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University of Hawaii Community Colleges Annual Report of Program Data Analysis Preview

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PREVIEW

College: Kauai Community College Program: Facilities Engineering

The last comprehensive review for this program was on 2007, and can be viewed at:

<http://www.hawaii.edu/offices/cc/arpd/instructional.php?action=quantitativeindicators&year=2015&college=KAU&program=201>



Program Description

The Facilities Engineering Technology (FENG) program will prepare individuals for employment in jobs requiring multiple maintenance competencies. These competencies will allow graduates to obtain general maintenance positions in a variety of industries. Graduates will have gained knowledge in electrical applications and practices; refrigeration and air conditioning systems; basic plumbing installations and repair; and drywall, painting, and construction methods. The program has been revised in response to industry needs.

Part I. Quantitative Indicators

Overall Program Health: **Healthy**

Majors Included: FENG Program CIP: 15.9999

Demand Indicators		Program Year			Demand Health Call
		12-13	13-14	14-15	
1	New & Replacement Positions (State)	227	218	218	Healthy
2	*New & Replacement Positions (County Prorated)	20	20	20	
3	*Number of Majors	33	30	25	
3a	Number of Majors Native Hawaiian	5	6	4	
3b	Fall Full-Time	13%	19%	11%	
3c	Fall Part-Time	87%	81%	89%	
3d	Fall Part-Time who are Full-Time in System	0%	0%	0%	
3e	Spring Full-Time	4%	11%	0%	
3f	Spring Part-Time	96%	89%	100%	
3g	Spring Part-Time who are Full-Time in System	0%	0%	0%	
4	SSH Program Majors in Program Classes	262	207	177	

5	SSH Non-Majors in Program Classes	244	169	152
6	SSH in All Program Classes	506	376	329
7	FTE Enrollment in Program Classes	17	13	11
8	Total Number of Classes Taught	18	15	15

Efficiency Indicators		Program Year			Efficiency Health Call
		12-13	13-14	14-15	
9	Average Class Size	11.5	11.3	9.3	Cautionary
10	*Fill Rate	81.4%	84%	66.1%	
11	FTE BOR Appointed Faculty	0	0	0	
12	*Majors to FTE BOR Appointed Faculty	0	0	0	
13	Majors to Analytic FTE Faculty	20.7	23.8	19.3	
13a	Analytic FTE Faculty	1.6	1.3	1.3	
14	Overall Program Budget Allocation	\$81,730	\$83,944	\$69,734	
14a	General Funded Budget Allocation	\$79,832	\$81,377	\$67,124	
14b	Special/Federal Budget Allocation	\$0	\$0	\$0	
14c	Tuition and Fees	\$1,898	\$2,567	\$2,610	
15	Cost per SSH	\$162	\$223	\$212	
16	Number of Low-Enrolled (<10) Classes	3	3	7	

*Data element used in health call calculation

Last Updated: October 7, 2015

Effectiveness Indicators		Program Year			Effectiveness Health Call
		12-13	13-14	14-15	
17	Successful Completion (Equivalent C or Higher)	83%	92%	88%	Healthy
18	Withdrawals (Grade = W)	8	0	1	
19	*Persistence Fall to Spring	53.8%	68.7%	62.9%	
19a	Persistence Fall to Fall	46.1%	40.6%	29.6%	
20	*Unduplicated Degrees/Certificates Awarded	7	10	11	
20a	Degrees Awarded	0	0	0	
20b	Certificates of Achievement Awarded	0	0	0	
20c	Advanced Professional Certificates Awarded	0	0	0	
20d	Other Certificates Awarded	7	10	16	
21	External Licensing Exams Passed	Not Reported	Not Reported	N/A	
22	Transfers to UH 4-yr	0	0	0	
22a	Transfers with credential from program	0	0	0	
22b	Transfers without credential from program	0	0	0	

Distance Education: Completely On-line Classes		Program Year		
		12-13	13-14	14-15
23	Number of Distance Education Classes Taught	0	0	0
24	Enrollments Distance Education Classes	N/A	N/A	N/A
25	Fill Rate	N/A	N/A	N/A
26	Successful Completion (Equivalent C or Higher)	N/A	N/A	N/A
27	Withdrawals (Grade = W)	N/A	N/A	N/A
28	Persistence (Fall to Spring Not Limited to Distance Education)	N/A	N/A	N/A

Perkins IV Core Indicators	Goal	Actual	Met
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2013-2014				
29	1P1 Technical Skills Attainment	91.00	100.00	Met
30	2P1 Completion	47.00	57.14	Met
31	3P1 Student Retention or Transfer	75.21	72.73	Not Met
32	4P1 Student Placement	68.92	62.50	Not Met
33	5P1 Nontraditional Participation	17.50	5.41	Not Met
34	5P2 Nontraditional Completion	16.00	0.00	Not Met

Performance Funding		Program Year		
		12-13	13-14	14-15
35	Number of Degrees and Certificates	0	0	0
36	Number of Degrees and Certificates Native Hawaiian	0	0	0
37	Number of Degrees and Certificates STEM	0	0	0
38	Number of Pell Recipients	8	8	7
39	Number of Transfers to UH 4-yr	0	0	0

*Data element used in health call calculation

Last Updated: October 7, 2015

[Glossary](#) | [Health Call Scoring Rubric](#)

Part II. Analysis of the Program

DEMANDS: In the report of Program Data for Facilities Engineering we have a Healthy rating in "Demand." This reflects a need for filling positions in the areas that the FENG program offers. This has always been our experience in our evaluation of the students attending our program, they and their employers are understanding the value our program offers. In surveying our students they are looking at both advancement within their employment or desiring to gain additional skills to hold their positions with an unfavorable economic status that exists today. In addition, in evaluating the courses and our graduating students, that it is typical for FENG graduates to have several classes worth of credits beyond what is necessary to graduate. It should also be noted that the majority of our students work full time, but have made the sacrifice of attending afternoon and evening courses to further their education.

EFFICIENCY: The efficiency indicator is cautionary this year. This indicator is based on fill rate and major to FTE faculty. One full time faculty instructor and program coordinator was hired for the Carpentry and Facilities Engineering Programs in January 2014. Program concerns are being worked on. To help guide the program an advisory board was established in Spring 2015. The FENG Program Coordinator is working with the Advisory Board to update courses, program pathways, and job placement.

EFFECTIVENESS: Despite the ratio of graduates being lower than the number of available jobs in the county, our program rating was still considered to be Healthy. The program is not graduating quite as many students as it needs to in order to fulfill the work force needs of the community. The fall to spring persistence rate has gone down from 69% to 63%. The statistics are difficult to track because many of the FENG students work full time and attend KCC part time. Many students are on different tracts on course completion which make the data collection very unpredictable.

Based on this data, a reasonable conclusion could be that the program should concentrate efforts on both attracting new students and on keeping current majors interested in FENG and on track in the program. This would improve student persistence, graduate more students, and fill the workforce needs of the community.

Taking a quick look at the majors from this academic year shows that FENG has 89% part time students in the Fall and 100% part time students in the Spring. This indicates that many of our students must work to support themselves, but they are committed to the program despite having to work. Educating employers on the validity of the program may give students additional support and flexibility to attend classes. Another possible action would be to make efforts to get students to enroll in more classes at a time so that they can complete the program more quickly. This might make sense because students who face a long road towards getting their degree or certificate have a greater tendency to drop out, either due to being discouraged with their progress or because of work, family, or other reasons outside of the college.

PERKINS: We have met the Perkins Core Indicators in the areas of Technical Skills Attainment and Completion. We recognize that more effort is needed in the areas of retention, placement, non-traditional students/non-traditional completion. One of the responsibilities of the new program faculty is to focus on these areas. One concern I have on this data, is whether or not the identification of nontraditional students was executed correctly. Traditionally, many if not most of our FENG students have been nontraditional students.

Part III. Action Plan

Goal Alignment UH System Goals, Kaua'i Community College Goals, and Strategic Goals	Program Goals
<p>H Goal 1: Educational Effectiveness and Student Success</p> <p style="padding-left: 40px;">KCC Goal 1: Access &</p> <p style="padding-left: 40px;">KCC Goal 2: Learning and Teaching</p> <p>Strategic Goals: Student Recruitment, Retention and Success of All Students and Particularly</p> <ul style="list-style-type: none"> • Native Hawaiian students • Increase success of Remedial/Developmental Students, focusing particularly on reading • Non-traditional Students in Career and Technical Programs • Increased Completion of Degrees, Certificates, and Licensure • Increase outreach to k-12 to improve college preparation and to ensure that students are aware of specific opportunities that KCC provides, recognizing that outreach must not be limited to high schools <p>Relevant Curriculum Development</p> <ul style="list-style-type: none"> • Sustainability/Green Jobs/Effectiveness and Sustainability of the KCC environment • Health and/or Safety Issues • DOE-KCC English Alignment • Improve the quality of distance education by addressing student readiness, the course development process, diversity of offerings, assessment and delivery methods (mobile learning) • Increase overall retention and persistence to graduation or transfer (identify goals and track by disaggregated groups), with an additional focus on STEM degrees and certificates • Improve the facilitation of integrative/critical thinking in courses <p>Completion of</p> <ul style="list-style-type: none"> ◦ Course and Program Student Learning Outcomes (SLOs) ◦ Course Action Forms (CAFs) <p style="padding-left: 40px;">Assessment Activities and Analysis</p>	<p>To Provide the necessary training and education in the areas of study that are important for positions in both the trades as well as the building maintenance facility engineering industry.</p> <p>Our Construction Academy program is actively involved in bringing to the high schools as well as the middle schools the assistance to the DOE in preparing and exposing the students to the career paths of building trades and building design.</p> <p>The FENG program has imbedded both sustainable and green building methods and techniques by supporting the professional development of our instructors along with the introduction of new technologies in renewable energy and energy efficiency.</p> <p>In assessment of our curriculum, endorsement from industry is an extremely effective indicator. The FENG advisory board was started in Spring 2015 and will continue to examine where the program is at now and where we want to be in the future.</p> <p>Making courses more accessible to students via flexible course scheduling.</p>
<p>UH Goal 2: A Learning, Research and Service Network</p> <p style="padding-left: 40px;">KCC Goal 3: Workforce Development & KCC Goal 5: Community Development</p> <p>Strategic Goals: Increased Job Placement and/or Performance through</p> <ul style="list-style-type: none"> • Revised or New Curriculum • Better Coordination with Business and Industry 	<p>Our offering of renewable energy and energy efficiency courses have prepared individuals for nationally recognized certificates in Solar Thermal and Photovoltaic installations and maintenance.</p> <p>Develop new partnerships with and agreements with hotels and other employers to help promote and validate our</p>

Goal Alignment UH System Goals, Kaua'i Community College Goals, and Strategic Goals	Program Goals
	FENG certificate.
UH Goal 3: A Model Local, Regional and Global University KCC Goal 6 Diversity Strategic Goals: <ul style="list-style-type: none"> • Fostering Global Understanding and Intercultural Competence • Increased Enrollment and Success of International Students 	Providing instruction that meets both today's needs as well as those of tomorrow by keeping up and relevant to the trends of the industry.
UH Goal 4: Investment in Faculty, Staff, Students and Their Environment KCC Goal 4: Personal Development Strategic Goals: <ul style="list-style-type: none"> • Professional Development Directed to Any of the Above Goals • Enriching Student Experience, Particularly Directed to Any of the Above Goals • Increasing the Efficiency, Effectiveness and Sustainability of the KCC Environment 	Professional Development for instructors is needed in areas of building energy efficiency, and application of the new energy codes in both designing and building a home or other commercial buildings. Having the instructors certified as professionals by the industry they are helping is extremely important. Third part accreditation is currently being explored.
UH Goal 5: Resources and Stewardship KCC Goal 5 Community Development Strategic Goals: <ul style="list-style-type: none"> • Reduce Deferred Maintenance • Address Health and Safety Issues • Promote Sustainability 	Our program is focused on sustainability, green practices, and efficiency. Many of our courses study and address campus needs through service learning on campus.

ACTION PLAN

The FENG program's educational effectiveness is maintained through the instructors experience and introduction of the new methods and technologies in their respective fields. Along with providing the ability for students to be exposed to the new materials being developed and the ability to gain insight into the understanding and exposure of how to utilize the new technologies being offered, all the instructors in the program are working professionals in their respective field. This combination provides the students with an industry-based experience that combines the classroom learning, hands-on practical application and problem solving techniques that are industry relevant.

The program's goals with respect to employed students is to offer a path for advancement within their career path relating to facilities engineering, by offering courses that will increase their worth to an employer. In addition, the program offers individual paths for those that desire additional training in specific disciplines found in facilities engineering, electrical installation, construction technology, and other areas of study offered at Kauai Community College.

This will be accomplished through building of relationships with the industries that are involved with the program's course content. The economic development of the county is focused on six cluster areas of development. All of these areas have a direct need for both construction projects and the maintaining of these facilities. The program offers education and training that will assist these Kauai industries to involve Kauai companies to help with the growth of these industries.

In the areas of new and emerging technologies, both Green and Sustainable Construction and Alternative Energy, the projected growth indicates a need for trained individuals. The Solar Foundation's first annual report indicates a 30% growth in alternative energy for Hawaii

statewide. In addition a report from the state "Hawaii Green Jobs" indicates an even larger number as this report takes into account existing occupations that with additional training can realize growth in these areas. In meeting with the state representatives, their data is skewed by the fact that the qualifications of certain positions they uncovered were in demand had adequate people available, were not based on those people having any nationally recognized certificates to prove their ability. Hawaii ranks 6th in the nation in the amount of photovoltaics installed, but we only have, at this time 15 individuals that have this certification. Our building codes require all new home construction to have thermal hot water systems. The state does not have any individuals with the North American Board of Certified Energy Practitioners (NABCEP) Solar Thermal Certification.

Action Plan(s)

Program Goal & Campus Strategic Priority or Goal	Action Item	Resources Needed	Person(s) Responsible	Timeline	Indicator of Improvement	PLO impacted	Status
Campus goal #1 Student recruitment and retention.	Provide a continuing learning environment for the students	More room, to maintain this model as we expand our offerings in additional courses	Justin Carvalho, all the part time instructors of the FENG program, FENG Advisory Board	Ongoing	Maintain and improve on current statistics.	The objective of the program is being attained through alignment with industry standards and input from our industry partners.	In the future our ability to continue may be limited due to space requirements and the needs of other programs needing to utilize the same space.
Continue to develop and maintain FENG Advisory Board Participation	Build FENG Advisory Board comprised of industry experts and stakeholders.	Time to meet and collaborate	Justin Carvalho	Ongoing	Meet at least once per year. Add additional industry and hotel affiliated members.	All PLO's will be updated and enhanced with the wisdom of the advisory board.	Ongoing.
Build Pool of Qualified Instructors	Some instructional areas of FENG are difficult to fill.	Networking	Justin Carvalho	December 2015	Having a backup list of potential instructors would be a nice luxury for the program.	All	Ongoing.

Part IV. Resource Implications

We are currently assessing our current program and individual course needs. Many of our courses utilize consumable material to teach the course. These materials add up very quickly. So far we have been very successful in partnering with campus initiatives to provide the materials and learning experiences for each course. To address these needs we will need to secure a community partner or secure grant money to cover these expenses.

To further advance our program, specific content area trainers (hands-on modules and computer simulation software) could be identified and purchased to help develop the program and students' understanding of industry standards.

Program Student Learning Outcomes

For the 2014-2015 program year, some or all of the following P-SLOs were reviewed by the program:

Assessed this year?	Program Student Learning Outcomes

Assessed this year?	Program Student Learning Outcomes	
1	<input type="radio"/> No	1. Read and understand blueprints sufficiently to use them to plan a project.
2	<input type="radio"/> No	2. Select materials properly for a given project.
3	<input type="radio"/> No	3. Maintain and care for the tools required in the construction and maintenance industry.
4	<input type="radio"/> No	4. Know and utilize Occupational Safety and Health Administration (OSHA) and State safety regulations to minimize risk and protect self and others.
5	<input type="radio"/> No	5. Communicate successfully in writing, orally, and with computer technology.
6	<input type="radio"/> No	6. Understand proper mechanical, electrical, and carpentry codes and standards applicable to construction and repair.
7	<input type="radio"/> No	7. Understand and demonstrate the craftsmanship standards of dependability, punctuality, and quality.

A) Evidence of Industry Validation

No content.

B) Expected Level Achievement

No content.

C) Courses Assessed

No content.

D) Assessment Strategy/Instrument

No content.

E) Results of Program Assessment

No content.

F) Other Comments

No content.

G) Next Steps

No content.

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