

ANNUAL
REPORT OF PROGRAM DATA

2022

UNIVERSITY of HAWAII
KAUAI
COMMUNITY COLLEGE



Electronics Technology

1. Program or Unit Description

The Program's mission is to produce graduates who are technically competent, can communicate and work with others effectively, demonstrate responsible citizenship, leadership and an awareness of the global context of their work.

The graduates of this program serve the technology needs of this island. The program is the only source of technical training on the island and it therefore serves a vital role in the community. Graduates are employed by subcontractors to the Navy Base, PMRF, or by local employers such as Pacific Communications, ASCM, Spectrum, Hawaii Telecom, Xerox, and various computer and IT positions needed in commerce or tourism. (These are the employers of the past four years.) The demand for graduates is greater than the current supply, with students often being hired before they graduate. The program provides a broad training which includes electronics, mechanics, programming, and networking.

2. Analysis of the Program/Unit

Demand indicators provided by the UH system with one CIP code state 0 (zero) county prorated job is available, and the program Needs Attention. This is an inaccurate count of jobs available as the State and County has a shortage of employees available to fill vacant positions and relying on county jobs only provides insufficient data to assess true local demand. This program maintains contact with graduates and local employers, so the program is able to report that all the graduates get employed. Furthermore, the local high tech employers come to the program building and try to recruit students for technician positions even before they graduate. The demand is far greater than the number of students graduating from the program. For example, the prior ARPD reported 20 technician openings, and for this ARPD at least 10 requests for technicians can be documented. This program believes the Needs Attention indicator for Demand is inaccurate.

Efficiency Indicator is healthy, because enrollment has maintained a stable number for the past three years and Majors to FTE BOR Appointed Faculty has increased from 9 to 21 in 2020/21 and 20 in 2021/22. There also has been a reduction in FTE BOR appointed faculty from 2 to 1. This may indicate financial healthiness, but is not sustainable.

The 2019-20 year was the last year with two instructors. One instructor retired and no replacements were permitted during the pandemic. Only having one instructor created a strain on the program, the sole instructor, and the students that forced students to take some classes as distance education. At the end of Spring 2022 the last FTE faculty resigned as a result of burn out running the program by herself. Since there is no replacement for hands-on education, which is required to teach electronics, forcing distance classes has lowered the quality of the education and the control on the program learning outcomes. Furthermore, the program is at risk as finding lecturers has been very difficult, if not impossible (see Fall 2021), and this program cannot be sustained with only lecturers. The program is currently in the process to hire a FTE faculty with a Tenure Track position, but will also need the second FTE position as a Non-Tenure Track with the option to convert to a Tenure Track position.

Effectiveness indicator is healthy as the successful completion rate increased from 79% in 2020/21 to 86% in 2021/22, and Persistence Fall to Fall also increased from 45% in 2020/21 to 58% in 2021/22. Degrees, Certificates of Achievement, and Other Certificates have also increased in the past year.

Perkins Indicators in 1P1 and 2P1 has surpassed the goals set and Performance indicators have also surpassed previous years in Number of Degrees and Certificates; Number of Certificates in STEM; and Number of Transfers to UH 4-yr.

<https://uhcc.hawaii.edu/varpd/index.php?y=2022&c=KAU&t=CTE&p=2604>

3. Program Student Learning Outcomes or Unit/Service Outcomes

- a) List of the Program Student Learning Outcomes or Unit/Service Outcomes
 - a. Demonstrate analysis, design, and measuring of digital circuits and digital logic fundamentals.
 - b. Demonstrate practical knowledge of computer hardware, software, and operating systems.
 - c. Develop skill with algorithmic thinking and demonstrate computer programming language fundamentals such as variables, decision structures, conditional statements, data types and data structures, iterations, and functions.
 - d. Demonstrate building and configuring internet networks.
 - e. Demonstrate theoretical and applied knowledge of passive and active electronics components and circuits used in DC and AC electronics.
 - f. Demonstrate soldering, de-soldering, circuit board layout, circuit board fabrication, cable and connector fabrication, electronic component identification and associated test and measurement principles.
 - g. Understand and safely apply the physics of light, laser safety, geometric optics, lenses, mirrors, polarizing lenses, interference/diffraction waves, laser physics, optical imaging.
 - h. Communicate effectively orally, in writing, and by means of the various electronic communication devices.

- b) Program or Unit/Service Outcomes that have been assessed in the year of this Annual Review. PSLOs e, f, and g are assessed in this review.

Assessment Results.

The courses which map to the PSLOs were examined for checking the achievement of the Program Learning Objective. An objective is considered met if students overall achieved 70% of the objective. The results are summarized below.

PSLO	Course mapping	% of students achieving > 70%	PSLO met/unmet
e	ETRO 105 and 106	91 to 100	met
f	ETRO 101	75	met
g	ETRO 161	91	met

- c) Changes that have been made as a result of the assessment results.
No changes are being made. Upon examination of the course details, the reason students do not make the objective is they failed to complete the course or the assessments. Those who generally complete all the assessments generally achieved the objective.

4. Action Plan

The action plan is always to improve recruiting of students, since the program enrollment is not meeting the graduation needs of the community. The program does not have high enrollment, and students at the high schools are not aware of this lucrative career path. Yet, the students are in very high demand from the local employers, often being hired before they graduate. An action plan needs to include marketing and education to the high schools to improve enrollment. This will also likely improve Perkins core indicators. However, currently with only lecturers, grant writing and implementation, as well as marketing efforts, remain challenging.

It is unclear if two instructors will teach this program in the future, due to the hiring freeze and difficulty hiring a FTE position even with the advertisement currently open. Lecturers are currently teaching all courses that are offered, but there is no program coordinator and the Division Chair is doing his best to coordinate with the lecturers to run the program. A FTE instructor must be hired immediately and a second instructor is needed to effectively run the program. Just hiring lecturers is also insufficient, as lecturers usually just teach their courses and leave, and they do not contribute to overall program maintenance.

5. Resource Implications

Both a FTE Tenure Track instructor and a second FTE Non-Tenure Track instructor are needed for this program. The course teaching load is too heavy and the maintenance of the program resources (test and measurement equipment, fabrication equipment) is too time consuming for one instructor. The previous FTE instructor had already resigned as a result of non support in the past year doing everything by herself, instead of having the 2nd instructor position filled to help run the program.

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

6. Optional: Edits to Occupation List for Instructional Programs

Review the Standard Occupational Classification (SOC) codes listed for your Instructional Program and verify that the occupations listed align with the program learning outcomes. Program graduates should be prepared to enter the occupations listed upon program completion. Indicate in this section if the program is requesting removal or additions to the occupation list.

I am requesting changes to the SOC codes/occupations listed for my program/unit.