

# HAWAI'I COMMUNITY COLLEGE COMPREHENSIVE PROGRAM REVIEW REPORT

NAME OF PROGRAM

November 30, 2012

Reporting Period: July 1, 2007 to June 30, 2012  
Assessment Period: July 1, 2009 to June 30, 2012

Initiator: Joel Tanabe  
Writer(s): Melanie Higa

Program Review at Hawai'i Community College is a shared governance responsibility related to strategic planning and quality assurance. It is an important planning tool for the college budget process. Achievement of Program Outcomes is embedded in this ongoing systematic assessment. Reviewed by a college-wide process, the Program Reviews are available to the college and community at large to enhance communication and public accountability.

HAWAI'I COMMUNITY COLLEGE  
COMPREHENSIVE PROGRAM REVIEW REPORT  
*PROGRAM NAME*

Part I: Provided is the link to APRD:

[http://www.hawaii.edu/offices/cc/arpd/preview.php?rev\\_key=476](http://www.hawaii.edu/offices/cc/arpd/preview.php?rev_key=476)

Part II:

A. Program Effectiveness

1. In Table 1, write a brief narrative describing the program. Clearly describe how the program supports the College's mission and Institutional Learning Outcomes (ILOs).

**Table 1: Description and Alignment with Mission and ILOs**

Program Description:

The program prepares students for employment in telecommunications, medical electronics, computers, and consumer electronics. The electronic technician fabricates, installs, maintains, and repairs electronic equipment.

Students applying to the electronics program should have two years of high school math including geometry or algebra, and two years of high school science including chemistry or physics

How does this Program support the College's mission?

The Electronics Technology Program, in alignment with HawCC's mission, accepts all students from all segments of our Hawai'i Island community that meets the program's entry requirements to prepare individuals to fabricate, install, test, troubleshoot, repair and maintain electronics components, equipment and systems. Courses are scheduled at times convenient for the employers and working students seeking professional upgrade training and certifications in this fast-paced industry.

ILO: Our graduates will be able to communicate effectively in a variety of situations.

*How does the Program support the ILO:*

The program requires students to learn different software and drafting techniques that are utilized as vehicles to communicate technical information. In addition, students must take a variety of general education courses which require good oral and written communication skills.

ILO: Our graduates will be able to gather, evaluate and analyze ideas and information to use in

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overcoming challenges, solving problems and making decisions.

*How does the Program support the ILO:*

Students graduating from the program are provided tools and techniques for solving problems and overcoming challenges through critical thinking and logic. The Electronic technology program is very math intensive which helps students develop good logic skills. They learn to design solutions to problems and methodically troubleshoot circuits and other electronic equipment. These problem solving skills carry over into their everyday lives.

ILO: Our graduates will develop the knowledge, skills and values to make contributions to our community in a manner that respects diversity and Hawaiian culture.

*How does the Program support the ILO:*

In the program, students come from different backgrounds and cultures. Through team projects and taking courses together, many of the students form close bonds to each other. The students share with each other their cultural backgrounds whether it is Hawaiian, Japanese, Chinese, Pilipino or Caucasian. Students will generally pull together as one unit when the rigors of school work start to bog them down. All programs where students share many of the same courses, will find that this is a common pattern.

2. In Table 2, list the Program's top 3 goals/plans from the last **Comprehensive Review period: AY-2006/07 to AY-2011/12**. Evaluate the accomplishments of each goal.

**Table 2: Previous Goals**

Goal 1:

The last comprehensive review was done in November 2007 and there are no goals listed to evaluate

Goal 1 Evaluation:

Goal 2

N/A

Goal 2 Evaluation:

Goal 3

N/A

Goal 3 Evaluation:

3. In Table 3, list the Program's Strengths and Weaknesses
  - a. Briefly describe the program's top 3 strengths and 3 weaknesses to include:
    - 1) An analysis of data elements - demand, efficiency & effectiveness (Data may be determined by UHCC System or campus)
    - 2) Other pertinent information

**Table 3: Strengths and Weaknesses**

**Strengths**

S1:

The potential growth for the Electronics program looks very optimistic. The optimism stems from the proposed Thirty meter telescope pegged to start construction in 2014 and also the growing hype in Science Technology Engineering and Math (STEM) fields. Also, UH Manoa has started an engineering consortium that HCC has been actively participating in attending. The Engineering Consortium at UHM is set-up to assist and promote the recruitment, retention and graduation of engineering students across the UH system regardless of their starting point in the UH system. The program is optimistic that this new medium will break down the barriers and maximize opportunities for more inter-institutional cooperation in course development and implementation and increased access and enrollment via the Internet in hopes of improving the overall program's health.

Evaluation:

S2:

The program currently has a full-time faculty instructor and a lot of support from administration. Previous to having a full-time faculty instructor, lecturers were running the program. Although the program was able to run with lecturers, much of the non-instructional work does not get completed and this leads to poor record keeping and is not sustainable. With a full-time faculty member in place, the program can gain direction and purpose. The technology industry is growing and the demand for STEM programs will inevitably grow. It is important to keep the Electronics program going and producing quality technicians.

Evaluation:

S3:

In this field, it seems as if every day there's another unveiling or breakthrough being produced in this field of technology that supports the student learning.

Fortunately, the program's close partnership with its advisory committee and the high-tech astronomical observatory consortium has provided for a tremendous degree of support in terms of curriculum advisement, job placement assistance, equipment donations and the maintenance of the program. These has relieved the program from expending its fund sites for crucial but expensive equipment acquisitions and utilize its funding to sustain the program's daily needs through the academic year.

Evaluation:

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## Weaknesses

W1:

The facility's existing square footage does not provide for an efficient working space for students, especially in the non-air-conditioned lab. During lab, the jalousies and the bay door are opened fully for maximum ventilation to dilute solder fumes and other odors but this also allows for the inducement into the lab, exhaust fumes from vehicles passing by the shop. The electronics lab has components that breakdown due to high humidity and extreme temperatures.

Evaluation:

W2:

The electronics lab is not equipped with proper test equipment, fabrication tools, or laboratory benches. Students coming through the program should have a working function generator, oscilloscope and multimeter at every lab station. The lab area is not well ventilated so students are breathing in solder fumes (as mentioned in W1). Students must become very comfortable using all the previously mentioned test equipment. These are the tools they will be using for troubleshooting and building circuits.

Evaluation:

W3:

The program has lost a lot of momentum during the past few years. It is going to require a lot of time and funding to get the program up and running at full throttle. A second full time lecturer would help alleviate some of the workload. This way the instructional and non-instructional work can be completed effectively and efficiently.

Evaluation:

- List the Program Outcomes in Table 4. Indicate the assessment method for each outcome, summarize the data gathered and briefly describe any changes made based on assessment and results of the change from the prior year (closing the loop).

**Table 4: Program Assessment Data**

Report on assessment of program outcomes for the past five years. Use the sample format shown below or use your program-specific format.

Program Name: Electronics Technology

Date: Fall 2008

Author(s): Harvey Motomura

**Program Assessment Data**

Program SLOs Assessed:

PLO #1: The student will be able to specify, design, build, install, program, operate, troubleshoot, analyze, and modify electronics systems, automated test, and manufacturing control systems. The student will also be able to specify, install, program, operate, troubleshoot, and modify computer systems.

Evidence of Industry Validation (CTE Programs)

Expected Level of Achievement

80% of the artifacts assessed by the Assessment Team will result in a total score of at least 10.

Course(s) Assessed

ETRO 20/20L  
ETRO 40/40L

Assessment Strategy/Instrument

Rubric



Student ID #: \_\_\_\_\_

Course:  ETRO 20/20L       ETRO 40/40L

**PLO #1 The student will be able to specify, design, build, install, program, operate, troubleshoot, analyze, and modify electronics systems, automated test, and manufacturing control systems. The student will also be able to specify, install, program, operate, troubleshoot, and modify computer systems.**

Criteria	Unacceptable 1	Nearing Proficiency 2	Proficient 3	Points	Comments
content knowledge	Student does not have grasp of content knowledge	Student has grasp of content knowledge, however errors exist and/or information is missing	Student demonstrates full knowledge of skills necessary to construct, evaluate, and troubleshoot microprocessor electronic components.		
response accuracy	Information required by workbook exercise is incomplete, inaccurate, and/or illegible.	All information required by workbook exercise is complete; however information is inaccurate and/or illegible.	All information required by workbook exercise is complete, accurate and legible.		
quality standards	A majority of the work performed by the student was of poor quality.	Overall work performed by the student was of adequate quality.	Work performed by student was of proficient quality		
productivity standards	Incomplete exercise indicates student was not on task	Exercise shows student made an effort to complete all tasks.	Exercise shows student was on task and completed requirements in appropriate time frame		
			Total Points 12 max		

### Results of Program Assessment

### Next Steps

Program Name: Electronics Technology  
Date: Spring 2009  
Author(s): Harvey Motomura

**Program Assessment Data**

Program SLOs Assessed:

Student Learning Outcome # 2:  
The student will have effective written, interpersonal, presentation, and team-building skills.

Evidence of Industry Validation (CTE Programs)

Expected Level of Achievement

Course(s) Assessed

ETRO 122/122L  
ETRO 287/287L

Assessment Strategy/Instrument

Rubric

Student ID #: \_\_\_\_\_

Course:  ETRO 122/122L       ETRO 287/287L

PLO #2 The student will have effective written, interpersonal, presentation, and team building skills.

Criteria	Unacceptable 1	Nearing Proficiency 2	Proficient 3	Points	Comments
content knowledge	Student does not have grasp of content knowledge	Student has grasp of content knowledge, however errors exist and/or information is missing	Student demonstrates full knowledge of skills necessary to construct, evaluate, and troubleshoot microprocessor electronic components.		
response accuracy	Information required by workbook exercise is incomplete, inaccurate, and/or illegible.	All information required by workbook exercise is complete; however information is inaccurate and/or illegible.	All information required by workbook exercise is complete, accurate and legible.		
quality standards	A majority of the work performed by the student was of poor quality.	Overall work performed by the student was of adequate quality.	Work performed by student was of proficient quality		
productivity standards	Incomplete exercise indicates student was not on task	Exercise shows student made an effort to complete all tasks.	Exercise shows student was on task and completed requirements in appropriate time frame		
			Total Points 12 max		

### Results of Program Assessment

### Next Steps

5. Insert grid showing alignment of courses to program outcomes:

<b>Course Alpha &amp; #</b>	<b>PLO #1</b>	<b>PLO #2</b>	<b>PLO #3</b>	<b>PLO #4</b>	<b>PLO #5</b>	<b>PLO #6</b>
ETRO 120 Electronics I	X		X	X	X	X
ETRO 120L Electronics I Lab	X		X	X	X	X
ETRO 121 Electronics Fabrication and Assembly	X		X	X	X	X
ETRO 121L Electronics Fabrication and Assembly Lab	X		X	X	X	X
ETRO 122 Electronics II	X		X	X	X	X
ETRO 122L Electronics II Lab	X		X	X	X	X
ETRO 143 Digital Electronics	X		X	X	X	X
ETRO 143L Digital Electronics Lab	X		X	X	X	X
ETRO 160 Laser Safety and Applications			X	X	X	X
ETRO 161 Introduction to Optics and Photonics			X	X	X	X
ETRO 257 RF Communications			X	X	X	X
ETRO 280 Microprocessor Architecture, Prog & Interfacing	X	X	X	X	X	X
ETRO 166 Introduction to Fiber Optics			X	X	X	X

ETRO 287 Computer Systems and Networking		X	X	X	X	X
ETRO 287L Computer Systems and Networking Lab		X	X	X	X	X

**6. Other Important Considerations**

In Table 5, provide other considerations that could affect the program during the next three academic years (e.g. trends noted over the review period, comparisons to any applicable standards, summaries of Student and/or Employer Satisfaction Surveys, Program Advisory Board recommendations, external factors, etc. (if applicable))

**Table 5: Other Considerations Affecting the Program.**

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### Part III Goals and Program Improvement

#### 1. Goals for AY 2013 – 2017

List the **Program's top 3 goals for Program success in the next Comprehensive Review period: AY 2012/13 to AY 2017/18**. Explain how these goals align with the mission, ILOs, UH Program counterparts, etc. (if applicable). Describe how these goals might improve the program and student learning.

**Table 6: Goals and Alignment**

Goal 1

Acquire proper equipment and workbenches so students may run labs without having to deal with test equipment malfunctions.

ILO alignment

ILO #2

UH Collaboration

Innovations

Goal 2

Align program to mirror MCC's AS program to facilitate student transfer into MCC's BAS program.

ILO alignment

ILO #1 and ILO #2

UH Collaboration

Innovations

Goal 3

Build a strong advisory council team that can help guide the program in a direction that will fulfill community needs.

ILO alignment

ILO #1

UH Collaboration

Innovations

## 2. Action Plan for Program Improvement

Complete Table 7 to provide justification for Program budget requests

<b>Table 7: Prioritized Top 3 Cost Items (“G” funded requests only)</b>				
(examples given in <i>italics</i> ; delete & replace with Program’s items)				
Budget Categories: P=Personnel; E=Supplies Enhanced; EQ=Equipment (>= \$5k); S1x=Program Review Special Fund;				
Budget Guidelines: Position requests should be listed separately; NO B Budget requests should be included				
<b>Priority</b>	<b>\$ amount &amp; budget category*</b> Except R/M	<b>Best fits which Action Strategies in the Strategic Plan and how? If it does not match to any of the existing Action Strategies, you may write a new one for recommendation.</b>	<b>Addresses which strength or weakness?</b>	<b>If currently grant funded, please explain: put date when funding ends and indicate HawCC commitment to support, if any</b>
<i>1.hire 1 FTE-Faculty</i>	<i>\$38k, P</i>	<i>A full time lecturer would help alleviate the workload while the program builds momentum</i>	<i>W3</i>	
<i>2.Electronic workbenches</i>	<i>\$5k, EQ</i>	<i>The students will have proper storage and of their tools and equipment.</i>	<i>W2</i>	
<i>3.multisim (15 user license)</i>	<i>\$3.7k, EQ</i>	<i>Software that is necessary for schematic layout.</i>	<i>W2</i>	

\*\*Strategic Outcomes Goals and Performance Measures are: A1.1, B4., C1., D3., E2., etc.



3. Use Table 8 to indicate staffing levels.

**Table 8: Staffing**

<b>Faculty/Staff</b>	<b>Number of Positions</b>
Faculty	1
Lecturers	1
APT	0
Clerical	0

## FORMAT FOR ALL PROGRAM REVIEWS

- 1) Font: New Times Roman Font, 12 cpi
- 2) Margins: 1" top, bottom, left, right
- 3) Text Spacing: Single Spaced
- 4) Paragraph spacing: Double Spaced, no indentations
- 5) Page numbers: bottom/center
- 6) Program Review Title and Part Numbers and Titles in Bold
- 7) NO Table of Contents
- 8) NO Appendices
- 9) NO Pictures
- 10) Avoid Headers/Footers (if needed, bottom-left footers only)(0.5)
- 11) Title Page: see Template
- 12) Program Review page length: approx. 8 pages w/out Budget sheets;

### Submission:

Submit one electronic copy to the CERC Chair, suggest PDF format, if possible.

Part I: Insert Annual Program Review

Part II: Complete Attached Comprehensive Program Review Template