

HAWAI'I COMMUNITY COLLEGE PROGRAM ANNUAL REVIEW REPORT

[Information Technology Program]

Date: December 7, 2015

**Review Period
July 1, 2014 to June 30, 2015**

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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 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/program-unit-review/>

Program Description

Please provide a brief description of your Program. Include your Program Mission statement.

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 using procedural, event-driven and object-oriented programming techniques.

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, and/or system development in a business information technology system. The program focuses on computers and information technology as tools to solve business problems.

Part I. Review of Program Data

Go to the Annual Reports for Program Data (ARPD) website linked below and review the data for your program.

<http://www.hawaii.edu/offices/cc/arpd/>

Part II. Analysis of the Program

Based on the ARPD data in Part 1, analyze the Program in terms of Demand, Efficiency, and Effectiveness. Include significant Program actions (e.g., new certificates, stop out, gain/loss of positions) and results of prior year's action plan. Include analysis of any Perkin's Core Indicator(s) for which the Program's goal was not met. Also discuss any trends or other factors (internal/external) affecting the Program and analyze other Program changes or information not included elsewhere.

Demand: The Program has moved from a "healthy" status last year, to "unhealthy" demand status in the current year. It is not clear why there was a sudden change in demand as the economy is steadily improving. If the provided data is correct, we could attribute this to be due to two changes: a reduction in expected county positions (from 10 to 5) and a reduction in the number of majors (from 46 to 36). The former appears to be a temporary situation caused by a tight budget at the county level, and is likely to increase to previous levels in the near future. The U.S. Bureau of Labor Statistics, in its publication *Beyond the Numbers* (2013, Volume 2, Number 9), presented data showing a fairly steady increase in employment in the computer industry over the past few decades, and projected a 4% growth in this industry's employment during the 2010-2020 decade, well above the projected increase for all industries (just above 1% growth) and even well above projected growth in scientific and technical fields in general (2.5% growth). The major count in the IT Program has declined, along with a general fall in enrollment for the college as a whole. However, the percentage of majors who are full time students has increased in the past year (Fall to Fall, 47% to 68%, Spring to Spring, 38% to 44%, respectively), and thus average class size has actually increased by over 9% compared to last year.

Efficiency: The program is again rated as “cautionary” in efficiency status as it was last year. However, the data suggest a steady improvement in efficiency, with higher average class size (12.1 to 13.2) and a higher fill rate (60.6% to 65.9%) compared with previous years, despite fewer majors. As noted, the majors in the program are taking more courses on average as full time students than the higher percentage of part time students in past years.

Effectiveness: The program is again rated as “healthy” in effectiveness status. The program has sustained continuous improvement in successful completion, greater Fall-to-Fall persistence (from 44.1% to 54.2%) and a large increase in transfers to four year programs (from 1 to 4). The number of degrees awarded has declined somewhat, perhaps in correspondence with the decline in numbers of majors. It could also be coincidental that most students in this last cohort were taking one extra semester to complete their general education courses. Given the high percentage of full time students in the major, an increase in degrees awarded is expected in the coming year.

Overall Health: The program had finally achieved “healthy” overall status last year after steady gains over several years. The temporary drop in demand indicators, assuming these data to be correct, has likely led to the status ranking of “cautionary” at present. Given the overall drop in enrollment at Hawaii Community College, this is not unexpected. However, recruitment efforts will be increased to attempt to bring the major count back up to previous years’ levels.

Distance Education: N/A

Perkins IV Core Indicators: Like last year, the program has met four of the six Perkins Indicators. The optimistic goal for 1P1 Technical Skills Attainment of 91% was again not met, but the IT Program has improved from 83.3% to 87.5%, nearing our goal for skills attainment. The vast majority of our students have in fact attained these technical skills. The other indicator not met – like last year – was 4P1 Student Placement. This likely reflects the temporary decline in local government IT positions, but the improving economy is expected to lead to improved prospects for placing our students. This may also help explain why we have had such a large increase in students transferring to four year Computer Science programs, improving their likelihood of obtaining high level positions in the computer field upon attaining their baccalaureate degrees. Our program has clearly surpassed goals for the other four Perkins indicators.

Part III. Action Plan

Describe in detail the Program's overall action plan for the current/next academic year. Discuss how these actions support the College's Mission and can lead to improvement(s) in student learning. Include specific action plans to address any ARPD Health Call scores of "Cautionary" or "Unhealthy," and any Perkin's Core Indicator(s) for which the Program's Goal was not met.

The main goal for the coming year is to increase student major counts. The past year showed a drop in numbers of majors, probably corresponding to the general decline in enrollment for the college as a whole. This has led to a designation of "unhealthy" for demand, and a drop in overall program rating from "healthy" to "cautionary." Also, the decline in demand has led to missing the goal for Perkins 4P1, Student Placement. Accordingly, the primary action plan is to increase recruiting activities. The program is constrained by having only one full-time faculty member, with this faculty member taking on most of the instructional duties, as well as administrative duties for the entire program. This places a burden on this individual, who simply has little time left for the recruiting activities desired by the program. For many years, when the program was smaller, there were two full-time faculty members. The program's primary need is to add a second faculty position, allowing some flexibility for increased recruitment and retention activities, as well as adding courses that will provide additional employment opportunities for students, particularly in the computer security field. This reliance on a single full-time faculty member may explain why the program narrowly missed achieving its goal for Perkins 1P1, Technical Skills Achievement.

A second goal of the program is to develop and implement curricula in computer security, as part of a system wide, and more broadly national, initiative to focus in this area. Security risks in the digital age are a major concern, and there is much opportunity for students to enter this area of IT. The Hawaii Community College IT Program is part of the 3 year system-side TAACCCT grant. The full time faculty member has started the planning stage to initiate major curricular changes which will enhance computer security training, and these efforts are planned to continue in the coming year. These efforts are expected to help the program meet its goals for Perkins 1P1 Technical Skills Achievement, for Perkins 4P1, Student Placement, and improve the program's assessment in the demand area.

The courses in the IT Program are all designed to help our students meet Hawaii Community College's Institutional Learning Outcomes, including ILO #1, being able to communicate effectively. The new curricula will particularly enhance the program's efforts to have students meet ILO #2, being able to gather, evaluate and analyze ideas and information, employing problem solving skills. While IT technical training does not specifically address ILO #3 (diversity), the program's efforts at improving students' abilities to communicate and work in diverse groups in order to thrive in the community's workforce does address this critical ILO, which reflects the college's mission statement of serving all segments of the Hawai'i Island community.

Part IV. Resource Implications

Please provide a brief statement about any implications of current operating resources for the Program. Budget asks are included in the 3-year Comprehensive Review, except for the following that may be included here: health and safety needs, emergency needs, and/or necessary needs to become compliant with Federal/State laws/regulations. Describe the needed item(s) in detail, including cost(s) and timeline(s). Explain how the item(s) aligns with one or more of the Strategic Initiatives of the Hawai'i Community College 2015-2021 Strategic Plan. Identify and discuss how the item(s) aligns with the Initiative's Goal, Action Strategy, and Tactic. [HAWCC Strategic Plan](#)

N/A

Part V. Comprehensive Review Information

Please provide a short summary regarding the last comprehensive review for this program. Discuss any significant changes to the Program since the last comprehensive review that are not discussed elsewhere.

This is discussed in the new comprehensive review that covers the assessment period from July 1, 2011 to June 30, 2014

Required for ARPD Web Submission: Provide the URL to the specific location of this Unit's last Comprehensive Review on the HawCC Program/Unit Review website (see link on page 1):

Part VI. Program Student Learning Outcomes

For all parts of this section, please provide information based on the PLOs (P-SLOs) that were assessed through PLO-aligned course assessments in AY 2014-15.

A) Evidence of Industry Validation (CTE Programs)

[General Pre-Professional Programs can skip industry validation.]

Provide documentation that the program has submitted evidence and achieved certification or accreditation from an organization granting certification in an industry or profession. If the

program/degree/certificate does not have a certifying body, you may submit evidence of the program's advisory committee's/board's recommendations for, approval of, and/or participation in assessment(s).

In the Report of the Advisory Committee to the IT Program (May 1, 2015; attached), it was noted that the committee praised the work done by IT students who had been hired in summer positions, with several students to be hired, at least in temporary positions, to assist the county in upgrading its computer systems. Members from the County, Gemini Observatory, Eljay Services, and PISCES all attended the meeting, and gave high praise to the program and the ability of its graduates. The committee concurred with the IT Program's ILOs and emphasized the importance of the program to continue to provide the community with competent, quality workers who are problem solvers and are able to follow instructions.

B) Expected Level of Achievement

For each Course assessed in AY 2014-15: Discuss the rubric(s) standards and the benchmark goal(s) for student success (e.g., "85% of students will achieve Excellent or Good ratings in the assessed activity" or "90% of students will score Meets or Exceeds Standards on the assessment rubric").

Two courses were assessed in AY 2014-15: ICS 101 (Digital Tools for the Information Age) and ITS 121D (Computing Topics: Animation Programming (Using Alice)). For both courses, the program expects 85% of the artifacts evaluated by the Assessment Committee to meet or exceed expectations. For ICS 101, the Committee assessed student work related to Program Learning Outcome #5: Legal/Ethical/Professional. Each evaluation covered three characteristics: specifications, modular design, and readability. For each of the three characteristics, each committee member assigned each student's work a designation of "exceeds expectations," "meets expectations," or "does not meet expectations." For ITS 121D, each committee member evaluated four characteristics: specifications, modular design, readability and documentation, and implementation, with each student evaluated as "exceeds expectations," "meets expectations," or "does not meet expectations" for each characteristic.

C) Courses Assessed

List all Program Courses assessed during AY 2014-15. Also list Program Courses for which a follow-up "Closing the Loop" assessment was implemented in AY 2014-15.

Assessed Course Alpha, No., & Title	Semester assessed	PLO-aligned CLOs that were assessed
ICS 101 Digital Tools for the Information World	Fall 2014	Program ILO #5: Legal/Ethical/Professional
ITS 121D Computing Topics: Animation Programming (Using Alice)	Spring 2014	Program ILO #3: Programming

"Closing the Loop" Assessments Alpha, No., & Title	Semester assessed	PLO-aligned CLOs that were assessed
There were no Program Courses for which a follow-up "Closing the Loop" assessment was needed to be implemented.		

D) Assessment Strategy/Instrument

For each Course assessed in AY 2014-15, provide a brief description of the assessment strategy, including the type of student work or activity assessed how and when the assessment was conducted, how and why assessed artefacts were selected, and how the artefacts were analyzed.

E) Results of Program Assessment

For each Course assessed in AY 2014-15, provide a summative description of the assessment results. Discuss how these results collectively demonstrate achievement of the Program's Learning Outcomes and support the College's Mission.

The summative description of the assessment results may be found in the attached assessment reports.

Follow attached links to the reports.

[ITS 121D PLO3 Report S2014.docx](#)

[ICS 101 PLO5 report F2014.docx](#)

The assessment of the two courses evaluated during the 2014-15 academic year focused on two of the six IT program PLOs, but one of the courses that were evaluated covered all of the PLOs. ICS 101 is designed to introduce the students to material needed to achieve all of the PLOs. Specifically, the course introduces Information Systems (PLO#1), and allows students to understand the skills and knowledge required to plan, develop, and implement computer system in a business environment. The course only touches on PLO #2 (Networking). PLO#3 is Programming, introduced in ICS 101, but not covered in depth. A major focus of ICS 101 is to have students learn how to work independently and cooperatively, a major component of PLO #4 (Productivity). The assessment report focuses on how the students' assignments – those that were evaluated by the Assessment Committee - demonstrate the Program's achievement in meeting ILO #5 (Legal/Ethical/Professional). The assessment showed that 88.9% of evaluations met or exceeded

expectations, well above the program expectation of 85%. Finally, ICS 101 introduces the students to what is required to Explore (ILO#6) their field. ICS 101 is an introductory course that exposes students to all the program's ILOs, but does not go into the depth of knowledge necessary for students in pursuing successful careers in the IT field.

The depth of knowledge required by students for their IT careers is achieved by courses that deal with specific issues of computers and information technology. The second course assessed this past year is ITS 121D, which is an in-depth programming course. The course thus focuses on ILO #3 (Programming), and, as shown in the attached report, two projects were assessed, and for both projects, 85% or more of the students met or exceeded expectations, which was the program's goal.

F) Other Comments

Initial tracking was attempted of the 8 students who received "Unduplicated Degrees/Certificates" in Spring 2015. Of the 4 students who received the IT-AS degree, one is working in the National Guard – Air Force division, one is continuing to pursue his 4 year degree (in computer science in UH-Hilo), one is planning to transfer to UH-Manoa and major in Cybersecurity while currently completing his AA degree, and the fourth is currently working as a private consultant setting up a Point of Sales system among other consulting work for a local restaurant. Of the four IT-Certificate awardees, two are finishing their general education courses and will be applying for their IT-AS in the near future, one is working in the IT field, and one is unknown.

This is a continuous trend showing IT graduates are successful. As reported in the previous years' IT annual reports, our IT graduates are on track with their professional development, and many have been promoted to supervisory positions in the Big Island community.

Include any additional information that will help clarify the assessment results. Include comparisons to any applicable College or Program standards, or to any national standards from industry, professional organizations, or accrediting associations. Include, if relevant, a summary of student survey results, CCSSE, e-CAFE, graduate-leaver surveys, special studies, or other assessment instruments used.

G) Next Steps

Based on the Program's overall AY 2014-15 assessment results, describe the Program's intended next steps to enhance instruction in order to improve student learning. Instructional changes may include, for example, revision to curriculum, teaching methods, learning outcome statements, student support, and other options. Please note here if proposed changes will involve Program and/or Course modifications requiring approval.

The major curriculum change anticipated for the IT Program in the coming year is the establishment of a certificate program in computer security. This will combine creation of new courses and modification of

current courses. Some of the current courses - ITS 221 Information Security, ITS 215 Network Administration, and ITS 284 Data Communications Fundamentals etc. will be included as part of the certificate program, although they may require modifications. Further specifics are still under consideration.

The program will continue to combine various instructional techniques to enhance student learning. IT requires a combination of recitation, hands-on work with computer programs, and experience in workplace setting.

Part VII. Cost Per SSH

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	= \$	_____

Part VIII. External Data

If your program utilizes external licensures, enter:

Number sitting for an exam	_____
Number passed	_____

[If your program does not utilize external licensures, skip Part IX.]