

HAWAI‘I COMMUNITY COLLEGE ANNUAL PROGRAM REVIEW (APR)

Electronics Technology

Date: February 15, 2019

**Review Period
July 1, 2017 to June 30, 2018**

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Program/Unit Review at Hawai‘i 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.

PART 1: PROGRAM DATA AND ACTIVITIES

Program Description (required by UH System)

Provide the short description as listed in the current catalog.	This program prepares students for employment in telecommunications, medical electronics, computers, and consumer electronics. The electronic technician fabricates, installs, maintains, and repairs electronic equipment.
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Comprehensive Review information (required by UH System)

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	2014
URL	http://hawaii.hawaii.edu/files/program-unit-review/docs/2014_et_comprehensive_program_review.pdf
Provide a short summary of the CERC's evaluation and recommendations from the program's last Comprehensive Review. Discuss any significant changes to the program that were aligned with those recommendations but are not discussed elsewhere in this report.	In short. The CERC's recommendations were <ol style="list-style-type: none"> 1. Need a permanent instructor. 2. Need to improve the program for industry. 3. Have a person with industry knowledge write the review. Program actions related to CERC's recommendations: <ul style="list-style-type: none"> • Current instructor has been with the program for 4 years. • Program has had 19 coarse and 2 program changes. • Current instructor has 30+ years of industry experienc

ARPD Data: Analysis of Quantitative Indicators (required by UH System)

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

Please attach a copy of the program's data tables and submit with this Annual Program Review (APR).

Analyze the program's ARPD data for the review period.
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Describe, discuss, and provide context for the data, including the program's health scores in the following categories:	
<p>Demand Cautionary</p>	<p>The demand health indicators are CAUTIONARY. The number of jobs indicated by ARPD is 3.</p> <p>However, The electronics industry is vast. Jobs from installation of communications equipment to networking would be difficult to track but are possible for our students. Second, our employer pool may be limited here but the skill sets taught are applicable globally. Last, I would like to submit that employers are beginning to contact us for technicians instead of recruiting from the mainland. I have had 3 phone calls in the last 2 months from PWC looking for 2 technicians, SciTel looking for 2 technicians and a firm from Virginia looking for one technician. The inquiries have been promising as they alone indicate more than 3 jobs availability.</p>
<p>Efficiency Cautionary</p>	<p>The efficiency indicator is CAUTIONARY. The efficiency number is based on a normal fill number of 25. The student to instructor ratio for this program should more realistically be set at 15 to 1. A highly technical program and its courses require more individual attention.</p> <p>When looking at the program enrollment data, the program is growing at an impressive rate. The program started with 2 students and this semester had 10. With aggressive recruiting the program will continue to grow.</p>
<p>Effectiveness Healthy</p>	<p>The effectiveness indicator is Healthy. The program's persistence rate has been very good. The indicator "Fall to Fall" should match or be almost identical to the "Fall to Spring". The error resides in that during the first and third semester the ETRO 120 is taught, but during the first semester there are two ETRO 120 sections taught. One is for the ETRO students and the other is for the EMIT students. During the third semester the ETRO 120 is taught to the EMIT students only. This is where it would appear to be a data problem.</p>
<p>Overall Health Cautionary</p>	<p>The Overall Health indicator is cautionary. With the recent changes to the program, it is on the way to overcome this current condition. The program has demonstrated larger enrollment, more employer inquiries, and good exposure to the public, all of which will help with the continual growth.</p>

Distance Education	N/A
Perkins Core Indicators (if applicable)	<p>The 1p1 and 2p1 data are challenging due to the initial small enrollment numbers. This number is volatile, so just 1 student “not making it” has a huge impact on the statistic.</p> <p>3p1 is accurate. I have good retention in the program.</p> <p>4p1 is difficult to track. Most students leave school do not stay in touch with their instructor and tend to relocate.</p> <p>5p1 and 5p2 demonstrate a reluctance for women to get in this industry. Probably the greatest challenge for these numbers are convincing women that they should be in this industry. Culture is difficult to change.</p>
Performance Funding Indicators (if applicable)	The program is showing good increase in all indicators here and that increase is expected to continue in future years.
What else is relevant to understanding the program’s data? Describe any trends, internal/external factors, strengths and/or challenge that can help the reader understand the program’s data but are not discussed above.	The program has started a period of regrowth. The rate of growth has been very good and the success in connecting with more companies will continue to promote the program. The program has changed in the proper direction of focus on Telecommunications and Process and Controls. These are basically the two types of electronic jobs in general that will be available in the industry to our graduates. Roughly 90% of the work out in the field would fall under these two categories.

PROGRAM ACTIVITIES

Report and discuss all major actions and activities that occurred in the program during the review period, including the program’s meaningful accomplishments and successes. Also discuss the challenges or obstacles the program faced in supporting student success and explain what the program did to address those challenges.

For example, discuss:

- Changes to the program’s curriculum due to course additions, deletions, modifications (CRC, Fast Track, GE-designations), and re-sequencing;
- New certificates/degrees;
- Personnel and/or position additions and/or losses;

- Other changes to the program's operations or services to students.

This past year has been a huge success for the program. The program submitted revisions for all 20 of its Course Outlines of Record and the Program Outline of Record to improve the program's ability to appeal to students and meet industry standards. These revisions were approved by the Curriculum Review Committee, the Academic Senate, and Administration and were implemented in Fall 2018 and are reflected in the AY18-19 Catalog.

- ETRO 120 – Requisite and prerequisite requirements and updating curriculum.
- ETRO 120L – Requisite and prerequisite requirements and updating curriculum.
- ETRO 121 – Requisite and prerequisite requirements and updating curriculum.
- ETRO 121L – Requisite and prerequisite requirements and updating curriculum.
- ETRO 122 – Requisite and prerequisite requirements and updating curriculum.
- ETRO 122L – Requisite and prerequisite requirements and updating curriculum.
- ETRO 143 – Requisite and prerequisite requirements and updating curriculum.
- ETRO 143L – Requisite and prerequisite requirements and updating curriculum.
- ETRO 257 – Requisite and prerequisite requirements and updating curriculum.
- ETRO 280 – Requisite and prerequisite requirements and updating curriculum.
- ETRO 266 – Requisite and prerequisite requirements and updating curriculum.
- ETRO 287 – Requisite and prerequisite requirements and updating curriculum.
- ETRO 287L – Requisite and prerequisite requirements and updating curriculum.
- ETRO 160 – Retired
- ETRO 166 – Retired
- ETRO 140 – Created for ETRO to be cross referenced to CENT 140
- ETRO 240B – Created for ETRO to be cross referenced to CENT 240B
- ETRO 240C – Created for ETRO to be cross referenced to CENT 240C
- ETRO 241 – Created for ETRO to be cross referenced to CENT 241
- Removed optics certificate

The Program is in a constant state of modification to keep it more efficient and appealing to industry. The program has been able to get more employers willing to participate with our educational development. Companies like SciTel and PWC have shown interest in forming internships for our students. The internships with PISCES and Akamai have been very successful and have produced great opportunities for the students. This year the students will be participating at the Robotic Mining Competition in Florida at the Kennedy Space Center. Caterpillar and NASA are the primary sponsors. The ETRO students will be participating in an international competition here on Hawaii island as well.

The program has acquired some funding through the Perkins grant that was very helpful. The funding provided the program with new Tecktronix oscilloscopes, signal generators, Siemens 1200 series PLC's, HMI's and supporting software.

PROGRAM WEBSITE

Has the program recently reviewed its website? Please check the box below that best applies and follow through as needed to keep the program's website up-to-date.

X Program faculty/staff have reviewed the website in the past six months, no changes needed.

Program faculty/staff reviewed the website in the past six months and submitted a change request to the College's webmaster on _____ (date).

Program faculty/staff recently reviewed the website as a part of the annual program review process, found that revisions are needed, and will submit a change request to College's webmaster in a timely manner.

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>

PART 2: PROGRAM ACTION PLAN

AY18-19 ACTION PLAN

Provide a detailed narrative discussion of the program's overall action plan for AY18-19, based on analysis of the Program's AY17-18 data and the overall results of course learning outcomes assessments conducted during the AY17-18 review period. This Action Plan should identify the program's specific goals and objectives for AY18-19 and must provide benchmarks or timelines for achieving each goal.

This year's plan is to :

- Establish a time line that is achievable for assessment of courses and follow ups.
- More modifications will have to be done to create an A.S. Degree.

- Alignment with Maui College should be finalized this year for the B.S. degree. Currently in process still trying to work with UH on a 2+2 pathway as well, which the A.S. change will help.
- Recruiting is a continuing pursuit as well.
- Finally, construction of a lab that will make us proud. The goal is to create a fiber optic, a wired, and a wireless network in the lab to create interconnectivity to various controllers. This would be a demonstration of our student's ability to handle varied technical opportunities.

ACTION ITEMS TO ACCOMPLISH ACTION PLAN

For each Action Item below, describe the strategies, tactics, initiatives, innovations, activities, etc., that the program plans to implement in order to accomplish the goals described in the Action Plan above.

For each Action Item below, discuss how implementing this action will help lead to improvements in student learning and their attainment of the program's learning outcomes (PLOs).

Action Item 1:

Develop a plan or schedule for assessment that really works in consultation with the Institutional Assessment Coordinator. This is key for continuous monitoring. Unrealistic scheduling is certain failure.

PLO #6

Action Item 2:

Program modifications will include some CLO and PLO modifications prior to the A.S. move. This change will allow students to move their credits to other universities abroad. This should help with aligning to UH and others.

PLO #6

Action Item 3: Recruiting is very important to the success of the program. Recruiting down into the elementary years is the starting point. Exposure at an early age can't hurt. Continuing recruiting on Oahu as well.

PLO #1

Action Item 4:

Create a fiber optic, a wired, and a wireless network in the lab to create interconnectivity to various controllers. This will take a considerable amount of time and money.

PLO#6

RESOURCE IMPLICATIONS

<p>NOTE: General “budget asks” are included in the 3-year Comprehensive Review. Budget asks for the following three categories only may be included in the APR: 1) health and safety needs, 2) emergency needs, and/or 3) necessary needs to become compliant with Federal/State laws/regulations.</p>

BUDGET ASKS

For budget ask in the allowed categories (see above):	
Describe the needed item(s) in detail.	<p>Our main cost would be in cable trays, floor racks, and fiber cable trays. These devices keep cabling off the floor eliminating trip hazards. These devices are required by OSHA for a safe work environment.</p> <p>This is a health and safety budget item.</p>
Include estimated cost(s) and timeline(s) for procurement.	The estimated costs would be approximately \$5000. The time line would be determined by when we can get back into the renovated building.
<p>Explain how the item(s) aligns with one or more of the strategic initiatives of <u>2015-2021 Strategic Directions</u>:</p> <p>http://hawaii.hawaii.edu/sites/default/files/docs/strategic-plan/hawcc-strategic-directions-2015-2021.pdf</p>	<p>HGI strategy #3 workforce needs. This lab would be applicable to telecommunications company as well as any company using Process and Controls. This would also promote Hawaii Innovation Initiative for better paying jobs. Furthermore, this would promote the safety for the 21st Century Facilities environment.</p>

PART 3: LEARNING OUTCOMES ASSESSMENTS

For all parts of this section, please provide information based on CLO (course learning outcomes) or PLO (program learning outcomes) assessments conducted in AY17-18.

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 (if applicable) from an organization granting certification/accreditation in the program’s industry/profession. If the program/degree/certificate does not have a certifying body, you must submit evidence of the program’s advisory committee’s/board’s recommendations for approval of, and/or participation in the program’s assessment(s).

Please attach copy of industry validation for the year under review.

Courses Assessed

List all program courses assessed during AY17-18, including Initial and “Closing the Loop” assessments.			
Assessed Course Alpha, No., & Title	Semester assessed	CLOs assessed (CLO#s)	PLO alignment (PLO#s)
ETRO 257	FALL 2017	CLO1: Demonstrate an understanding of basic concepts of analog and digital radio.	ETRO PLO 1

Assessment Strategies

<p>For each course assessed in AY17-18 listed above, provide a brief description of the assessment strategy, including:</p> <ul style="list-style-type: none"> • a description of the type of <u>student work or activity assessed</u> (e.g., research paper, lab report, hula performance, etc.); • a description of <u>how student artefacts were selected for assessment</u> (e.g., the assessment included summative assignments from all students in the course, <u>OR</u> a sample of students’ summative assignments was randomly selected for assessment based on a representative percentage of students in each section of the course); • a brief discussion of the <u>assessment rubric/scoring guide</u> and the criteria/categories and standards used in the assessment.
<p>Course Alpha/#: ETRO 257</p> <p>Analysis will be done using a Final Exam. The exam will consist of a MCW Site Budget, demonstrate knowledge based fundamentals of Mixers, Duplexors, Wave Propagation and basic block radio system.</p>

Expected Levels of Achievement

For each course assessed in AY17-18 listed above, state the standard (benchmark, goal) for student success for each CLO assessed AND the percentage of students expected to meet that standard for each CLO.

Example: “CLO#1: The standard for student success is that students will answer 80% of the questions on the final exam related to CLO#1 correctly. The expectation is that 85% of students will meet this standard for CLO#1.”

Example: “CLO#4: The standard for student success is that students will be able to perform skills associated with CLO#4 with 80% proficiency. The expectation is that 75% of students will meet this standard for CLO#4.”

Assessed Course Alpha, No., & Title	Assessed CLO#	Standard for Success	% of Students Expected to Meet Standard
ETRO 257	CLO 1	85% = Met Standard	75% of students expected to meet standard.

Results of Course Assessments

For each course assessed in AY17-18 listed above, provide:

- a statement of the quantitative results;
- a brief narrative analysis of those results.

Course Alpha/#: ETRO 257

Exceeded 71.43% Number at this level: 5
 Met 0% Number at this level: 0
 Partially Met 28.57% Number at this level: 2
 Not Met 0% Number at this level: 0

1) There are a total of 7 students. There were 3- 100%s, 2- 90%+, 1- 71%, and 1- 67%. The ideal number is 85%. The overall grade is composed of quizzes and final. Though the final indicated 2 students were falling short of expected goal they demonstrated in class a reasonable working knowledge.

2) The course is lacking more time. I think I need to revisit how much more time is needed. One problem were holidays were impacting significantly the amount of class time. We lost 3 days of class due to holidays. Generally I was good with the outcome all seemed to get the critical information. Modulation techniques, site budget, and wave propagation all were understood well.

Other Comments

Include any additional information that will help clarify the program's course assessment results, successes and challenges.

Discuss, if relevant, a summary of student survey results, CCSSE, e-CAFE, graduate-leaver surveys, special evaluations, or other assessment instruments that are not discussed elsewhere in this report.

Next Steps – ASSESSMENT ACTION PLAN for AY18-19

Describe the program's intended next steps to improve student learning, based on the program's overall AY17-18 assessment results.

Include any specific strategies, tactics, activities or plans for improvement in program or course assessment practices, methods or tools, rubrics, schedules, etc.

This next semester the plan is to assess ETRO 122 and 122L This will be a good group to assess. Many students' lack of experience with tools is a predominant factor holding back their success. The challenge will be to instill in the students the proper safety concepts.

PART 4: ADDITIONAL DATA

Cost Per SSH (to be provided by Admin)

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 = \$ _____

External Data*

If your program utilizes external licensures, enter:

Number sitting for an exam _____

Number passed _____

***This section applies to NURS only.**