

KAPI'OLANI COMMUNITY COLLEGE

COMPREHENSIVE INSTRUCTIONAL PROGRAM REVIEW

2016-2019

Information Technology - Associate in Science Degree

College Mission Statement

Kapi'olani Community College

Strategic Plan: Mission, Vision, Values, and Commitments 2015-2021

Mission Statement: Kapi'olani Community College provides students from Hawai'i's diverse communities open access to higher education opportunities in pursuit of academic, career, and lifelong learning goals. The College, guided by shared vision and values, and commitment to engagement, learning, and achievement, offers high quality certificate, associate degree, and transfer programs that prepare students for productive futures.

Vision Statement: Kapi'olani Community College is a leading indigenous serving institution whose graduates strengthen the social, economic and sustainable advancement of Hawai'i's diverse communities in an evolving global community.

Values Statement: Kapi'olani Community College enacts the following values:
Kapi'olani Community College enacts the following values:

Kūpono: Practicing honesty and integrity with clarity in all relationships.

Kuleana: Sharing a common responsibility to support the future of our students, college,

Kūloa'a: Ensuring that the needs of our students are met with support and service.

Kōlia: Creating meaningful curricula and learning experiences that serve as a foundation for all to stand and move forward.

Kapi'olani Commitments – Outcome 1: Graduation

- Continue development of STAR, student registration interface, and guided pathways to completion and transfer.
- Increase availability of information on mobile devices.
- Improve data system for planning and management and with DOE.
- Develop predictive analytics for student success.
- Participate in UHCC innovation fund to achieve strategic outcomes (\$1.25 million/year) related to Strategic Plan-Reducing Time to Degree Initiatives and Hawai'i Strategy Institutes.

Kapi'olani Commitments – Outcome 2: Innovation

- Develop sector visualization to display top employment sectors with salaries and degree attainment.

- Develop a tracking system to fully understand employer needs, apprenticeship, internship, clinical, and graduate placements, graduate earnings and advancement, and needs for further education and training.
- Build better workforce development system through credit and continuing education programs.
- Develop Native Hawaiians for leadership roles at the College and in the community.
- Advance the use and understanding of the Hawaiian language and culture.
- Develop community partnerships locally and globally that advance the college's indigenous serving goals.
- Develop baselines and benchmarks for 'āina-based and for place-based learning, undergraduate research, and teacher preparation.
- Improve enrollment management systems.
- Eliminate cost as a barrier to education.
- Continue to increase Pell grant participation.
- Increase private fundraising for needs-based aid.
- Implement Open Educational Resources (OER) to replace most textbooks.

Kapi'olani Commitments – Outcome 3: Enrollment Growth

- Invest in outreach to high schools, GED programs, Native Hawaiian and Pacific Islander community partnerships.
- Integrate recruitment of working age adults into overall workforce development system.
- Target outreach strategies to innovative programs.
- Focus on campus-based re-enrollment strategies.

Kapi'olani Commitments – Outcome 4: Modern, Sustainable, Teaching and Learning Environments

- In conjunction with the Long Range Development Plan, impart a Hawaiian sense of place on campus through landscaping, signage and gathering space to enable social and cultural sustainability of campus communities.
- Improve financial management systems.
- Reduce deferred maintenance backlog.
- Implement campus technology plan and develop a system of planned equipment replacement.
- In conjunction with the Long-Range Development Plan, serve as role models and consultants to the community on sustainability.
- In conjunction with the campus Long Range Development Plan, design, develop, and build a non-campus training hotel that in addition to providing essential lodging, culinary, meeting and conference services, will serve as a catalyst to foster interdisciplinary collaboration with programs such as: Hawaiian Studies, Information Technology, Accounting, Marketing, and Massage Therapy.
- In collaboration with Lē'ahi Hospital and their Master Plan, develop a Kūpuna Clinical Teaching Hospital for Health Academic Programs.
- In conjunction with the Long-Range Development Plan, participate in Modern Facilities Task Force to:
 - Define optimal design and learning elements for 21st century, 3rd decade educational infrastructure;
 - Establish goals for state-of-the-art, digitally enabled, labs, classrooms, offices, and centers to support community engagement and partnerships across the state.

Program Mission Statement

The primary Information Technology (IT) program student focus is career preparation with three major emphases:

- Insuring that our graduates possess the necessary IT skills and knowledge to enter the workforce upon graduation,

- preparing students and graduates to move seamlessly and successfully to UH Mānoa, UH Maui College, UH West Oahu, and other four-year institutions, and
- providing lifelong learning opportunities for Hawai'i's workforce that are designed to improve workforce skills and career progression and in a manner that is convenient to the incumbent workforce.

Part I. Executive Summary of Program Status Response to previous program review recommendations.

Our prior CPR action plans included the following:

- 100 students completing the new Cybersecurity Certificate of Competence by 2020.
 - Done
- Offering all of the Certificate of Competence in Cybersecurity courses online by 2020.
 - Done--although not all cyber courses are offered online each semester, all the courses have been offered online
- Faculty Professional Development: 2 professional development events/conferences per year per faculty member over the next 5 years.
 - Incomplete--while some faculty have managed to attend one in-state and one out-of-state conference in some years; not all IT faculty have been able to do this on a regular basis. The reasons are many: money, time, interest.
- Continually adapting our curriculum to emerging technologies such as mobile devices, robotics, etc.
 - Content of some courses has been modified to include Raspberry PI boards, sensors, and other related hardware.
 - Purchased NAO Robot to use in robotics efforts.

- Continued partnership with UHWO, and development of a new articulation agreement in Information Security Assurance, a very "hot" area in IT.
 - ISA articulation agreement complete with UHWO
 - ABIT articulation agreement complete with UHMC

- Collaboration with other IT programs to incorporate institutional best practices. Continue to work with UH System office to develop a system wide program on cyber security. The program will also continue to strengthen regional ties through organizations such as MPICT (Mid Pacific Information and Communications Technology initiative) and CyberWatch West. We are working to implement the system-wide department of labor TAACCCT grant in cybersecurity. This involves updating and creating curriculum to increase focus on cybersecurity, as well as the installation of a NETLAB+ virtual lab environment in support of cybersecurity and other topic areas.
 - Active member and participant with UH System wide IT and Cyber education efforts

- Continued recruitment efforts through a reach down into our service courses (ICS) as well as through other means.
 - Counselor and Instructional Faculty visitations to ICS 100 and ICS 101 sections throughout the semester.
 - Placement of recruitment flyers in customized texts of both courses

- Faculty and counselors will continue efforts to improve retention/persistence through tutoring, counseling and other interventions so that more of our students are able to realize their goals of working in the IT industry. This will require funding for student tutors, summer counseling, and summer IT program coordination/advising.
 - Counselors and IT Faculty have become more active and "more successful" in NSO activities.

- Collaboration with the IT Industry Advisory Council and a review of occupational codes related to this area of specialty to the program will ensure that its offerings accurately reflect the current industry requirements.
 - No work in this area at this time
- Partnerships with commercial, professional and educational organizations such as CompTIA, Oracle, Microsoft, and VMware, EMC, and Cisco Academy.
 - Near completion of a Certification Testing Center that would focus on CompTIA and MS certifications.

We continue to respond to industry trends by adapting curriculum and by professional development. However, student success and retention efforts related to peer tutoring have been severely curtailed by cuts in the student staffing budget; we could do more if we had more funding.

Part II. Program Description

History

The Information Technology program was established in 1966 as part of the Business Education Division at Kapi'olani Community College (KapCC). In keeping pace with industry standards, the program has evolved from punched cards and an isolated mainframe computer in 1966 to the present interactive networked environment that connects a mainframe computer at UH Mānoa and several KCCIT faculty-maintained servers with numerous microcomputers at the Diamond Head campus and remote student access sites. Instructional support was provided by the Information, Media and Technology Services division.

In Spring 1990, Kapi'olani Community College submitted the Information Technology program for consideration for the Secretary's Award as an Outstanding Vocational Education Program.

In Fall 1990, the A.S. degree was revised to better conform with the Data Processing Management Association (DPMA) model and was the only degree program in Hawai'i offering the full spectrum of training from an Xbase database management system on microcomputers to RPG on a minicomputer to COBOL/JCL on a mainframe computer.

In Spring 1992, the program was successfully expanded to include offering Information Technology courses and the Certificate of Completion off campus at the Correctional Facility at Halawa.

In Fall 1993, KCC became an academic partner with Novell, Inc., and offered certified network training. A Certificate of Completion in Networking Technologies was proposed and implemented in Fall 1994.

Training in networking has been incorporated in the Certificate of Achievement and Associate in Science Degree effective Fall 1995. From Fall 1993 on, the program offered the following Information Technology credentials:

- an Associate in Science Degree (Programmer, Junior Analyst)
- a Certificate of Completion (Front-end GUI and Database Connectivity) and
- since 2002, a Certificate of Competence (PC Maintenance)

In 1998, we entered a one-year agreement with CISCO to provide training in CISCO network routing. The contract has since lapsed and we no longer offer this vendor training. Instead, we continue to offer nonvendor specific training in network management. Similarly, we no longer offer Novell training. New technologies are introduced, and others fade away, so we have discontinued our courses in RPG on the minicomputer (AS 400) platform.

In Fall 2001, we began offering "topics" courses to allow us to rapidly respond to industry trends and needs, including an "Oracle" course that led to Oracle certification. In Fall 2002, we started offering courses leading to Microsoft Certified Systems Administrator (MCSA).

As of Fall 2003, courses were offered in Visual Basic .NET, game programming, and Business PC Systems Maintenance/Support and Operating Systems Installation to address the changing IT employment requirement due to outsourcing and September 11, 2001.

In Fall 2005, all courses using Microsoft Office Applications (ICS100, ICS101, ITS102, ITS113) were upgraded to MS Office 2003. This entailed upgrades to the three class/labs and one open lab, instructors' workstations, and new textbooks. ITS157, Web Design and Development, switched from a Microsoft tool, Frontpage, to a Macromedia tool, Dreamweaver MX2004, based on industry standards and student feedback. The program also invested in a server to pursue development in Sharepoint Services for both staff and student use.

In Spring 2005, the UH mainframe changed its operating system to zOS. Subsequent problems regarding communication between students' computers and the mainframe were resolved.

In Spring 2006, we introduced a new topics course (ITS 220S) on PC and Network Security based on feedback we received from both our students and advisory group.

In Fall 2006, we renewed our Oracle license after a year's lapse and updated the curriculum to provide local industry with current technology training.

In Fall 2007, we restructured our AS program by renumbering our courses using a consistent, logical methodology and created a series of short certificates as a persistence strategy to reward students for concentrated study along a technology line.

In Fall 2008, as a result of our success in awarding short certificates, but unfortunately not receiving much credit for them, we expanded our three certificates in programming, help desk services, and database administration to include a foundation course in business applications; thereby, changing the certificates to completion (12+ credits), which are counted towards our Perkins' numbers.

In Fall 2009, after several years of futilely trying to develop a system-wide articulation agreement with the University of Hawai'i at West Oahu (UHWO), we started the process to develop our own independent agreement. To accomplish that end, we proposed an Advanced Professional Certificate (APC) in IT at KapCC composed of six 300-level IT courses that would cleanly and wholly transfer to UHWO. In addition, we worked with the other AS and transfer programs of the Business, Legal and Technology Education Department (BLT), formerly the Business Education Department, on a Title III Renovation Grant that would "makeover" our Computer Lab into a Business Education Collaboration Center.

In Fall 2010, we began our Advanced Professional Certificate by offering two 300-level ITS courses, ITS 327 and ITS 324. While we wanted to offer three ITS courses per semester at the 300 level to pace students through a one year completion of the certificate, because of various resource constraints we were only able to offer two courses in the first semester.

However, in Spring 2011, we ramped up to speed and began offering three APC courses. All courses transferred to the UHWO Bachelor of Applied Science (BAS) with a Concentration in Information Technology. Enrollments in all courses were extremely high.

During the Summer of 2011, we moved out of our Kōpiko classrooms and lab and into temporary quarters in the Mamane building to allow for the renovations of the Kōpiko facilities.

In Fall 2011, we continued our stay in the temporary Mamane quarters. We tried to "make do" with a very inadequate, undesirable situation. Meanwhile, commencement of renovations on our Kōpiko

facilities was postponed for a variety of logistical, fiscal reasons. Still, we continued our ASIT courses, our APCIT courses, our pre-ICS courses, and our service courses. In addition, we hired a new full-time faculty to replace a recent retiree to teach our programming line of courses.

Though the campus overall experienced slight declines in enrollment, the IT Program courses experienced a modest increase in enrollment. Our 300-level courses, offered in the early evening to accommodate an already employed workforce as well as current students, continued their strong enrollments. As part of one of our 300-level courses, we began a collaboration with the Waikiki Aquarium to create a series of water-based keiki games for use on mobile devices. This coincided with a Perkins Left Over Grant of \$15,000 we received to purchase 32 Android Tablets, which were used in the Aquarium project. In addition, we received a regular Perkins Grant of over \$180,000 to purchase equipment and software to set up and use a Virtual Machine (VM) Server for classroom use and department support.

In Fall 2012, work began in earnest on the Kōpikore renovations. We also hired our latest ICS/IT faculty from a vacancy from several years back. Our enrollments for all our courses—AS, APC, ICS, service—were up. Students in one of our 300-level security classes participated and placed nationally in the 2012 National Cyber Security Contest.

In Fall 2014, the program was party to a UHCC system-wide \$10 million TAACCCT grant focused in Cybersecurity and Health. A Netlab+ online virtual lab environment was purchased and installed, and significant curriculum development was done. One cybersecurity-focused competency was added to most ITS courses and one cybersecurity program SLO was added to the ASIT. Three new cybersecurity courses were developed and added to the ASIT and CAIT. Third, a new Certificate of Competence in Cybersecurity was developed. These changes were submitted February 2015 and approved in January 2016 to be effective in Fall 2016.

Effective Spring 2016, the Pre-ICS transfer classes, ICS 111, ICS 211, ICS 141, and ICS 241, were moved from the IT program to Arts and Sciences along with one full-time faculty position. A full-time ICS faculty member was hired in Arts and Sciences to manage and teach those classes. ICS 101, ICS 100, and ICS 110 remain with Business, Legal, and Technology. At the same time, a full-time faculty member was hired with a focus in cybersecurity to help with the new program and classes.

All program emphasize the use of computers to support business and to develop business applications as well as information security. As of Spring 2019, the program has six full-time faculty members, including a designated program coordinator.

Program Goals

1. To provide graduates with the entry-level skills and knowledge necessary for performing services as a computer support specialist, technical support specialist, help desk technician, network administrator, programmer, data analyst, cybersecurity professional, or web developer using rapid prototyping tools to produce the front-end GUI interface with connectivity to appropriate databases at the back-end.
2. To provide the upgrading of skills of those currently employed in the Information Technology field.

Occupations for which this program prepares students

- Windows Application Developer
- Web Applications Developer
- Data Analyst
- IT Specialist
- Help Desk Technician
- Network Specialist
- Programmer
- Cybersecurity Professional

Program SLOs

1. Design and develop software solutions for contemporary business environments by employing appropriate problem-solving strategies.
2. Configure and administer database servers to support contemporary business solutions.
3. Configure and administer networks to contribute to contemporary business solutions.
4. Design, and develop web solutions to address contemporary business objectives.
5. Learn future technologies through acquired foundational skills and knowledge and employ them in new business environments.
6. Practice communication, problem solving and decision-making skills through the use of appropriate technology and with the understanding of the business environment.
7. Demonstrate knowledge of current information, network, and cyber security issues and implement best practices in mitigation and recovery.

(Effective Fall 2016)

Admission Requirements

Standard Kapi`olani Community College admissions.

Credentials, Licensures Offered

Preparation for:

- CompTIA A+

- CompTIA Network+
- CompTIA Security+
- CompTIA Server+
- CompTIA Advanced Security Practitioner (CASP+)
- Certified Internet Web Professional (CIW)
- Microsoft Certified Technology Specialist
- Microsoft Certified Professional Developer
- Microsoft Certified Application Specialist (Word, Excel, PowerPoint, Access 2007)

Faculty and Staff

- Alfred Seita, M.S., Professor, tenured, 1994 (Teaches Business Mathematics, ICS service classes and ITS classes)
- Steven Singer, Ed.D., Professor, tenured, 2005 (Teaches both ICS service classes and ITS classes)
- Hal Corcoran, M.S., Associate Professor, tenured, 2014 (Teaches both ICS service and ITS classes)
- David Stevens, M.S., Instructor, probationary, 2016 (Teaches both ICS service and ITS classes)
- Dale Nakasone, M.S., Instructor, probationary, 2017 (Teaches both ICS service and ITS classes)
- Richard Halverson, PhD, Instructor, probationary, 2018 (Teaches both ICS service and ITS classes)

Lecturers

- Tom Moore
- Percy Ellis
- Ken Newman

- Boris Bogaczewicz
- Arthur Louie
- Trude Pang
- Pat Gilbert
- Christine Malenya

It should be noted that faculty within the IT program teach several different types of classes. Some classes are strictly for the IT major and have the ITS alpha. Some classes are service classes for either programs at the KapCC campus or for UHM Shidler CBA, or TIM: ICS 100, ICS 101, BUS 100, and BUS 250.

Resources

- Four networked class/labs with 20-30 student workstations, shared with other BLT programs (Accounting, Marketing, and Paralegal)
- One Hardware IT Service Lab with counter space and stools for 20 students
- One multi-purpose room (without computer workstations) for occasional classes, student group work, and dept meetings.
- Two "lecture" type classrooms
- Four instructor workstations with projection capabilities, shared with other BLT programs
- One open lab, shared with other BLT programs, with 20-30 student workstations
- Software as appropriate to teach current business applications, programming languages, networking operations, and database and web technologies, shared with other BLT programs
- Two counselors, shared with other BLT programs
- One lab manager, shared with other BLT programs
- One secretary, shared with other BLT programs

- One half-time clerical assistant, shared with other BLT programs
- Two to six student assistants to staff the open lab and assist the secretary, shared with other BLT programs.

Articulation Agreements

- UHCC System ETRO/CENT
- UH-West Oahu BAS in Information Technology
- UH-West Oahu BAS in Information Security and Assurance
- UH Hilo transfer agreement
- UHMC BAS Applied Business and Information Technology

Community Connections, Advisory Committees, Internships, Coops

Naomi	Stafford	Midori Web Designs
Keith	Furuya	DTRIC Insurance
Joel	Kumabe	Hawai'i State FCU
Brandon	Onishi	Hawai'ian Telcom
Colleen	Leopoldino	HMSA
Gordon	Bruce	GJB & Associates
Mark	Wong	C&C of Honolulu
Ricky	Chow	Computer Assurance
Randy	Baldemor	St. of Hawai'i
Doreen	Nozawa	Servco
Derrick	Wong	Servco
Glenn	Nishida	Kupaa Group

David	Lopes	Kupaa Group
Keith	Ho	C&C of Honolulu
Loren	Aquino	PACXA
Bob	Russio	HSMA
David	Rolla	HECO
Randolf	Batoon	Partners in Devopment Foundation
Jordan	Vannatta	Referentia
Paul	Sakamoto	UHCC VP Office
Jeff	Gionet	Starwood Hotels
Sam	Ikemoto	Servco
Sandy	Park	HTDC
Danny	Dallegos	Anthology Inc.
Tony	Giandomenico	Referentia
Erica	Wingad	HECO
Leila	Kagawa	State of Hawaii
Cindy	Matsuki	HTDC
Charmer	Lowe	Booze Allen
Clem	Liu	NSA Hawai'i (NSAH)
Taylor	Roa	Teksystems Hawai'i
Barbara	Teraji	NSA Hawai'i (NSAH)
Chi	Kwok	Servco
Greg	Gilbert	Apex Systems
Andrew	Lanning	Integrated Security Technologies
Randy	Faatau	First Hawai'ian Bank
Curtis	Arnold	Arnold & Associates

Henry	Hutson	Adapt Forward Cyber Security
Danielle	Lewis	Lockheed Martin
Debasis	Bhattacharya	UHMC
Cynthia	Young	Northern Aviation Services
Matthew	McPherson	HMSA
Timothy	Ames	Hawai'i Tech Support
Gary	Mays	NSA Hawai'i (NSAH)
Gary	Morgan	Marriott International
Rachel	Doucet	NSA Hawai'i (NSAH)
Keriann	Osada	HMSA

Internships

- American Savings Bank
- Kaiser Permanente,
- University of Hawai'i ROTC
- UH Foundation
- KCC - CELTT
- Red Cross
- Moanalua Middle School
- Epower Sports LLC
- Hawai'i an Mission Houses
- Sheraton Hawai'i
- Geek Squad
- Palolo Learning Center

- University of Hawai'i - West Oahu
- Office of Hawai'ian Affairs
- Cam Security
- Kaimuki High School
- Kuakini Health Systems
- Oceanic Time Warner Cable
- Clear Channel Radio
- Computer Doctor Hawai'i Technology with KLLP.
- Department of the Navy
- Hawai'i National Guard
- UH Foundation
- HMSA

DOE Connections

Standard Kapi`olani Community College connections.

Distance Delivered/Off-Campus Programs, if applicable

ICS100, Computing Literacy and Applications, 2-3 sections each semester
ICS101, Digital Tools for the Information World, 5-6 sections each semester

ITS 122, Cyber Security Fundamentals, 1-2 sections each semester

ITS 128, Problem Solving & Prog. Processes, 1-2 sections each semester

ITS 129, Introduction to Databases, 1 section each semester

ITS 142, Network Security, 1-2 sections each semester

ITS 222, Cyber Attacks & Defense, 1-2 sections each semester

ITS 300-level (APC), (varies by semester), 1-2 sections each semester

Part III. Curriculum Revision and Review (Minimum of 20% of existing courses is to be reviewed each year.)

SUBJ	CRS#	TITLE	AY Last Approved	ACTION *	sp 16	f16	sp17	f17	sp18	f18	sp19	f19
ITS	144	Business PC System Maintenance/Support and OS Installation	2017-18	update	x							
ITS	148	Visual Basic I	2018-19	modify					x			
ITS	149AD	Database Administration I	2017-18	retire							x	
ITS	224	Help Desk Support Practices	2013-14	modify					x			
ITS	228	Visual Studio.NET Prog. II	2018-19	modify							x	
ITS	229AD	Database Administration II	2018-19	retire							x	
ITS	328	Adv. Database Prog. w/ VB .NET	2015-16	retire							x	
ITS	344	Small Business Server Adm.	2015-16	retire							x	
ITS	347	Active Serv Pgs .Net - Web Dev.	2015-16	retire							x	
ITS	381F	Topics in IT: Computer Forensics and Investigations	2015-16	retire							x	

All but 2 major courses in the AS Information Technology program, along with the ICS service courses, were revised during AY 2015-16.

Part IV. Survey results

Student satisfaction

Although we did not conduct a "student satisfaction" survey other than the college's End-of-Semester Student Feedback Survey, we did conduct separate "student interest" surveys to help ascertain student's interest in the scheduling of courses.

Occupational placement in jobs (for CTE programs)

We have consistently failed to meet our ARPD student placement goals. Two possible explanations may be that 1) the college has only recently started a job placement program and 2) the vast majority of our ITAS students were continuing on toward their APC in IT and BAS in IT. Despite these numbers, anecdotal evidence and contact with former students indicates that, with very few exceptions, all of our Information Technology students find employment in the IT field upon or shortly following graduation.

According to the 2017 VARP data: We had a goal of 63.87 percent placed; we actually placed 51.79%

Employer satisfaction (for CTE programs)

(no data)

Graduate/Leaver (for CTE programs)

(no data)

Part V. Quantitative Indicators for Program Review

Demand Indicators		Program			Demand Health Call
		Year			
		15-16	16-17	18-19	
1.	New & Replacement Positions (State)	415	406	393	
*2.	New & Replacement Positions (County Prorated)	348	343	328	
3.	Number of Majors	150	147	130	
3a.	Number of Majors Native Hawaiian	19	16	10	
3b.	Fall Full-Time	60%	57%	55%	
3c.	Fall Part-Time	40%	43%	45%	

3d.	Fall Part-Time who are Full-Time in System	1%	3%	2%	Healthy
3e.	Spring Full-Time	55%	56%	50%	
3f.	Spring Part-Time	45%	44%	50%	
3g.	Spring Part-Time who are Full-Time in System	1%	1%	2%	
4.	SSH Program Majors in Program Classes	1,554	1,824	1,482	
5.	SSH Non-Majors in Program Classes	2,388	2,298	2,135	
6.	SSH in All Program Classes	3,942	4,122	3,617	
7.	FTE Enrollment in Program Classes	131	137	121	
8.	Total Number of Classes Taught	66	70	67	
Efficiency Indicators		Program Year			Efficiency Health
		15-16	16-17	18-19	
9.	Average Class Size	20	20	18	Healthy
*10.	Fill Rate	92.5%	91.1%	81.5%	
11.	FTE BOR Appointed Faculty	7	5	5	
*12.	Majors to FTE BOR Appointed Faculty	21	29	26	
13.	Majors to Analytic FTE Faculty	21	18	19	
13a.	Analytic FTE Faculty	7	8	7	
14.	Overall Program Budget Allocation				
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	3	3	6	

Effectiveness Indicators		Program Year			Effectiveness Health Call
		15-16	16-17	18-19	
17.	Successful Completion (Equivalent C or Higher)	74%	79%	71%	Cautionary
18.	Withdrawals (Grade = W)	126	119	102	
*19.	Persistence Fall to Spring	70%	80%	70%	
19a.	Persistence Fall to Fall	47%	45%	44%	
*20.	Unduplicated Degrees/Certificates Awarded	32	67	34	
20a.	Degrees Awarded	16	38	22	
20b.	Certificates of Achievement Awarded	16	45	10	
20c.	Advanced Professional Certificates Awarded	2	2	0	
20d.	Other Certificates Awarded	6	73	23	
21.	External Licensing Exams Passed				
22.	Transfers to UH 4-yr	22	25	26	
22a.	Transfers with credential from program	11	6	12	
22b.	Transfers without credential from program	11	19	14	
Distance Education: Completely On-line Classes		Program Year			
		15-16	16-17	18-19	
23.	Number of Distance Education Classes Taught	12	15	17	
24.	Enrollments Distance Education Classes	286	323	359	
25.	Fill Rate	95%	89%	84%	
26.	Successful Completion (Equivalent C or Higher)	67%	67%	63%	
27.	Withdrawals (Grade = W)	33	38	41	
28.	Persistence (Fall to Spring Not Limited to Distance Education)	49%	53%	64%	
Perkins IV Core Indicators 2011-2012		Goal	Actual	Met	

29.	1P1 Technical Skills Attainment	92.92	98.48	Met
30.	2P1 Completion	51.51	57.58	Met
31.	3P1 Student Retention or Transfer	81.81	83.91	Met
32.	4P1 Student Placement	64.51	63.41	Not Met
33.	5P1 Nontraditional Participation	23	15.34	Not Met
34.	5P2 Nontraditional Completion	22.22	16.95	Not Met
Performance Funding		Program		
		Year		
		15-16	16-17	18-19
35.	Number of Degrees and Certificates	34	85	32
36.	Number of Degrees and Certificates Native Hawaiian	3	16	4
37.	Number of Degrees and Certificates STEM	34	88	32
38.	Number of Pell Recipients ¹	21	32	21
39.	Number of Transfers to UH 4-yr	22	25	26

Part VI. Analysis of the Program

1. Alignment with mission

We are in perfect alignment with both the program and college's mission. Specifically, we are in alignment with the following college mission statements:

- prepares students to meet rigorous associate and baccalaureate requirements and personal enrichment goals by offering high quality liberal arts and other articulated transfer programs.

(We have had approximately 80 students who have moved from KapCC's IT Program to UHWO's BAS in IT or BAS in ISA over the past 3 years.)

- delivers high quality 21st century career programs that prepare students for rigorous employment

standards and to meet critical workforce immediate and long term needs and contribute to a diversifying state economy.

(Our students are sought after in the local IT community. Some students are even hired before graduation (much to our consternation as we would like them to graduate, too).

- prepares students for lives of ethical and social responsibility by offering opportunities for increased service learning and community engagement.

(We offer service-learning opportunities in several of our IT courses. In fact, our internship course--ITS 293 requires that students intern in an IT capacity somewhere in the community. This requires that both students and faculty remain connected to the community. This, along with our IT advisory board, assures substantial community involvement. The IT program faculty are actively working to enhance and expand service-learning opportunities for our students.)

- uses human, physical, technological and financial resources effectively and efficiently to achieve ambitious educational goals and generate a solid return on the public's investment for a sustainable future. (We have both a robust AS and APC program with over 150 majors using only 6 full-time faculty, 4 networked computer classrooms/labs and 1 shared open lab. We do this in collaboration and cooperation with the other BLT programs and consistently do so under shrinking budgets. We continue to improve and expand our program without any increase in faculty or resources)
- builds partnerships within the University and with other educational, governmental, business, and nonprofit organizations to support improved lifelong learning.

(We have two strong articulation agreements with UHWO, one with UHMC, and fourth agreement on the horizon with University of Phoenix and have nonprofit organizations, many local small to large businesses and government organizations connected to the program via our IT Advisory Board and IT Internship Hosting programs.)

- uses ongoing cycles of planning, best practice research, budgeting, implementation, assessment, and evaluation to drive continuous program and institutional improvement.

(We are currently not compliant in assessing all of our Program Learning Outcomes as well as our Course Learning Reports. We have revised over 80% of our curriculum within the past year and are working on the remaining 20%).

In addition, we are in full alignment with our own mission:

The primary Information Technology (IT) program student focus is career preparation with three major emphases:

- insuring that our graduates possess the necessary IT skills and knowledge to enter the workforce upon graduation, (our graduates get full time IT positions in both the public and private sectors. We receive very favorable comments from their employers tell us our students are well prepared for their work.)
- preparing students and graduates to move seamlessly and successfully to UH Mānoa, UH West Oahu, and other four year institutions, and (A significant percentage of our students have moved from KapCC to UHWO.)
- providing lifelong learning opportunities for Hawai'i's workforce that are designed to improve workforce skills and career progression and in a manner that is convenient to the incumbent workforce. (Our APC is designed and offered at a time to allow for current IT workforce members to upgrade their skills by taking 1-3 advanced level IT courses per semester.)

2. Current Situation

Internal Demand

Demand Indicator for the Information Technology Program is overall "Healthy." While the data has not changed significantly from last year when we were rated "Healthy," the formula has been changed. We have experienced a 5% change in student numbers and 3% change in County Positions since last year. If the statewide positions number was used, the program would still be rated "Healthy." The program continues to grow and expand over the long term. Overall, demand remains strong.

In order to (continue to) meet Demand indicator numbers for our program, professional counseling and academic advising services must be available to prospective and continuing students year-round, including during the summer. The counselors meet with new, transfer, and prospective students through student orientations, appointments, and through phone/email contacts to ensure timely career exploration, student development counseling and enrollment into applicable courses. These services assist students in developing accurate academic plans based on realistic major, transfer and/or career choices. Counselors also assist students by removing barriers to progress by connecting students to appropriate resources including referrals to the Mental Health counselor, Disability Support Services, Financial Aid, Single Parents Program, etc. We request an on-duty coordinator to manage the summer classes, provide advising, and manage changes to the Fall class schedule and staffing over the summer months. Our program has one 11-month faculty member who could perform these functions as part of his summer duties. However, this faculty member will retire soon leaving the IT Program without a summer coordinator.

Efficiency

The program is rated "Healthy" in terms of efficiency. The program's classes enjoy a high fill rate, showing that it has been successful in matching the number of courses and sections offered to the true demand for those classes. Counselors and faculty have worked cooperatively to both recruit students and match them with appropriate courses. We are now at full staffing levels with 6 full-time ITS faculty.

Effectiveness

Effectiveness indicators, while mixed, point out areas in which the program can improve, and

reflect that some students are still not adequately prepared for the rigors of the IT field. The Successful Completion rate of 71% shows no improvement from the year before; withdrawals Fall to Spring persistence changed significantly. Fall to Fall Persistence is remains steady, but Degrees and Certificates Awarded fell significantly. This can be attributed as least in part to the booming economy and the low unemployment rate in the local IT business community. The program will also continue efforts to provide tutoring services in the newly-renovated Kōpiko Learning Community which was designed to foster interactive learning and facilitate access to tutors and instructors.

Unfortunately, budget deficits have moved the program backwards with regard to both staffing and tutoring. With the new fiscal year, efforts will be renewed to restore and increase funding in both of these areas.

The number of withdrawals is most likely a reflection of the effectiveness of our counseling services, getting students out of classes they are having trouble with. ICS 100 and ICS 101 are now included in these numbers though not all students in these courses will be IT majors; and these courses have historically been labeled as "Gatekeeper" courses as success rates for these students often fall below the 70% mark.

Two other efforts to address the effectiveness of the program are funding for a counselor and also an IT program coordinator over the summer months. Summer is when many students make their plans for the coming year and reach out for advising, whether they are taking summer classes or not. The availability of a counselor and coordinator during this time will help students pick the right majors and the right classes, increasing persistence.

To increase retention and completion of our students and to (continue to) meet Effectiveness indicators, professional counseling and academic advising support is crucial year-round including during the summer. This support includes, but is not limited to, outreach methods such as classroom visits, eblasts, website, and advising sheet updates. Counselors have strong connections with advisory boards, industry, and 4-year institutions in order to provide accurate information to students as they make informed choices about transitioning to careers and higher level degrees. Our program requests hiring counselors during the summer to provide these essential services for students. We also request an on-duty coordinator to manage the summer classes, provide advising, and manage changes to the Fall class schedule and staffing over the summer months. Our program has one 11-month faculty member who could perform these functions as part of his summer duties.

Distance Education

The Distance Education section reflects courses in both the ICS and ITS alphas. The program typically offers three to four ICS 100 and ICS 101 courses online per semester as well as several ITS courses per semester by distance. The demand for these online courses is high; however, their level of difficulty is also high. Studying technology-heavy courses using technology at a lower-division level can be extremely challenging. The lower numbers this year simply reflect a lessening in demand. As the economy has improved, registration has decreased.

Alignment with mission: Strengths and weaknesses based on analysis of data.

Currently, the Information Technology program's operation is nearly in alignment with its mission. Although it has taken several years to get to this place, we are striving our very best to stay the course.

Our program's three main missions are: 1) insuring that our graduates possess the necessary IT skills and knowledge to enter the workforce upon graduation, 2) preparing students and graduates to move seamlessly and successfully to UH Mānoa, UH Maui College, UH West Oahu, and other four year institutions, and 3) providing lifelong learning opportunities for Hawai'i's workforce that are designed to improve workforce skills and career progression and in a manner that is convenient to the incumbent workforce.

While our placement rate is currently above 50%, we believe we can do better. It will always be somewhat problematic to place our "C" students into upwardly mobile positions, it is still possible

to place them into entry level jobs where they can learn and grow. Our "A" and "B" students have little trouble in placement; for example, we've placed graduates in C&C Honolulu, State of Hawai'i, and US Federal positions regularly. We need to become healthier.

We need to better help our struggling students become more proficient IT workers. We are hopeful the new student placement officer and Web site will help in this area.

The SLO assessment will assist us in examining program and course outcomes. The assessments will be used to identify areas where we can increase proficiency in basic knowledge concepts, theory, and process and proficiency in application skills. This will lead to our students being more competitive in the marketplace.

For Mission #2, we have had some difficulty getting our AS IT students articulated with programs at four year institutions in Hawai'i. We have made several overtures to UH Mānoa's Shidler College of Business's Information Technology Management (ITM) Program. However, for various reasons, they have not accepted our students' course work as we have always hoped for. At this time, our IT courses remain electives and do not fit into their requirements.

However, we have made great strides in developing an articulation agreement with UH West Oahu. We have designed and articulated this third year APC in Information Technology, as well as Bachelor of Applied Science in Information Security and Assurance (ISA), that "seamlessly" transfers to UHWO. We have also recently completed an articulation agreement with UH Maui College for their Bachelor of Applied Business and Information Technology (ABIT). This agreement will accept all of our ITS courses from our AS in IT, as well as our 300-level APC courses, for a total of 89 transferrable units which can be applied to the ABIT required courses.

For Mission #3, we are always updating our curriculum to reflect upgrades and trends in the industry. All courses teach the very latest in software tools. We are constantly keeping the pulse of industry and provide the most current applications that our budgets allow. In addition, we have created short tech-specific certificates that attract people already in the workforce to come back and get a skills upgrade. In fact, we have many working IT professionals in our classes. We have certificates of competence in: programming, database administration, help desk support services, Cybersecurity and as of Fall 2019, Data Analytics. We have also striven to schedule these courses in such a way to allow completion of the certificates in two semesters whenever possible.

Evidence of Quality

There are several factors that would indicate a quality program: faculty with higher education credentials—minimum bachelor's degree, most with master's degree, and two with doctorates,

many also with professional industry certifications; currency of program technologies; expansion to BAS; and even IT graduates' GPA.

As stated earlier, we have made a very concerted effort to maintain technological currency in our program. Both software and hardware are kept up to provide students with learning opportunities using the products they would most likely find in the workplace. This, too, demonstrates a quality program.

As technology changes and grows, so do the demands for increased training. This additional training almost always rests on the foundation of earlier, legacy technologies. Ultimately, the curriculum grows and we are forced to create a new pathway for IT workers who want to continue their studies. To this end, we have worked to develop an Advanced Professional Certificate that, along with our AS in IT, will transfer wholly to UHWO into their BAS with a Concentration in IT Program as well as UHWO's new BAS in Information Security and Assurance. This APC also transfers to UH Maui College's new Bachelor of Applied Business and Information Technology. These expansions also reflect a quality program, a program that is responsive to community and industry needs, and grows at an appropriate rate.

Our IT graduates have been steadily improving, I believe, as a result of our tutoring/mentoring efforts. Unfortunately, as our tutoring budget has been drastically reduced, so has the number of students we've been able to service.

Evidence of Student Learning

Resource Sufficiency

Although we have just recently hired 1 additional IT faculty, our 3rd year program has gained in popularity and students opt for the UHWO BAS, or UH Maui College ABIT transfer options. These are advanced specialized ITS courses, and so it is difficult to find and keep faculty to teach them. The college needs to recognize this in its hiring and salary decisions if our 3rd year program is to continue.

In any case, current faculty need to constantly keep up with trends in technology. To that end, the college needs to support these efforts through earmarked professional development funding for faculty to learn the latest technologies. In addition, equipment and software resources need to be

maintained. Industry average is a 3-year cycle for both hardware and software. Our current classroom and lab computers are 7 years old and in need of replacement. If we are to provide training for 21st Century IT workers, we need to train our students with 21st Century IT products. Nothing less will suffice. To this end, we are interested in learning how we might attach a “supply fee” or “technology fee” to courses to help offset the College’s expense in funding these expenditures over the long haul.

There has been a marked surge in distance education courses both offered and taken and the IT program has embraced this challenge by sending 4 faculty members to the Kapi’olani Teaching Online Preparation Program (TOPP); an entirely online training program for instructors who will be teaching online for the first time or are looking for ways to improve current practices.

If we are to support our current students and hopefully grow the program, we need to be sure to provide students with access to the necessary resources to be successful. These resources include, but are not limited to: a comfortable learning environment both in the classroom and in an “open learning” space; access to faculty and mentors for help and clarification; access to community resources for cultural foundation and growth.

Perkins

The program met 3 of the 6 Perkins goals. Student placement is one area where goals were not met, not surprisingly given cuts to peer tutoring and support staff. Student placement remains an area for continued focus and in need of improvement. The anticipated hiring of a job placement officer for the college is expected to help in this area.

External

Enrollment in the program has decreased due to the recent improvement in the local and national economies. Transfer to the UHWO BAS IT program also remains strong. Information Technology continues to be a high-demand and growing field in the state as in the nation, and in the world, for that matter.

Our new articulation pathway for UH Maui for the ABIT will continue to attract more students.

Hawai'i Planning Context:

1. Globalizing Economy and Environment

- a. Economic and technological forces are causing American business and industry to retrain current employees and support the training of future employees with new skills and attitudes for a knowledge-intensive global economy. At the same time, deterioration in the global ecosystem requires heightened attention to ecological sustainability on campus and in the community. Opportunities for “greening” existing certificate and degree programs as well as service-learning and other student learning activities need to be pursued.
- b. The program’s Advance Professional Certificate was designed in part for professionals wishing to retool or refresh their skills. We continue to adjust and expand our course offerings under the APC program, including advanced topics in emerging technologies.

2. Escaping the low wage, low skill trap

- a. In terms of purchasing power, Hawai'i's per capita income is approximately 75 percent of the U.S. average. In 2003, Hawai'i ranked 43rd in the nation for growth in average pay; 47th in industrial diversification; 49th in home ownership; 50th in long-term employment growth, and 50th in involuntary part-time employment (2003 Development Report Card, Corporation for Enterprise Development). The alternative to losing highly educated Hawai'i youth to the U.S. mainland is to develop the capacity of local business and enterprise to generate new, high-valued goods and services and higher-skilled jobs. The combination of an overall labor shortage, the “brain drain” of Hawai'i's better educated youth, and the increasing labor force participation by new immigrants, is expected to create an economic crisis within the next 5-10 years. Hawai'i is not preparing enough of its people for higher-skilled jobs (nursing, health, education, hospitality, tourism, social work, and others) in the current economy and in the knowledge-intensive science and technology economy it hopes to create.
- b. We continue to update our courses and the currency of our instructors in order to impart our students with the skills required to enter the technology economy. We validate this with our IT Industry advisory board on a yearly basis.

3. Emerging Opportunities Identified – Need for Institutional Innovation

- a. For the state of Hawai'i, six emerging growth sectors have been identified: a) Life Sciences/Biotechnology; b) Information Technology; c) Film and Digital Media; d) Dual- Use Technologies related to the Defense industry; e) Diversified Agriculture; Technology integration in Hospitality and Tourism. Campuses need to integrate innovative curriculum, engaging pedagogies, and appropriate and advanced technologies for enhanced student learning.
- b. As Information Technology continues to be a growth sector, demand for the Information Technology program and classes remains strong. We continue to grow and expand the AS program, such as with the recent additions of Cybersecurity and Data Analytics as required

knowledge pillars within the program.

3. Assessment Results for Program SLOs

Program Learning Outcomes:

1. Design and develop software solutions for contemporary business environments by employing appropriate problem-solving strategies.
2. Configure and administer database servers to support contemporary business solutions.
3. Configure and administer networks to contribute to contemporary business solutions.
4. Design, and develop web solutions to address contemporary business objectives.
5. Learn future technologies through acquired foundational skills and knowledge and employ them in new business environments.
6. Practice communication, problem solving and decision-making skills through the use of appropriate technology and with the understanding of the business environment.
7. Demonstrate knowledge of current information, network, and cyber security issues and implement best practices in mitigation and recovery.

	Year/Semester of Assessment
PLO #1	Fall 2015*
PLO #2	Fall 2014
PLO #3	Fall 2013
PLO #4	Fall 2009
PLO #5	Spring 2016
PLO #6	Spring 2016

Changes made as a result of findings

In Fall 2013, SLO #3 was assessed.

Take-away/plans for improvement:

1. The grading rubric was questioned, as at least one student who did not appear to have achieved the learning outcome nonetheless received a passing (meets expectations) grade (26/35 or 74%). As a result it was suggested that the grading rubric and weighting of the various components of the exercise be reexamined.
2. The value of simulation tools like Packet Tracer and the ability to simulate networks and network devices within a computer environment was reaffirmed. It was suggested to explore other simulation tools that might be available.
3. Several students did not document their submission in exact accordance with the instructions,
4. naming conventions. It was suggested that students could benefit from more training in precise documentation and in following instructions/directions more precisely. This exercise and similar exercises could be a vehicle for that training
5. In Fall 2014 the IT faculty designed and implemented a rubric to assess PLO #2. Take-aways/plans for improvement:

6. Make sure students have a clear understanding of the instructions. One instructor pointed out that there was some ambiguity in one of the steps.
7. Instructor will rewrite the instructions to take out ambiguity.
8. Assess their prior knowledge required to complete the project.
9. Instructor will provide a review of prior class and relate topics with current assignment.
10. Some students did not capture screens for grading. Need to find out why.
11. Instructor will survey students to find out what kind of difficulty they had in capturing screens to turn in. Give short tutorial before assignment.

12. In Spring 2015, SLO #4 was assessed. Take-aways/plans for improvement:
13. Students should include a business problem statement as either part of their documentation or reflection to determine if a business problem is truly addressed
14. Instructor should require milestones through the project to help correct any development issues
15. Change the sub SLOs to something like: "To what extent has...." rather than "Has..." to avoid
16. an either/or assessment and give assessors more leeway in the process.
17. An assessment of SLO #1 was assigned and planned for Fall 2015. Unfortunately, the faculty member responsible left on leave without completing the assessment or providing the necessary artifacts.

Part VII. Tactical Action Plan—Business, Legal and Technology Education Department

1. Department Action Plan

The Business, Legal, and Technology Department does not have a current action plan.

Mission Statement. The mission of the Business, Legal and Technology Education Department of Kapi`olani Community College is to provide the opportunity for access to quality programs designed to meet the needs of students, industry, and community. Upon successful completion of these programs, students should possess the academic foundation and practical skills to apply quality accounting, information technology, marketing and paralegal skills essential in a rapidly changing world.

2. Program Action Plan

Long term plans for the Information Technology program are guided by the college's strategic plan. The actions indicated in this report provide measures which will align with the college's strategic plan.

Action plans include:

- 100 students completing the new Cybersecurity Certificate of Competence by 2020.
- Offering all of the Certificate of Competence in Cybersecurity courses online by 2020.

- This goal aligns with strategy A1B of Performance measure 1: “developing better communication technologies and appropriate distance learning courses and pedagogies” and A4, “Increase certificate and degree completion by Native Hawaiian students from 64 to 105 per year.”
 - o Also aligns with B5A: “Increase the number and improve the quality of alternative delivery classes: online classes; hybrid classes, team-taught classes and learning communities.”
 - o Further aligns with E2A: “Increase the quantity and quality of courses and programs available to students through online, distance and off site learning methods.”
- Faculty Professional Development: 2 professional development events/conferences per year per faculty member over the next 5 years.
 - o Aligns with E1: “Recruit, renew, and retain a qualified, effective, and diverse faculty, staff, and leadership committed to the strategic outcomes and performance measures. Increase professional development funding by three percent per year. . .”
 - o Also aligns with E2: “Strengthen faculty and staff development to increase by one every two years the number of programs that can be completed by students in underserved regions via distance and off-site learning.”
- Continually adapting our curriculum to emerging technologies such as mobile devices, robotics, etc.
- Continued partnership with UHWO, and development of a new articulation agreement in Information Security Assurance, a very "hot" area in IT.
 - o Collaboration and articulation with UHWO is consistent with A4K and B4L, “Develop, evaluate, and improve articulation agreements with UH system campuses.”
 - o Also aligns with D1D: “Strengthen workforce development relationships with UHM, UHWO, and UHH to explore 2+2 degree partnerships.”

- Collaboration with other IT programs to incorporate institutional best practices. Continue to work with UH System office to develop a system wide program on cyber security. The program will also continue to strengthen regional ties through organizations such as CyberWatch West.
- Continued recruitment efforts through a reach down into our service courses (ICS) as well as through other means.
- Faculty and counselors will continue efforts to improve retention/persistence through tutoring, counseling and other interventions so that more of our students are able to realize their goals of working in the IT industry. This will require funding for student tutors, summer counseling, and summer IT program coordination/advising.
- Collaboration with specialty to the the IT Industry Advisory Council and a review of occupational codes related to this area of program will ensure that its offerings accurately reflect the current industry requirements.
- Partnerships with commercial, professional and educational organizations such as CompTIA, Microsoft, and VMware, EMC, and Cisco Academy.

CTE Internship Collaboration Model

- The CTE programs at Kapi`olani (ACC, CULN, HOST, IT, MKT, LAW) are collaborating around an innovative solution for a hospitality workforce urgent need. The goal is to create a powerful academic and operations partnership that delivers an enhanced training component to the current academic programs course sequences increasing energy and excitement for students to better persist and complete while providing them a direct pipeline to the hospitality industries employment demand for all CTE career pathways.
- The Host Sector Partnership is an industry-led collaboration of CEOs and Executives of Hospitality and Tourism organizations in Hawaii. The Partnering with Education Committee has been collecting information on hospitality industry training programs, enrollment, and graduation for the sector's highest in-demand jobs. (October 2018). They would like to now focus on identifying critical occupations and streamlining internships, externships and other work-based learning opportunities.
- The Collaborative "Ignite" Internship Experience is a collaboration of CTE programs, faculty, administrators, program coordinators, and students... an "Interdisciplinary Innovation Center"

that leverages the culinary and hospitality industry as a powerful connection for our CTE students who are seeking and discovering a career pathway with upwardly mobility opportunities for career expansion and earning opportunities for the “Ignite” internship experience completers.

- CTE programs have submitted and received approval (April-2019) for a \$200,000 collaborative Perkins Grant along with growing corporate partnerships to provide support for the development, engagement, scaling of the concept, and sustainability strategy for the Ignite Collaborative Internship Program.

Part VIII. Resource and Budget Implications

Information Technology Program Resource Requirements

Technology is required to teach technology. Lecturing in the abstract about various technologies cannot replace hands-on experience with software and equipment. Current equipment is required in order to teach current technologies. Outdated equipment results in the teaching of outdated technologies, student dissatisfaction, and reduces the hireability of graduating students.

The primary classroom for ITS courses is Kopiko 101A. This classroom is equipped with 4-year old computers. Four years represents a generation in Information Technology time. Five-years is the maximum expected lifetime for computer equipment.

Over the next 1-2 years, the 23 computers in classroom Kopiko 101A will have to be replaced. The estimated cost is \$1500 each for a total of \$34,500. Once the classroom computers are updated, it will be necessary to duplicate the classroom environment in the open lab in order that students may work on homework and projects and move seamlessly between the classroom and the lab environments. The open lab consists of 36 computers. Updating the lab area will cost approximately \$54,000.

The program will seek restoration of funds for tutoring for IT classes in the Kopiko 101 open computer lab. The estimated amount for this is \$15,000-20,000.

Renewing memberships to Microsoft Imagine and VMWare Academies will allow for the use of current software development tools found in industry in the classrooms and by the students. The software is free for students because of the memberships. The cost for both memberships is

~\$2,000. Microsoft Office upgrades for all classrooms, lab, and instructor workstations are necessary to continue to provide training in current business applications with a cost of approximately \$65 per license. The program requires approximately 165 units for all classrooms, labs, and instructor workstations. Total cost for Microsoft Office upgrade is \$10,725 every two to three years.

The ITS 144 Computer Maintenance course and ITS 124 Networking course require a budget of \$1,500 per semester to upgrade Raspberry Pi devices, and replace tools and consumable items such as Ethernet cable and RJ45 clips.

To promote the adoption of the Open Educational Resource (OER) initiative (aka: zero cost text books), our IT faculty have come up with a plan to create our own IT texts in curated-content format. We would update these resources every two years and provide them at no cost to our students. The creation of the original, and scheduled updated content would take release time for all participating full-time faculty at a cost of ~\$60,000 in the first year and ~\$30,000 per year after that. The IT Program would then publish the books on a digital publisher like Amazon's Kindle format and deposit the proceeds into the UH Foundation account for the IT Program.

All IT faculty should participate in some sort of continuing professional development such as attending IT conferences. These expenses should amount to ~\$12,000.

The IT Program has a significant need for tutors in the Kōpiko Learning Center (KLC). We need to budget for ~\$30,000.

To support hands-on experience in Network Security and Ethical Hacking, the IT Program faculty will build a virtualized network. This environment will be a safe sandbox for labs so that students cannot possibly harm any other computer or network while learning how hackers perform exploits. The cost of this virtualized sandbox will be ~\$20,000.

The IT Program plans to reduce expenses by hosting fewer servers on campus. Instead, the program will use virtual machine (VMs) servers hosted at the new IT center at UH Mānoa. This eliminates the requirements of hardware replacement for older equipment and defers a substantial cost in electricity. The cost of hosting these VMs at Mānoa will be ~\$8,000.

Some full-time faculty have computers and/or printers that are in need of replacement. The replacement cost for this equipment will be ~\$10,000.

In 2019, the IT Program Advisory board recommended adding management and security of low voltage Internet of Things (IoT) devices to our curriculum. To effectively teach this content, we need to use the latest Raspberry Pi kit (a self-contained single processor circuit board with low

energy on-board Wifi, Bluetooth, usb ports, and running the Linux operating system). The cost of these kits is ~\$50 per item and we will need at least 30 at a cost of ~\$1,500.

In order to obtain and maintain the NSA designation of Center of Academic Excellence (CAE) in Cyber Defense for Kapi'olani CC, we need to continually engage with the NSA and their cyber centers on the mainland as well as UH Maui College. This will take a budget of ~\$10,000 for travel, lodging, M&IE, etc.

In order to provide the highest quality experience for our students, we plan to engage with our local business community by asking leaders in the IT field to mentor our students for capstone projects. We would like to provide stipends to the mentors and request a budget of ~\$5,000 per year to help with this initiative.

The program is pursuing other funding opportunities to create a smooth IT vendor certification process that would easily allow highly qualified students in our program to additionally acquire valuable IT vendor (e.g., Microsoft, CompTIA, etc.) certifications that would enhance their employability. In addition, we are looking at alternative ways to acquire high-end equipment that would give students exposure to emerging technologies in our new lab.

IT Program faculty have been working to implement a flipped classroom model in some classes. Toward that end, 6 copies of Camtasia at \$280 each are requested for content development purposes.

The program purchased a Netlab+ virtual lab environment from the Dell and NDG companies using TAACCCT grant funds. This equipment is now obsolete, and the IT Program must find another solution to replace this vital student resource. We currently need to increase the IT Program's capacity to support virtual environments for Cybersecurity, Networking, and Data Analytics; all of which require substantial supporting computer hardware such as memory and storage capacity. We need to create a virtual lab environment and need ~\$20,000 to complete this replacement project.

Departmental Resources:

Apart from the specific resources related to the program, there are department-wide activities requiring resources to generally support all of the programs in the department. The Business, Legal and Technology Education Department (BLT) will seek a combination of campus funds, general funds (faculty investment of time and energy), special funds, grants, private donations and other campus support services to ensure the achievement of four planned outcomes.

Marketing Materials, \$5,000 per year

Accrediting Commission for Business Schools and Programs (ACBSP) Membership Dues, \$1350 per year.

Student Engagement Activities – Approximately \$5,000 per year

Tracking certificates, degrees, transfers – to be determined

Student tutors, peer mentors (Restoration of funding plus additional funding for renovated lab and classrooms extended hours of usage – See reference to BLT Technology Plan below Student Fee Collection – College and departmental support; to be determined Equipment/Supplies – See reference to BLT Technology Plan below

Professional Development – Approximately \$12,000 per program (Accounting, Information Technology, Marketing and Paralegal) per year

The CTE programs at Kapi`olani CC (ACC, CULN, HOST, IT, PARALEGAL, and MKT) all share the following resource needs:

- Awareness outreach support
- Student Success Pathways support
- Tutor support
- Summer advising support
- Technology resources

Program Support

The Business, Legal, and Technology department requests that Position 0078295T, Academic Support: Educational Specialist – Tony Yi be converted to a permanent FT APT position. This position is primarily concerned with addressing the information technology (IT) infrastructure and instructional needs of the department.

The position is responsible for the maintenance, troubleshooting, recording, and deployment of a majority of the BLT department technology assets. This position is also tasked with the purchase of the department's technology needs in conjunction with the department secretary and CELTT, and is familiar with the University's rules and regulations in

this regard, as well as their associated Administrative Procedures.

The position oversees the BLT computer lab and classroom, responsible for supervising the lab assistants and tutors, managing daily operations, scheduling BLT room reservations both within the department and with other departments, and other ancillary tasks.

The loss of this temporary unbudgeted position due to any budget crisis or cutbacks would be very damaging to BLT operations and service to our students. This is critical position and should be given the appropriate permanency and consistency for support the BLT department programs – Accounting, IT, Paralegal, and marketing/entrepreneurship.