

HAWAI‘I COMMUNITY COLLEGE ANNUAL PROGRAM REVIEW (APR)

Architectural, Engineering & CAD Technologies

Date: January 9, 2019

**Review Period
July 1, 2017 to June 30, 2018**

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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 and Institutional Outcomes. Evaluated through a college-wide procedure, all completed Program/Unit Reviews are available to the College and community at large to enhance communication and public accountability. Please see <http://hawaii.hawaii.edu/files/program-unit-review/>

Please remember that this review should be written in a professional manner. Mahalo.

PART 1: PROGRAM DATA AND ACTIVITIES

Program Description (required by UH System)

<p>Provide the short description as listed in the current catalog.</p>	<p>This program prepares students for employment with architectural firms, contractors, engineers, surveyors, or government agencies. Job responsibilities range from making accurate working drawings of buildings to assisting a surveying crew.</p>
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Comprehensive Review information (required by UH System)

<p>Provide the year and URL for the location of this program's last Comprehensive Review on the HawCC Program/Unit Review website: http://hawaii.hawaii.edu/files/program-unit-review/</p>	
<p>Year</p>	<p>2015</p>
<p>URL</p>	<p>hawaii.hawaii.edu/files/program-unit-review/docs/2015_aec_comprehensive_program_review.pdf</p>
<p>Provide a short summary of the CERC's evaluation and recommendations from the program's last Comprehensive Review.</p> <p>Discuss any significant changes to the program that were aligned with those recommendations but are not discussed elsewhere in this report.</p>	<p>The CERC recommends that in the future Reviews the Program expand explanatory narratives, include assessment data as well as a discussion of that data, and add specifics to the Action Plan and Budget Items.</p> <p>The AEC Faculty has been attending and will continue to attend Professional Development Workshops and personal one-on-one training with the Assessment Coordinator to expand and improve in creating of narratives and the writing of reports.</p>

ARPD Data: Analysis of Quantitative Indicators (required by UH System)

Program data can be found on the ARPD website: <http://www.hawaii.edu/offices/cc/arpd/>

**Please attach a copy of the program’s data tables
and submit with this Annual Program Review (APR).**

Analyze the program’s ARPD data for the review period. Describe, discuss, and provide context for the data, including the program’s health scores in the following categories:	
Demand Unhealthy	The AEC program will also continue to have an unhealthy demand status due to the limitations placed on the program by the CIP code. AEC students finds employment which falls within other CIP categories as well, such as positions with the State of Hawaii Department of Transportation, County of Hawaii Planning Department, County of Hawaii Engineering Department, Hawaii Electric Light Company, Hawaiian Telcom, as well as Civil, Mechanical, Land Surveying and Electrical Engineering positions. Several have also gained employment at Hawaii Planning Mill, Home Depot and Lowes. Although the number of majors has dropped, the number of non-majors in the Program has gone up significantly from 29 to 74 as we continue to offer several courses open to non-majors.
Efficiency Cautionary	The Efficiency indicators show a slight drop in the fill rate, however, AEC continues to have full enrollment in the Fall semester with the same number of appointed faculty. Also, the Budget information has not been reported thus deeming AEC Cautionary.
Effectiveness Healthy	AEC’s Fall to Spring’s persistence has remained the same, however AEC’s Fall to Fall’s persistence has gone up significantly. For several years, due to attrition AEC’s persistence numbers were low. AEC is very pleased with these numbers and will continue to help students in any way possible to ensure successful continuation throughout the program.
Overall Health Cautionary	As expected, the Demand (CIP Codes) category continues to negatively impact the Overall Health call of the Program.

Distance Education	AEC continues to offer 2 online and 2 hybrid courses. AEC 112, Computer Aided Drafting is offered once in the Fall and once in the Spring. During the Fall semester, two sessions are offered, one hybrid for majors and one online for non-majors. The Spring DE courses offered are: AEC 112 (online for non-majors), AEC 129, Sustainable Design and Site Prep (online for majors and non-majors) and AEC 150, Intro to GIS and GPS (hybrid for majors). DE indicators show that the fill rate has dropped slightly with completion rate rising significantly which indicates greater student success.
Perkins Core Indicators (if applicable)	Perkins Core Indicators shows the need for AEC improvement in the areas of retention and completion. This is a cohort program which allows students to enroll in the Fall semester. This contributes to the full capacity of 12 (due to limited space). Through attrition, the AEC program tends to lose students during the Spring to Fall transition. Students are encouraged to complete their degree, however it is not always feasible due to time constraints and cost that most students encounter. Also, having a variety of certificates which students can choose from, many choose to enroll in just one or two courses for professional development. AEC has shown a great improvement within the numbers for non-traditional participation and completion. AEC has been able to recruit more women into the program and will continue to promote our program through job and career fairs.
Performance Funding Indicators (if applicable)	Although the number of degrees and certificates has gone down slightly, the number of Native Hawaiians receiving degrees or certificates has gone up. Also, there were only 2 Pell recipients which suggest most students are financially supporting themselves while in school, therefore needing more time to complete their degrees.
What else is relevant to understanding the program's data? Describe any trends, internal/external factors, strengths and/or challenge that can help the reader understand the program's data but are not discussed above.	<p>AEC has continued to emphasize the seriousness of academic dishonesty in the classroom and continues to require all students to sign the AEC policies handout confirming their understanding and agreeing to abide by these policies. This has dramatically improved the performance of each student in the classroom.</p> <p>Another challenge that we constantly face is the continuing use of cell phones in the classroom which interferes with personal lab time. Many students were distracted and fell behind with assignments due to mismanagement of lab time. Although AEC tries to adapt to the constantly changing technologies that students are accustomed to, we feel it best to defer them from having access to</p>

	<p>their phones during class hours. We have recently implemented a restriction on cell phone use in class as a trial to determine if it produces better student success.</p>
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PROGRAM ACTIVITIES

Report and discuss all major actions and activities that occurred in the program during the review period, including the program’s meaningful accomplishments and successes. Also discuss the challenges or obstacles the program faced in supporting student success and explain what the program did to address those challenges.

For example, discuss:

- Changes to the program’s curriculum due to course additions, deletions, modifications (CRC, Fast Track, GE-designations), and re-sequencing;
- New certificates/degrees;
- Personnel and/or position additions and/or losses;
- Other changes to the program’s operations or services to students.

- AEC continues to participate in new student recruitment efforts by attending college and career fairs to promote the program. (G#1, last AY)
- The continuing assessment of AEC courses that have been combined has led to more discussions with HonCC to decide on courses that can be articulated to allow students to choose courses from either campus to complete their degrees while maintaining success student learning goals. (G#2 last AY)
- AEC will submit to the CRC for program name change that will align with HonCC’s new program name, Architecture, Engineering and Construction Technologies (AEC Tech). (G#3, last AY)
- AEC continues to attend meetings with HonCC and Manoa’s School of Architecture to continue the discussion of the 2 + 3 program, where students will complete two years at the Community College level and finish off their three years at Manoa’s School of Architecture’s Bachelor/Masters/PHD Programs. (G#4, last AY)

PROGRAM WEBSITE

Has the program recently reviewed its website? Please check the box below that best applies and follow through as needed to keep the program’s website up-to-date.

Program faculty/staff have reviewed the website in the past six months, no changes needed.

Program faculty/staff reviewed the website in the past six months and submitted a change request to the College’s webmaster on _____ (date).

Program faculty/staff recently reviewed the website as a part of the annual program review process, found that revisions are needed, and will submit a change request to College’s webmaster in a timely manner.

Please note that requests for revisions to program websites must be submitted directly to the College’s webmaster at <http://hawaii.hawaii.edu/web-developer>

PART 2: PROGRAM ACTION PLAN

AY18-19 ACTION PLAN

Provide a detailed narrative discussion of the program’s overall action plan for AY18-19, based on analysis of the Program’s AY17-18 data and the overall results of course learning outcomes assessments conducted during the AY17-18 review period. This Action Plan should identify the program’s specific goals and objectives for AY18-19 and must provide benchmarks or timelines for achieving each goal.

G#1: AEC will continue new student recruitment efforts. (Timeline: ongoing)

G#2: AEC will push through curriculum for program name change as part of the articulation process with HonCC. (AY 18-19)

G#3: AEC will continue discussions with HonCC and Manoa to have courses articulated at which time CLO's will be adjusted for the streamlining of assessment reporting. (AY 18-19)

G#4: AEC will work with Assessment Coordinator to "clean up" assessment reports and schedules. (AY 18-19, dependent on G#3 above)

G#5: AEC would like to follow HonCC with some Construction Management courses due to demand in Industry. Faculty would like to enroll in some of these courses in the near future for training. (Timeline: dependent on completion of curriculum at HonCC)

ACTION ITEMS TO ACCOMPLISH ACTION PLAN

For each Action Item below, describe the strategies, tactics, initiatives, innovations, activities, etc., that the program plans to implement in order to accomplish the goals described in the Action Plan above.

For each Action Item below, discuss how implementing this action will help lead to improvements in student learning and their attainment of the program's learning outcomes (PLOs).

Action Item 1:

AEC will continue recruitment efforts by attending as many college and career fairs as possible. We continue to participate in the HawCC day on campus as well as yearly fairs held by Hilo High School and Keaau High School. We hosted Honokaa High School Faculty to explain our program and in turn visited their CTE programs on their campus. All of these help with the promotion of our program and gets the message out to future students who may be interested in AEC. By educating potential students, those entering will have a better perspective and be better prepared to meet all of our PLO's. AEC will incorporate AVID strategies to reach out to students with surveys to gain a better perspective on what it is that students will hope to achieve from this program as well as its instructors.

Action Item 2:

AEC will input into Kualii for a program name change as part of the articulation process with HonCC. This is the first step in trying to align courses. Continuing discussions will be taking place to be able to move forward with articulation. PLO's will be adjusted accordingly for this action item. Meetings will be set with the Assessment Coordinator on February 12 and in the

future to input reports into Campus Labs and clean up the assessment schedule for the AEC program.

Action Item 3:

AEC will continue discussions with HonCC to align common courses allowing students to enroll in a larger range of courses from either campus. We will continue to collaborate with UH Manoa’s School of Architecture on the 2 + 3 proposal to create a smooth pathway to further students’ education.

RESOURCE IMPLICATIONS

NOTE: General “budget asks” are included in the 3-year Comprehensive Review. Budget asks for the following three categories only may be included in the APR: 1) health and safety needs, 2) emergency needs, and/or 3) necessary needs to become compliant with Federal/State laws/regulations.

BUDGET ASKS

For budget ask in the allowed categories (see above):	
Describe the needed item(s) in detail.	N/A
Include estimated cost(s) and timeline(s) for procurement.	N/A
Explain how the item(s) aligns with one or more of the strategic initiatives of <u>2015-2021 Strategic Directions</u> :	N/A

<p>http://hawaii.hawaii.edu/sites/default/files/docs/strategic-plan/hawcc-strategic-directions-2015-2021.pdf</p>	
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PART 3: LEARNING OUTCOMES ASSESSMENTS

For all parts of this section, please provide information based on CLO (course learning outcomes) or PLO (program learning outcomes) assessments conducted in AY17-18.

Evidence of Industry Validation and Participation in Assessment (for CTE programs only)

Provide documentation that the program has submitted evidence and achieved certification or accreditation (if applicable) from an organization granting certification/accreditation in the program's industry/profession. If the program/degree/certificate does not have a certifying body, you must submit evidence of the program's advisory committee's/board's recommendations for, approval of, and/or participation in the program's assessment(s).

Please attach copy of industry validation for the year under review.

Courses Assessed

List all program courses assessed during AY17-18, including Initial and "Closing the Loop" assessments.			
Assessed Course Alpha, No., & Title	Semester assessed	CLOs assessed (CLO#s)	PLO alignment (PLO#s)
AEC112 Computer Aided Drafting	Fall 2017	1, 2, 3, 4	1, 2, 3, 5
AEC 128 Sustainable Environmental Design	Spring 2018	2, 3	1, 2, 5, 6
AEC 129 Sustainable Design & Site Prep	Spring 2018	2, 3	1, 3, 5
AEC 234 3D CAD Imaging	Fall 2017	1, 2, 3	1, 2, 4, 5, 6
AEC 241 Introduction to Building Services & Building Information Modeling	Spring 2018	3	1, 2, 3, 5

AEC 242 Basic Architectural Studio B	Spring 2018	1, 2, 3, 4	1, 2, 3, 5
“Closing the Loop” Assessed Course Alpha, No., & Title	Semester assessed	CLOs assessed (CLO#s)	PLO alignment (PLO#s)
No “Closing the Loop” Assessment was done this academic year		AEC will work with Assessment Coordinator to complete	

Assessment Strategies

<p>For each course assessed in AY17-18 listed above, provide a brief description of the assessment strategy, including:</p> <ul style="list-style-type: none"> • a description of the type of <u>student work or activity assessed</u> (e.g., research paper, lab report, hula performance, etc.); • a description of <u>how student artefacts were selected for assessment</u> (e.g., the assessment included summative assignments from all students in the course, <u>OR</u> a sample of students’ summative assignments was randomly selected for assessment based on a representative percentage of students in each section of the course); • a brief discussion of the <u>assessment rubric/scoring guide</u> and the criteria/categories and standards used in the assessment.
<p>Course Alpha/#: AEC 112</p> <p>The artifact chosen for this initial assessment is a CAD drawing. Students will use previous assignments and apply to viewports to assign the appropriate scale to each drawing, utilizing paper space/model space. The artifacts will be collected from each student enrolled at the end of eight weeks. (Online 8-week course)</p>
<p>Course Alpha/#: AEC 128</p> <p>The artifact chosen for this initial assessment is an assignment on Sustainability Concepts used in designing. Students will research a sustainable topic, complete a research paper on chosen topic with final presentation to peers. The artifacts from all students enrolled will be collected evaluation mid-semester. A rubrics will be used as a scoring guide.</p>
<p>Course Alpha/#: AEC 129</p> <p>The artifact chosen for this initial assessment is a CAD drawing of the County of Hawaii’s standard driveway detail. Students will conduct research on the County of Hawaii’s website and create a CAD drawing of the driveway detail. Artifacts will be collected from all students enrolled during week two for evaluation. (This is an 8-week online course). A rubrics will be used as a scoring guide.</p>

Course Alpha/#: AEC 234

Artifacts will be collected from all students enrolled for this initial assessment. The artifact chosen is a Dream House Design. Students will create clients, design a home to “fit” them and create a 3-D model on Sketch-up. They will then present their design to their peers. Artifacts will be collected at the end of the semester from all students enrolled. A rubric will be used as a scoring guide.

Course Alpha/#: AEC 241

The Artifact chosen for this initial assessment is the Retail Shop Design project. Students will create a business shop using BIM software. The artifacts will be collected from all students enrolled at the end of the semester. A rubric will be used as a scoring guide.

Course Alpha/#: AEC 242

The assignment chosen for this initial assessment is the Architectural Firm Design. Students are given certain restrictions and requirements for their design. Once done, they will do a paper describing their design, build a study model, and perform a presentation to peers. This project will be collected from all students enrolled for assessment midway thru the semester. A rubric will be used as a scoring guide.

Expected Levels of Achievement

For each course assessed in AY17-18 listed above, state the standard (benchmark, goal) for student success for each CLO assessed AND the percentage of students expected to meet that standard for each CLO.

Example: “CLO#1: The standard for student success is that students will answer 80% of the questions on the final exam related to CLO#1 correctly. The expectation is that 85% of students will meet this standard for CLO#1.”

Example: “CLO#4: The standard for student success is that students will be able to perform skills associated with CLO#4 with 80% proficiency. The expectation is that 75% of students will meet this standard for CLO#4.”

Assessed Course Alpha, No., & Title	Assessed CLO#	Standard for Success	% of Students Expected to Meet Standard
AEC 112 Computer Aided Drafting	1, 2, 3, 4	Students will receive 80% or higher for their final Cad drawing	85% will meet or exceed
AEC 128 Sustainable Environmental Design	2, 3	Students will receive 80% or higher for their research project	85% will meet or exceed

AEC 129 Sustainable Design & Site Prep	2, 3	Students will receive 80% or higher for their CAD detail	85% will meet or exceed
AEC 234 3-D CAD Imaging	1, 2, 3	Students will receive 80% or higher for their final project	85% will meet or exceed
AEC 241 Introduction to Building Services & Building Information Modeling	3	Students will receive 80% or higher for their business shop project	85% will meet or exceed
AEC 242 Basic Architectural Studio B	1, 2, 3, 4	Students will receive 80% or higher for their Architectural Firm design project	85% will meet or exceed

Results of Course Assessments

For each course assessed in AY17-18 listed above, provide:

- a statement of the quantitative results;
- a brief narrative analysis of those results.

Course Alpha/#: AEC 112

After assessing this course it was determined that 81% met or exceeded expectations. AEC is not pleased with these results. These are online courses and maybe if it was assessed separately the results would have been better or maybe even worse. This project can be difficult if the student is not knowledgeable in using the compute. Students have access to ask questions via email or text messages when they encounter challenges. They can also arrange in-person meetings with the Instructor when needed. Because these are open to non-majors as well, it can be difficult to reach these outside students. AEC will try to keep the courses separate, one for non-majors and one strictly for majors. We will also try changing the majors only course to a hybrid class to see if that would make a difference in our results. AEC would like to keep it as an online only class to be able to offer it to other students on and off campus as well as community members. AEC hopes to achieve better results with this change.

Course Alpha/#: AEC 128

After review and discussion it was concluded that all 12 students met or exceeded expectations for this assignment. AEC is very pleased with this result. This is a lecture class on sustainability and many small research and drawing projects are given. Students do both individual and group work. Many discussions and presentations are done by the students with the Instructor. They incorporate what they learned in this course into assignments from other courses. Although AEC is pleased with this results, we will continue to find ways to improve to obtain greater student success, including discussions on whether the CLO's needs to be revised to be able to assess all with one assignment.

Course Alpha/#: AEC 129

One major challenge the students face is visualizing the spacing within the County of Hawaii details. They understand the drawing however, when it comes time to re-create it using CAD, it's difficult for the students. They do contact the Instructor for assistance with sizes. Also, some material content needs updating due to current County requirement changes. AEC will incorporate the use of graphic scales to help students visualize dimensions and spacing taken from PDF files from the county web site to alleviate some of the problems students encounter. Although this assignment was used to assess two of the three CLO'S, it does not assess the rest of the course. AEC will need to look at revising CLO's to be sure assessment can be done to evaluate students on a wider range and know that they are understanding all material covered throughout the entire course and not one assignment. There are more CAD drawing assignments in this course, however they are a lot of other material covered. AEC will also start to update the course due to the County of Hawaii code changes.

Course Alpha/#: AEC 234

After evaluating and discussing the artifacts presented, it was concluded that four out of the five students met or exceeded expectations. However, due to class size the percentage (85%) that was hoped for was not reached, leaving AEC with only 80%. Although it is only one student, AEC is not pleased with this result. Students are placed in an office setting to learn SketchUp with limited assistance from Instructor. Once they learn drawing commands, they will begin their designs to fulfill their "clients" needs. One of the struggles is that this one credit, lecture/lab course is held only once a week. Students tend to get distracted during that time. Assignment does require outside time spent on it as with many AEC courses. As students see their homes coming along, they get motivated into continuing and most complete the project with impressive results. A presentation to the class is held at the end of the semester but by that time they are very comfortable with their peers. Some tend to not do so well with their presentation. Advisory council members were impressed with students learning software commands on their own because that is how it is done in the industry. She strongly advised to continue but maybe try having the students create tutorials for each other to help them come along faster to save time. Another idea that AEC would like to try next time around, is to have a bigger audience for their presentations. This would include instructors, councilors, administration and other students from different disciplines. By knowing that the presentation needs to be done professionally to a larger more impressive audience, students will be encouraged and motivated to complete their project and do a much better job.

Course Alpha/#: AEC 241

After discussion it was concluded that 100% of students met or exceeded expectations. This was a very small group of students so there was a chance for very personalized instruction from their instructor throughout the project. Students did well. However, AEC does not deem course perfect. It's hard to conduct a true assessment when there are so little students. AEC will continue to improve strategies on instruction and assignments to be sure students are meeting all CLO's. We will also be thinking about ways to be able to assess all CLO's at the same time. AEC has future meetings planned with HonCC to articulate courses and during that time, we will all discuss CLO's as well as PLO's.

Course Alpha/#: AEC 242

The artifact for this assessment was chosen because it was a project that can assess all CLO's at the same time. All four students enrolled met or exceeded expectations. This class consisted of only four students and so instruction was very personalized. This did create a challenge on getting a true assessment. Students did well on their presentations, board, and paper. Instructions were understood and results were impressive. AEC was pleased with results, however, due to the small class size we will wait to assess this course again and see if we have the same results with a larger class. AEC has upcoming meetings with HonCC and Manoa to discuss articulation. At that time, CLO's, projects, and class in whole will be discussed to see if we are currently on the right path or if new projects could be implemented to keep up with Manoa's School of Architecture. The goal is to be articulated with HonCC and Manoa so students can receive credits from all campuses for their degree.

Other Comments

Include any additional information that will help clarify the program's course assessment results, successes and challenges.

AEC has a very difficult time keeping up with assessment reporting due to the numerous courses in the Program. After attending several workshops regarding assessment, AEC has decided to conduct meetings throughout the semester to help with the report writing to be able to conduct better assessments.

Discuss, if relevant, a summary of student survey results, CCSSE, e-CAFE, graduate-leaver surveys, special evaluations, or other assessment instruments that are not discussed elsewhere in this report.

AEC continues to use these surveys to incorporate changes to courses, curriculum and the program to achieve greater student success.

Next Steps – ASSESSMENT ACTION PLAN for AY18-19

Describe the program’s intended next steps to improve student learning, based on the program’s overall AY17-18 assessment results.

Include any specific strategies, tactics, activities or plans for improvement in program or course assessment practices, methods or tools, rubrics, schedules, etc.

Please see assessment schedule online. Program faculty will work with Institutional Assessment Coordinator to revise schedule to a more do-able cycle.

PART 4: ADDITIONAL DATA

Cost Per SSH (to be provided by Admin)

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 = \$ _____

External Data*

If your program utilizes external licensures, enter:

Number sitting for an exam _____
Number passed _____

*This section applies to NURS only.