr. Maxwell Dodo. EIMT 43: Faculty-R. Dela Cruz had conducted assessment. Assessors included: Former EIMT Instructor: Mr. Kenneth Kamioka, EIMT Advisory Members: Mr. Troy Haspe and Mr. Gene Villaurel. Electrical Contractor: Mr. Scott Inouye.
a description of <u>how student artefacts were selected for assessment</u> (did the assessment include summative student work from all students in the course or section, <u>OR</u> were student works selected based on a representative sample of students in each section of the course?);	EIMT 41: All student's worksheet were numbered and assessors randomly choose a number to select anonymous artifacts to be assessed. Assessors used a rubric to rate artifact. Assessors were then able to observe and/or interview student's performances, work attentiveness, comprehension, safety awareness & conduct. EIMT 43: All Students workbooks were numbered and assessors randomly choose a number to select anonymous artifacts to be assessed. Assessors used a rubric to rate artifact. Assessors were then able to observe and/or interview student's performances, work attentiveness & demeanor, as students were wiring up motor controller switches & lighting contactors.
a brief discussion of the <u>assessment rubric/scoring guide</u> that identifies criteria/categories and standards.	* All invited Assessors are legit, competent and are respected members in the field of electricity. EIMT 41: Rubric showcased student's knowledge of conduit fill calculations, NEC Code compliance, and workmanship. The scoring categories were based on: Does Not Meet Expectation 1 point, Developing to Meet Expectation 2 points, and Meets Expectation 3 points. EIMT 43: Rubric showcased the knowledge of devices and components, ladder cross reference numbering, circuit drafting skills, wire reference and workmanship on project. The scoring categories were based on: Does Not Meet Expectation 1 point, Developing to meet Expectation 2 points, and meets Expectation 3 points.

Levels of Achievement

- For each course assessed in AY 2015-16, indicate the benchmark goal for student success for each CLO assessed.

- example 1: “85% of students will Meet Standard or Exceed Standard for CLO#1”;
- example 2: “80% of students will attain Competency or Mastery of CLO#4.”

Assessed Course Alpha, No., & Title	**Benchmark Goal for Student Success for Each CLO Assessed**
EIMT 41 CRN # 15425	87-95% of all students will be meeting standard of PLO’s & SLO’s for Fall 2015.
EIMT 43 CRN#16166	80% of all students will Meet Standard or Exceed Standard for CLO#4.

Results of Course Assessments

For each course assessed in AY 2015-16:	
provide a description of the summative assessment results in terms of students’ attainment of the CLOs and aligned PLOs.	**EIMT 41:** As a result of my assessment, the rubric grading focused on SLO-CLO#3, which tied into PLO’s 1,3,6 & 7. The maximum possible scoring points were 9 points per person-per rubric. Four Assessors had rated their chosen student’s work to be 9 points and one assessor registered at 8 points. Hence, we derived at 97% overall. **EIMT 43:** As a result of my assessment, the rubric grading focused on SLO-CLO #4, which tied into PLO’s 1,4,7 & 8. The maximum possible scoring was twelve points, per person-per rubric. All four assessors had rated their chosen student’s work to be twelve points each. Hence, the result of four assessors were tallied at 100% satisfaction, by each assessor.

Other Comments

Include any additional information that will help clarify the program’s course assessment results.	
Include comparisons to any applicable College or related UH-System program standards, or to any national standards from industry, professional organizations, or	

accrediting associations.	
Include, if relevant, a summary of student survey results, CCSSE, e-CAFE, graduate-leaver surveys, special studies, or other assessment instruments used that are not discussed elsewhere in this report.	See my student's comments for Fall 2015 EIMT 41 and Spring 2016-EIMT 43. The students recognized the lack of funding for supplies along with lack of work space were of major concerns for them. *See Student E-Café for EIMT 41 & EIMT 43 https://www.hawaii.edu/ecafe/published-results.html?id=18425

Next Steps – Assessment Action Plan

Describe the program's intended next steps to improve student learning, based on the program's overall AY 2015-16 assessment results. Include any specific strategies, tactics, activities, or plans for instructional change, revisions to assessment practices, and/or increased student support.	
Instructional changes may include, for example, revisions to curriculum, teaching methods, course syllabi, course outlines of record (CORs), and other curricular elements.	Replacement of Math 51 with ETRO 120 has been implemented as a new revision. Related courses such as Blprt. 22 and 30C has been moved back a semester to make necessary adjusted to accommodate the ETRO 120. Will Continue to request funding for PV "Off Grid Package", and Mock Up Model Lab Structures, to meet the PLO's and CLO's for our EIMT students. Assessment will be enhanced if EIMT is granted funding of these needed instructional resources.
Proposals for program modifications may include, for example, re-sequencing courses across semesters, or re-distribution of teaching resources, etc.	Possible review of modifying CLO's and course listings for EIMT 20, 22, 41 and 43, due to the adjustment of the DHHL MH schedule for EIMT participation of having second year student participate in their third and fourth semester, which is not listed in the current appropriate course content. Will continue to request funding for PV "Off Grid Package", and Mock Up Model Lab Structures, to meet the PLO's and CLO's for our EIMT students. Assessment will be enhanced if EIMT is granted funding these needed instructional resources.
Revisions to assessment	**Continuing to process "Closing the Loop" and moving on**

strategies or practices may include, for example, revisions to learning outcome statements (CLOs and/or PLOs), department or course assessment rubrics (criteria and/or standards), development of multi-section/course summative assignments or exams, etc.	**towards next Assessing other Subject topics.**
Student support and outreach initiatives may include, for example, wrap-around student services, targeted tutoring and/or mentoring, etc.	

Part VI. Cost Per SSH

Please provide the following values used to determine the total fund amount and the cost per SSH for your program:

General Funds = $_____
Federal Funds = $_____
Other Funds = $_____
Tuition and Fees = $_____

Part VII. External Data

If your program utilizes external licensures, enter:

Number sitting for an exam _____
Number passed _____