

**HAWAI`I COMMUNITY COLLEGE  
ANNUAL  
PROGRAM REVIEW REPORT**

**Electrical Installation and Maintenance  
Technology (EIMT)**

**December 3, 2009**

**(Assessment Period: 2008-2009)**

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**UHCC December 2009 Coversheet –  
Annual Report Program Data**

**College: Hawai'i Community College**

**Program: Electrical Installation and Maintenance Technology**

<b>Check All Credentials Offered</b>	<b>AA</b>	<b>AS</b>	<b>ATS</b>	<b>AAS</b>	<b>CA</b>	<b>CC</b>	<b>COM</b>	<b>ASC</b>	<b>APC</b>
				<b>X</b>	<b>X</b>				

**Introduction: Brief description of the program and program mission.**

- **Programs' Mission**
  - The EIMT Program endeavors to provide the maximum learning opportunity for students to build proficiency in electrical installation and maintenance technology, current NEC National Electrical Code NFPA 70 interpretations and comprehension, current construction field and industry methodology, related field manual dexterity, cultural awareness, and sound work ethics; in alignment with UHCC's and HawCC's mission to serve all segments of our Hawai'i Island Community.

**Part I.**

**Quantitative Indicators (Reported on 2009 Summary Report Program Data excel sheet --includes health calls based on system scoring rubric).**

**Annual Report of Program Data for Electrical Installation & Maintenance Tech  
Hawaii Community College Program Major(s): EIMT**

<b>Overall Program Health</b>					<b>Cautionary</b>		
<b>Demand Indicators</b>					<b>Academic Year</b>		
					<b>Fall 06</b>	<b>Fall 07</b>	<b>08-09</b>
<b>1</b>	<b>New &amp; Replacement Positions (State)</b>	63	108	99	<b>Demand Health Cautionary</b>		
<b>2</b>	<b>New &amp; Replacement Positions (County Prorated)</b>	10	20	18			
<b>3</b>	<b>Number of Majors</b>	80	83	88			
<b>4</b>	<b>SSH Program Majors in Program Classes</b>	384	444	864			

5	SSH Non-Majors in Program Classes	0	0	0
6	SSH in All Program Classes	384	444	864
7	FTE Enrollment in Program Classes	26	30	29
8	Total Number of Classes Taught	2	2	4

Efficiency Indicators		Academic Year			Efficiency Health Healthy
		Fall 06	Fall 07	08-09	
9	Average Class Size	16.0	18.5	18.0	
10	Fill Rate	80%	93%	90%	
11	FTE BOR Appointed Faculty	2.0	2.0	2.0	
12	Majors to FTE BOR Appointed Faculty	40.0	41.5	43.8	
13	Majors to Analytic FTE Faculty	50.0	51.9	49.2	
13a	Analytic FTE Faculty	n/a	n/a	1.8	
13b	Majors to Analytic FTE Faculty @12cr.	40.0	41.5	39.4	
13c	Analytic FTE Faculty @12cr.	2.0	2.0	2.2	
14	Overall Program Budget Allocation @12cr. F07, 0809	\$81,852	\$100,376	\$118,969	
14a	General Funded Budget Allocation	n/a	n/a	\$118,969	
14b	Special/Federal Budget Allocation	n/a	n/a	\$0	
15	Cost per SSH @12cr. F07, 0809	\$213.16	\$612.05	\$137.70	
16	Number of Low-Enrolled (<10) Classes	0	0	0	

Effectiveness Indicators		Academic Year			Effectiveness Health Cautionary
		2006	2007	08-09	
17	Successful Completion (Equivalent C or Higher)	n/a	n/a	100%	
18	Withdrawals (Grade = W)	n/a	n/a	0	
19	Persistence (Fall to Spring)	80%	84%	73%	
20	Unduplicated Degrees/Certificates Awarded	n/a	n/a	15	
20a	Number of Degrees Awarded	10	9	15	
20b	Certificates of Achievement Awarded	10	2	9	
20c	Academic Subject Certificates Awarded	n/a	n/a	0	
20d	Other Certificates Awarded	n/a	n/a	0	
21	Transfers to UH 4-yr	0	0	0	
21a	Transfers with degree from program	n/a	n/a	0	
21b	Transfers without degree from program	n/a	n/a	0	

C/P denotes that the measure is provided by the college, if necessary.

Data current as of: 8/19/2009 - 3:30:PM

Distance Education Completely On-line	Academic Year
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Classes		Fall 06	Fall 07	08-09
22	Number of Distance Education Classes Taught	n/a	n/a	0
23	Enrollment Distance Education Classes	n/a	n/a	0
24	Fill Rate	n/a	n/a	0%
25	Successful Completion (Equivalent C or Higher)	n/a	n/a	0
26	Withdrawals (Grade = W)	n/a	n/a	0
27	Persistence (Fall to Spring Not Limited to Distance Education)	n/a	n/a	0%
Perkins IV Core Indicators				
Perkins IV Measures 2007-2008		Goal	Actual	Met
28	1P1 Technical Skills Attainment	90.00	100.00	Met
29	2P1 Completion	44.00	81.25	Met
30	3P1 Student Retention or Transfer	55.00	88	Met
31	4P1 Student Placement	50.00	100	Met
32	5P1 Nontraditional Participation	25.00	15.38	Did Not
33	5P2 Nontraditional Completion	25.00	13.33	Did Not

## Part II.

**Analysis of the Program (strengths and weaknesses in terms of demand, efficiency, and effectiveness based on an analysis of the data).**

**OVERALL PROGRAM HEALTH: Rated as *Cautionary***

### **Demand Indicators: *Cautionary***

There are 88 majors with 18 New and Replacement Positions (County prorated); a ratio of 4.89 majors to each New and Replacement position. More positions are needed to rise to a Healthy score because the maximum number of students enrolled in the EIMT program is 40, divided into first and second year. More majors would mean more students waiting to get into the program.

The EIMT Program researched demands of electricians in the State of Hawai'i. EIMT graduates are highly qualified to be employed in many related companies in both Private and Government workplaces. The Occupation Profile of Hawai'i Trends Employment Period between 2006 and 2016:

- Electricians/80 openings
- Electrical Power-Line Installers and Repairers/20 openings
- Power Plant Operators/10 openings
- Heating, Air Conditioning, Refrigeration Mechanics and Installers/20 openings
- Maintenance and Repair Workers/70 openings

- Helpers-Installation, Maintenance, and Repair Workers/20 openings
- Elevator Installers and Repairers/10 openings
- Telecommunications Equipment Installers and Repairers, Except Line Installers/20 openings
- Electrical Engineers/20 openings

“Grade A” apprentices that were hired in the Electrical Industry. Graduates fulfilled employment vacancies at Electrical Maintenance, Electrical construction, and various Utility Companies such as Power Utilities and Communication Utilities. Every graduate wanting to work had an opportunity to apply. Graduates from the EIMT Program fulfilled the majority of the positions that were available. Graduates compete with applicants who did not graduate from the EIMT Program. The collaboration of both the EIMT Program and the Advisory Council is the key to employment of graduates. Graduates and employers report to the EIMT Program about their employments.

**Efficiency Indicators: Healthy**

The EIMT program continues to be a sought after program and have realized high fill rates. Majors to FTE BOR Appointed Faculty is 43.8 which indicates the program could use another instructor. However, the program has been operating efficiently with two faculty by accepting new students only once a year in the fall semester.

**Effectiveness Indicators: Cautionary**

The Cautionary score of the Effectiveness Indicators is the result of the 73% Persistence rate. The students are told of the importance of acquiring EIMT Program AAS Degree or Certificate of Achievement instead of taking the EIMT courses just for learning the skills only. Acquiring an AAS Degree or a CA in the EIMT Program is an incentive for the graduate since it automatically qualifies them in taking the “State of Hawai’i Maintenance Electricians License.” In addition, an AAS Degree in EIMT is required for an applicant to qualify to take the License Exam. Granted EIMT is a rigorous program and students must be disciplined and focused; however students do not persist due to a variety of reasons, many are personal issues.

Unduplicated Certificates/Degrees awarded in relation to majors is 17.05% (15/88), a Cautionary score. It must be noted that only 40 students are in the program at a time.

Unduplicated Certificates/Degrees awarded in relation to New and Replacement Jobs (prorated County) is .83, a healthy score.

In spite of the downturn in construction, graduates filled employment vacancies at electrical maintenance, electrical construction, and various utility companies such as power utilities and communication utilities. Every graduate wanting to work had an opportunity to apply and graduates from the EIMT Program filled the majority of the positions that were available. The collaboration between the

EIMT Program and the Advisory Council is the key to employment of graduates. Graduates and employers report to the EIMT Program about their employments.

- Note: 1) Career Technical Education (CTE) programs must include in analysis any Perkins IV Core indicator for which the program did not meet the goal.**  
**2) If using alternative “program capacity” method to determine program efficiency, include in analysis.**

Two out of six Perkins IV Core Indicators were not met. More females are entering the program and are performing well. An effort to recruit females will be an action item for the program.

**Significant Program Actions (new certificates, stop-out; gain/loss of positions, results of prior year’s action plan).**

- Articulation between HonCC EIMT Program and HawCC EIMT Program is not compatible. We have consulted with HonCC about articulation at PCC meetings and it was concluded that the demand of types of Electricians differ between the Island of Hawai’i and the Island of Oahu. Oahu is heavier in Industrial/Manufacturer Applications. The Island of Hawai’i is heavier in Commercial and Residential Applications.
- The EIMT Program is part of the Construction Trades Department in the Applied Technical Education Division. The Construction Trades Department has a unique and exceptional capstone project that is used as an assessment tool. Unfortunately, with liability issues concerning Instructors using personal State of Hawai’i Electrical Supervisors’ & Electrical Contractors’ Licenses for obtaining County of Hawai’i electrical permits, the EIMT Program is no longer involved with this project.
- Curriculum has been altered to include as the Capstone goal of the program preparation of students to acquire the “State of Hawai’i Maintenance Electricians License.” Graduates of the EIMT Program automatically qualify to take the exam with an AAS Degree in EIMT. Students who obtain Electrical Licenses can be tracked through the State of Hawai’i DCCA Website and Out of State Websites.
- The EIMT Program is in the process of Modifying the Program:
  - to prevent confusion between the Electrical Program and the Electronics Program.
  - to streamline course descriptions that are required as an entry-level Apprentice Electrician.
  - to remove course descriptions that are not required as an entry-level Apprentice Electrician. These jobs are practiced in another

level of electricians that is for Specialty Electricians. However, they still need the basic knowledge and training taught in the EIMT Program.

- to introduce new Photovoltaic Technology to students and to prepare students to be employable for the renewable energy market. This course will teach students basic and intermediate levels of installation and maintenance of PV systems. In industry, electrical contractors install and maintain PV systems. Some students may decide to continue their education and become PV Engineers who design systems. This course will bring continuity between Electrical Power Generation and Controls which is practiced in the construction industry. This modification will need funding from grants such as the Perkins Grant for expenses such as Train-the-Trainer; Instructors pay; and an actual Grid-Tie/Off-Grid system for hands-on training.

### **Part III. Action Plan**

- **Action Plan**

- Continue recruitment efforts.
- Continue developing a priority list of equipment upgrades and replacements through funding that becomes available.
- Hold an Advisory Councils meeting once a year.
- Produce and complete a 4 year Assessment Plan with Rubrics.
- Continue requesting for a new replacement van through Division Chair and Vice Chancellor.
- Continue to pursue HawCC Auxiliary to post “No Smoking”, “Speed Limit”, and “No Loud Music” signs on campus at strategic areas. This is a health, safety, and learning concern which come from students and instructors. Interruptions and distractions greatly affect the learning outcome of each student. Security guards on campus must enforce these areas for a healthier and safer environment. These are violations of the UH/Hawai'i Community College Campus Policies.
- Course Modifications for fourth semester to implement Photovoltaic Installation and Maintenance Technology.
- Search for individuals who are willing to assist in acquiring funds for “PV Training Systems” and instructors' salary.

- Program Modifications to streamline all four courses which includes changing course alphas, numbers, and titles; and adding Co-requisites to help students graduate within two years.
- Continue to solicit donations from industry.
- Survey graduates to assess number taking and passing electrical licenses as well as to use results to revise program.

Efforts on implementing a “Sustainable Energy” course into the fourth semester are in progress. The EIMT Program is currently pursuing grants to purchase a “Photovoltaic Training System.” The “PV Training System” will be used as a tool to assess SLO’s.

**Part IV. Resource Implications (physical, human, financial).**

<b>NEEDS:</b>	<b>COST</b>
Photovoltaic System and Instructors	\$100,000.00
10 Passenger Van	\$50,000.00
Air Compressor for jack hammer and accessories	\$25,000.00
Pick-up Truck Crew Cab	\$50,000.00
Visual Presenter (ELMO)	\$3,000.00
Computers and Specific Lab Programs for Student Lab	\$50,000.00

<b><i>Nature of Problem</i></b>	<b><i>Describe Location: e.g. Building(s) &amp; Room(s)</i></b>
<ul style="list-style-type: none"> <li>-increase square footage to provide efficient working space for student workstations</li> <li>-replace light fixtures</li> <li>-upgrade trolley power receptacle system</li> <li>-repair rooftop exhaust fans</li> <li>-replace storage rack systems</li> <li>-replace pipe/conduit racks</li> <li>-repair hoist system</li> <li>-replace air compressor system</li> <li>-replace doors and locks</li> </ul>	Building 391/17 Laboratory
<ul style="list-style-type: none"> <li>-upgrade phone lines and catv cables</li> <li>-replace office furniture</li> <li>-replace all light fixtures</li> </ul>	Building 391/18, 22 Faculty Offices



<ul style="list-style-type: none"> <li>-replace ceiling tiles</li> <li>-upgrade electrical power outlets</li> <li>-improve internet cable layout</li> <li>-replace floor tiles</li> <li>-replace doors and locks</li> </ul>	
<ul style="list-style-type: none"> <li>-replace louvers</li> <li>-replace furniture</li> <li>-replace light fixtures</li> <li>-replace ceiling tiles</li> <li>- upgrade electrical power outlets</li> <li>-replace floor tiles</li> <li>-replace doors and locks</li> </ul>	Building 391/23, 24 Lecture Rooms
<ul style="list-style-type: none"> <li>-replace light fixtures</li> <li>-replace ceiling tiles</li> <li>-replace racking systems</li> <li>-improve electrical</li> <li>-replace floor tiles</li> <li>-replace doors and locks</li> </ul>	Building 391/12, 13, 14, 15, 16, 20, 21 Storage / Tool Rooms

**Annual Report Program Data and analysis located on college website at:**

[AY 2009 Completed Annual Program-Unit Reviews](#)