# 2020
## ANNUAL REVIEW OF PROGRAM DATA

Electronics Technology

UNIVERSITY of HAWAIʻI®
KAUAʻI
COMMUNITY COLLEGE

# 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 three 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

A discussion the Program's strengths and areas to improve in terms of Demand, Efficiency, and Effectiveness based on an analysis of the program's Quantitative Indicators or comparable unit-developed measures or program-developed metrics follows.

Demand indicators provided by the UH system with one CIP code state 1 (one) county prorated job is available. But, by remaining in contact with graduates and local employers, 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, more than 20 requests for electronics technicians have been received in the past year. This program believes the Unhealthy indicator for Demand is inaccurate.

Efficiency indicator of Cautionary depends on fill rate and majors to FTE BOR appointed faculty. The program fill rate is 60%, which is improved from the prior year. The program would need to fill approximately two more seats to achieve a healthy rating of 75%, or approximately two more students.

Effectiveness Indicator is has dropped to Cautionary this year. This is due to lower number of degrees awarded.  Number of degrees awarded tends to cycle up and down on alternating years for this program.

All Perkins Core Indicators show Technical Skills Attainment and Placement are met. Non-trad remains a difficult indicator to meet, but the program's actuals are in line with mainland schools for Electronics Technology.

The 2019 -20 year is the last year with two instructors. One instructor has now retired and no replacements are permitted during the pandemic.

Health Indicators are shown below.

| | Demand Indicators | 2017 - 18 | 2018 - 19 | 2019 - 20 | Demand Health |
|---|---|---|---|---|---|
| 1. | New & Replacement Positions (State) | 80 | 72 | 72 | |
| *2. | New & Replacement Positions (County Prorated) | 1 | 1 | 1 | |
| 3. | Number of Majors | 20 | 16 | 17 | |
| 3a. | Number of Majors Native Hawaiian | 4 | 5 | 4 | |
| 3b. | Fall Full-Time | 27% | 22% | 58% | |
| 3c. | Fall Part-Time | 73% | 78% | 42% | |
| 3d. | Fall Part-Time who are Full-Time in System | 0% | 6% | 0% | **Unhealthy** |
| 3e. | Spring Full-Time | 33% | 50% | 47% | Insufficient Data |
| 3f. | Spring Part-Time | 67% | 50% | 53% | County Level |
| 3g. | Spring Part-Time who are Full-Time in System | 0% | 0% | 7% | |
| 4. | SSH Program Majors in Program Classes | 159 | 167 | 176 | |
| 5. | SSH Non-Majors in Program Classes | 67 | 85 | 87 | |
| 6. | SSH in All Program Classes | 226 | 252 | 263 | |
| 7. | FTE Enrollment in Program Classes | 8 | 8 | 9 | |
| 8. | Total Number of Classes Taught | 12 | 11 | 9 | |

| | Efficiency Indicators | 2017 - 18 | 2018 - 19 | 2019 - 20 | Efficiency Health |
|---|---|---|---|---|---|
| 9. | Average Class Size | 8 | 8 | 9 | |
| *10. | Fill Rate | 50% | 54.5% | 60% | |
| 11. | FTE BOR Appointed Faculty | 2 | 2 | 2 | |
| *12. | Majors to FTE BOR Appointed Faculty | 10 | 8 | 9 | |
| 13. | Majors to Analytic FTE Faculty | 10 | 8 | 9 | |
| 13a. | Analytic FTE Faculty | 1 | 1 | 1 | |
| 14. | Overall Program Budget Allocation | | | | **Cautionary** |
| 14a. | General Funded Budget Allocation | | | | |
| 14b. | Special/Federal Budget Allocation | | | | |
| 14c. | Tuition and Fees | | | | |
| 15. | Cost per SSH | | | | |
| 16. | Number of Low-Enrolled (<10) Classes | 9 | 5 | 5 | |

| | Effectiveness Indicators | 2017 - 18 | 2018 - 19 | 2019 - 20 | Effectiveness Health |
|---|---|---|---|---|---|
| 17. | Successful Completion (Equivalent C or Higher) | 86% | 92% | 88% | |
| 18. | Withdrawals (Grade = W) | 1 | 0 | 0 | |
| *19. | Persistence Fall to Spring | 67% | 69% | 67% | |
| 19a. | Persistence Fall to Fall | 45% | 62% | 44% | |
| *20. | Unduplicated Degrees/Certificates Awarded | 10 | 11 | 10 | |
| 20a. | Degrees Awarded | 2 | 5 | 2 | |
| 20b. | Certificates of Achievement Awarded | 1 | 5 | 1 | Cautionary |
| 20c. | Advanced Professional Certificates Awarded | 0 | 0 | 0 | |
| 20d. | Other Certificates Awarded | 12 | 10 | 15 | |
| 21. | External Licensing Exams Passed [1] | | | | |
| 22. | Transfers to UH 4-yr | 1 | 0 | 3 | |
| 22a. | Transfers with credential from program | 1 | 0 | 1 | |
| 22b. | Transfers without credential from program | 0 | 0 | 2 | |

[1] Campus to include in program analysis if applicable.

| | Perkins Indicators | Goal | Actual | Met | |
|---|---|---|---|---|---|
| 29. | 1P1 Technical Skills Attainment | 94.75 | 100 | Met | |
| 30. | 2P1 Completion | 61 | 55.56 | Not Met | |
| 31. | 3P1 Student Retention or Transfer | 86 | 70 | Not Met | |
| 32. | 4P1 Student Placement | 66.75 | 77.78 | Met | |
| 33. | 5P1 Nontraditional Participation | 23.75 | 14.29 | Not Met | |
| 34. | 5P2 Nontraditional Completion | 23.25 | 20 | Not Met | |

# 3. Program Student Learning Outcomes or Unit/Service Outcomes

a) List of the Program Student Learning 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, desoldering, 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.

    i.   Exhibit professional, ethical, and social responsibilities showing a respect for diversity and an awareness of contemporary professional, societal, and global issues.

b) The PSLOs are all new this year, as all the old PSLOs were broad and generic and did not lend themselves to present assessment requirements and style (i.e. on the program level). They have been rewritten to permit program assessment beginning this year.
c) Assessment Results. See )b
d) Prior year assessment indicated that the PSLOs needed to be rewritten to permit assessment on the program level. This is now in place. At the end of this year a PSLOs a,e,f,g,h, and i will be assessed.

# 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. Current grant writing activities are geared towards early college classes, which may help boost enrollment in this program. However, with only one instructor, grant writing and implementation, as well as marketing efforts, remain challenging.

This year students with NASA sponsored internships will (covid permitting) put a science payload in space on the RockSatX program. When the payload is recovered, video from space will be used to encourage enthusiasm and recruitment. Projects such as these provide valuable real life experiences for the students. More projects may help future enrollment.

It is unclear if two instructors will teach this program in the future, due to the pandemic. With this in mind, courses are now being shared across the system. While necessary, increasing on-line delivery lowers the quality of education for this program. These are uncertain times, with uncertain outcomes.

# 5. Resource Implications

Detail any resource requests, including reallocation of existing resources (physical, human, financial)

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