

HAWAI'I COMMUNITY COLLEGE COMPREHENSIVE PROGRAM REVIEW (CPR)

Information Technology (IT)

Date: January 15, 2019

**3-Year Review Period:
July 1, 2015 to June 30, 2018
AY15-16, AY16-17 and AY17-18**

**Initiator: Anne Chung
Writer(s): Carrie Butler**

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 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 I: PROGRAM DATA AND ACTIVITIES

Program Description

<p>Provide the short program description as listed in the current catalog.</p> <p>The Information Technology program is a career-laddered, competency-based program that provides training in the use and support of business-related computer systems, data communication networks (including local area networks), and the development of business computer information systems programs using procedural, event-driven and object-oriented programming techniques.</p> <p>The program includes a combination of business, computer, and information technology courses. Campus-based computer and networking projects, faculty supervised laboratories, and workplace internships provide hands-on experience designed to prepare students for positions in computer support, programming, network administration, or systems development in a business information technology system. The program focuses on computers and information technology as tools to solve business problems.</p>

Previous Comprehensive Program Review Information

<p>Provide the year and URL for the location of this program’s last Comprehensive Program Review on the HawCC Program/Unit Review website: http://hawaii.hawaii.edu/files/program-unit-review/</p>	
Year	2015
URL	http://hawaii.hawaii.edu/files/program-unit-review/docs/2015_it_comprehensive_program_review.pdf
<p>Provide a short summary of the CERC’s evaluation and recommendations from the program’s last Comprehensive Review.</p> <p>Discuss any significant changes to the program that were aligned with those recommendations</p>	<p>Recommend that you actively continue with your recruitment and retention efforts to support your student body and positively increase your graduating majors.</p> <p>The program coordinator during this time increased recruitment efforts at local high schools to increase enrollment. Enrollment for the first year, first semester cohort in Fall 2017 was at full capacity. We will continue to look at retention and implement tutoring for difficult classes.</p>

<p>but are not discussed elsewhere in this report.</p>	<ul style="list-style-type: none"> ● Consider if creating a pathway to the UH four-year degree program is worthwhile for the IT program. <p>We will be looking at this in the future. Some jobs do require a bachelors' degree and having a pathway will be helpful.</p>
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ARPD DATA: Analysis of Quantitative Indicators

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 for the three years under review and submit with this Comprehensive Program Review (CPR).

<p>Analyze the program's ARPD data for the 3-year review period.</p>
<p>Describe, discuss, and provide context for the program's AY16 through AY18 data, including the program's health scores in the Demand, Efficiency, Effectiveness and Overall Health categories.</p> <p>The program moved from an overall cautionary health rating in AY16 to a healthy rating in AY18. One issue with the demand is the use of a single occupational code for jobs while IT graduates can go to work in many different areas. The demand is rated healthy for AY18. Efficiency remains cautionary due to an average class size of 12. The higher-level courses tend to have less students than beginning classes and there is a limit due to the number of computers and equipment. We will continue to focus on recruitment and retention for higher class sizes. In addition, starting with AY19 we are offering distance education courses with higher enrollment that can bring the average class size up. The effectiveness health rating has been healthy for all three years.</p>

<p>Describe, discuss, and provide context for the program's data in the Distance Education, Perkins Core Indicators, and Performance Funding Indicators categories, as applicable.</p> <p>There were no distance education classes offered during the years for this report. The program's first distance class will be offered AY19. The 1P1 goal was not met, but it did increase over the three-year period. The 2P1 completion goal was met. The 3P1 goal for retention or transfer was not met but was close. The 4P1 indicator for placement increased but it was still not high enough to meet the goal. As a program we will start tracking graduates to ensure correct numbers. Both 5P1 and 5P2 increased over the three-year period and met the goals. The number of degrees and certificates went down during AY18, but the data might not be correct for the report.</p>
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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 for the three years under review that are not discussed above.

The program has been working on recruitment efforts, but there is a limit to the amount of recruiting that can be done due to only one full-time faculty member.

Overall, enrollment at colleges is down due to a strong economy. There is a strong job market for program graduates, but it is not reflected completely in the Demand category due to the use of a single occupational code.

Program Activities

Report and discuss all major actions and activities that occurred in the program during the 3-year 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 has done 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

The IT Program added a new cybersecurity Certificate of Competence (IT-ISA-CO) in Information Security and Assurance in AY16. The CO included two new courses, ICS 281 Ethical Hacking and ICS 282 Digital Forensics. In AY17 several courses had course name changes and the number of credit hours changed to make the courses standardized through the UH system. In AY18 changes to the program were proposed that will be reflected in AY19. These changes will allow for better transfer pathways to a four-year degree at UH Hilo.

The long-term full-time tenured faculty member/program coordinator retired at the beginning of AY18. A full-time instructor/program coordinator was hired in AY18 that is new to the school and to the island.

LEARNING-OUTCOMES ASSESSMENTS

For assessment resources, please see the [HawCC ASSESSMENT](#) website. Submitted course assessment reports can be accessed on the Campus Labs OUTCOMES system via the [Campus Labs Resources page](#) and the [HawCC Course Reports ARCHIVE](#) .

- The program faculty/staff have reviewed the program record on Kualii KSCM and hereby affirm that all information, including all program learning outcomes (PLOs), are correct.
- The program faculty/staff have reviewed the program record on Kualii KSCM and have found that all or some information is incorrect and hereby affirm that the program will submit proposal(s) for revision(s), as appropriate.
- Kualii KSCM: <https://hawaii.kualii.co/cm/#/courses>

If the program's information on Kualii KSCM needs revision (for example, program description, entry or completion requirements, PLOs), program faculty may propose revision through the Curriculum Review Committee or Fast Track processes, as appropriate. Both types of revision proposals may be submitted via Kualii.

Program Learning Outcomes (PLOs)

List the Program Learning Outcomes (PLOs) as recorded on Kualii KSCM and indicate each PLO's alignment to one or more of the Institutional Learning Outcomes (ILOs). The College's ILOs may be found on the [HawCC ASSESSMENT](#) website.

PLO#	Program Learning Outcomes (text)	Aligned to ILO #
1	IT PLO1: Information Systems - Plan, develop, and implement the hardware, software, and procedural components of a data processing system in a business environment.	1,2,3,4,5,6
2	IT PLO2: Networking - Plan, develop, and implement the hardware, software, and procedural components of a data communications system in a business environment.	1,2,4,5,6
3	IT PLO3: Programming - Plan, develop, implement, and document computer programs that meet the data processing requirements of a business organization.	1,2,3,4,5,6

4	IT PLO4: Productivity - Work independently and cooperatively to deliver reports, programs, projects, and other deliverables that document a business organization's information technology requirements.	1,2,3,4,5,6
5	IT PLO5: Legal/Ethical/Professional - Base decisions and actions on the legal, ethical, and professional guidelines and practices of the information technology field.	1,2,3,4,5,6
6	IT PLO6: Explore - Demonstrate the ability to search, analyze, and synthesize current information and solutions in the rapidly changing information technology profession.	1,2,3,4,5,6

Discuss the program's successes and challenges in helping program majors achieve its overall Program Learning Outcomes (PLOs).

Include a summary discussion of the results of any PLO assessments voluntarily undertaken by the program's faculty.

While a formal assessment of the program learning outcomes was not conducted, the faculty member reviewed the PLOs to make sure they were still relevant for the constantly changing IT field. Each of the PLOs are good indicators of what graduates of the IT program should know. Assessment was conducted for the course learning outcomes which align to the program learning outcomes to ensure that both the PLOs and CLOs are adequately covered in each class.

Aggregate PLO results from CLO assessments demonstrate that a high percentage of assessed students, approximately 82%, are meeting or exceeding faculty's expectations for success across all aligned PLOs. The screenshot below of the program's aggregate CLO results for AY17-18 graphically illustrates this high average level of successful student learning.

The screenshot displays the OMS interface for Information Technology. The sidebar on the left lists organization units and courses. The main content area shows six Program Learning Outcomes (IT_PLO1 to IT_PLO6) with their descriptions and progress bars. The progress bars are color-coded: red for 'Not Assessed', yellow for 'Assessed', and green for 'Assessed'.

Program Learning Outcome (PLO)	Description	Assessment Status
IT_PLO1	IT PLO1: Information Systems - Plan, develop, and implement the hardware, software, and procedural components of a data processing system in a business...	Assessed
IT_PLO2	IT PLO2: Networking - Plan, develop, and implement the hardware, software, and procedural components of a data communications system in a business env...	Assessed
IT_PLO3	IT PLO3: Programming - Plan, develop, implement, and document computer programs that meet the data processing requirements of a business organization.	Assessed
IT_PLO4	IT PLO4: Productivity - Work independently and cooperatively to deliver reports, programs, projects, and other deliverables that document a business o...	Assessed
IT_PLO5	IT PLO5: Legal/Ethical/Professional - Base decisions and actions on the legal, ethical, and professional guidelines and practices of the information t...	Assessed
IT_PLO6	IT PLO6: Explore - Demonstrate the ability to search, analyze, and synthesize current information and solutions in the rapidly changing information te...	Assessed

Course Learning Outcomes (CLOs) Assessed

List all program courses (alpha/#/title) that were assessed during the 3-year review period.

AY16:

ITS 215, Network Administration

AY17:

ITS 108 Computer Software Support

ICS 284 Data Comm Fundamentals

AY18:

ICS 281 Ethical Hacking

ITS 103 Introduction to Programming Process

Discuss and summarize the overall results of course assessments conducted during the 3-year review period, focusing on students' achievement of Course Learning Outcomes (CLOs). Describe how the program's faculty/staff used course assessment results to plan for and implement improvements in student learning, and analyze the effects on students' learning of implementing those improvements.

Assessing the listed courses over the 3-year review period was beneficial to find out if most students are achieving the desired success rate for CLOs and PLOs. The course assessment process enables teachers to find out if there any CLOs that are not doing as well as others so that more time and attention can be given to those in the classroom.

Most of the courses will have updates to changing the curriculum in the next 3-year period and for implementing TCZ. Because of this, the assessment schedule will be changed and courses will need to be assessed again. We will be able to use the results from past assessments to help develop the new course materials.

PART II: 3-YEAR ACTION PLAN & RESOURCE ALLOCATIONS

Resource Gap Analysis

Describe the program's current resources and resource needs in each category below.

Resource Category	Resources the program needs to operate effectively:	Resources the program already has:	What is the program's resource gap?
A. Personnel			
1) Positions (Functions)	2 FTE Faculty Additional lecturers Part-time lab assistant	1 FTE Faculty Additional lectures	1 FTE Faculty Part-time lab assistant
2) Professional Development	Professional conferences, travel expenses, and training	Some money is available for professional development	Support for professional development opportunities
B. Operating Resources			
1) Supplies	Annual need for lab items such as cable ends and thermal paste	A small annual budget	If the budget is not already taken by travel, meetings, and hardware there is enough for supplies
2) Contracts	Annual renewal of MSDN license	A small annual budget	Money for renewal of MSDN license
3) Equipment			
4) Space and Facilities			
C. Technology			

1) Hardware	Routers, switches, and cables for ITS 124 and ITS 221. Cable testers and hardware tools for ITS 104.	Some cable testers and hardware tools for ITS 104.	Routers, switches, and cables for ITS 124 and ITS 221. Cable testers and hardware tools for ITS 104.
2) Apps or Software			
3) Tech Support			
4) Tech-related Professional Development			
5) Tech labs / facilities			

Action Plan

Where are you going? How are you going to get there?

Provide a brief narrative of your overall Action Plan for the next 3 years. Focus on how this Action Plan will help improve student success. Describe how this Action Plan can help the College achieve our Initiatives in the *Strategic Directions 2015-2021* plan.
<http://hawaii.hawaii.edu/sites/default/files/docs/strategic-plan/hawcc-strategic-directions-2015-2021.pdf>

Over the next 3 years the IT program would like to increase recruitment and retention efforts, update curriculum to be relevant and make education materials free to students, and improve pathways for students to continue their education.

For HGI Action Strategy 1, the IT program will increase efforts to work with local schools to recruit new students at events such as career fairs. We will continue to offer the Girls Who Code free program to work with middle and high school girls and get them interested in the IT field. The program will explore early college or other ways to create a pipeline with the high schools.

For HGI Action Strategy 2, the IT program will work to strengthen the pathways for students to move beyond the AS degree and work towards higher education.

For HGI Action Strategy 3, the IT program will work with the advisory board, internship hosts, and other members of the community to ensure relevancy with the curriculum materials. In addition, the program will explore non-credit to credit pathways such as offering an IT industry certification course.

Action Items

Provide details below for each Action Item needed to accomplish this 3-Year Action Plan.

Action Item 1:

What specific strategies, tactics, initiatives, innovations and/or activities will the program implement to accomplish one or more of the goals described in the 3-year Action Plan above?

The IT program would like to increase the average class size, major count, and number of graduates. We will be working on recruitment and retention to achieve this goal. In addition, we will be offering distance education courses to help raise the average class size.

How will implementing this Action Item help lead to improvements in student learning and their attainment of the program's learning outcomes (PLOs) over the next 3 years?

Increasing the number of students in our classes will allow for a more diverse classroom and will increase the pathways in the community. Working on retention efforts will help students achieve the course PLOs. Offering online classes will broaden the number of students that can take classes.

Budget & Resource Asks: Describe in detail any additional or reallocated resources that will be needed to accomplish this Action Item. *If no additional or reallocated resources are required to accomplish this Action Item, enter "N/A" below.*

Provide justification why this resource is necessary to accomplish this Action Item and the program's Action Plan.

Include the total cost and timeline for purchase or re-allocation.

To improve recruitment, marketing materials are requested in the amount of \$2000 to be used at high school career fairs and other events.

The requested part-time lab assistant position would help with retention of students because the computers would always be available and working. The computers in the lab classroom are now under our control rather than the college IT department and the burden of maintaining the equipment and software falls to the full-time faculty member.

A second full-time faculty member could help with recruitment and retention efforts. The courses in the IT program require a large range of changing skills and it is difficult for one person to keep up.

Action Item 2:

What specific strategies, tactics, initiatives, innovations and/or activities will the program implement to accomplish one or more of the goals described in the 3-year Action Plan above?

The IT program will be reviewing all curriculum to see if updates need to be made to be relevant to community needs and to ensure pathways for ongoing education. In addition, we would like to make all courses within the program TCZ (textbook cost zero).

How will implementing this Action Item help lead to improvements in student learning and their attainment of the program's learning outcomes (PLOs) over the next 3 years?

Making sure the curriculum is relevant benefits the students because they will gain the skills employers are looking for. Having a good pathway to a four-year degree will improve the salary potential and marketability for students. Moving to TCZ for all courses will help students afford class and ensure that they have the materials when needed to help with their success.

Budget & Resource Asks: Describe in detail any additional or reallocated resources that will be needed to accomplish this Action Item. *If no additional or reallocated resources are required to accomplish this Action Item, enter “N/A” below.*

Provide justification why this resource is necessary to accomplish this Action Item and the program’s Action Plan.

Include the total cost and timeline for purchase or re-allocation.

The equipment requested for ITS 124, ITS 221, and ITS 104 would total around \$5000. This would enable students to work hands-on with real equipment and make them more valuable to local employers.

As with Action Item 1, another full-time faculty member to help write courses and keep them updated in our continually-changing field would be very helpful because there are so many classes.

Professional development is very necessary to achieve this goal because technology keeps changing. A professional development budget of \$5000 would enable the full-time faculty and lecturers to attend professional conferences and trainings to keep up-to-date in the field.