HAWAII COMMUNITY COLLEGE
PROGRAM REVIEW REPORT

Architectural, Engineering and CAD Technologies

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Initiator: Joel Tanabe
Writer(s): Gayle Cho & Donna De Silva

Program/Unit Review at Hawaii Community College is a shared governance responsibility related to strategic planning and quality assurance. It is an important planning tool for the college budget process. Achievement of Program/Unit Outcomes is embedded in this ongoing systematic assessment. Reviewed by a college-wide process, the Program/Unit Reviews are available to the college and community at large to enhance communication and public accountability.

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Program Description

(Official Description from Catalog - then provide more in depth explanation of what this program does, who it serves and generally describe its accomplishments)

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 survey crew.

Course work includes manual drafting, 2d CAD drafting, residential design and working drawings, land surveying, civil engineering, zoning and building codes, construction materials, architectural studio design, 3d design and printing, sustainability in architecture, commercial working drawings and building services. Blueprint reading courses are offered for other trade programs such as Electricity, Welding, and Carpentry.

Students have varied backgrounds and life experiences. Some are recent high school graduates, or have prior work experience in a variety of related and unrelated fields, may have earned a prior degree in another major, or have military backgrounds. Some are focused on engineering, others in architecture. It is common that some are not sure, or just want a technical occupation.

Within the courses, students develop manual and computer skills in architectural design development and contract document preparation, build physical study models, create 3d imaging and fabricate 3d additive technology models, do research, produce written papers, create and deliver slide presentations.
Students also learn about geomatic concepts, land information systems and its history in Hawai`i. AEC provides training using surveying tools and equipment, electronic field instruments, office and civil software, GIS and GPS applications to create maps, and 3d model views from point cloud field data.

All skills are applied to the design and creation of contract drawings to include topographic information for the building of the Annual Model Home Project, on a property in Hilo for the Department of Hawaiian Home Lands.
Students may also have extracurricular opportunities to earn USGBC's LEED Green Associate credential.

3yr Review Report Summary – *If this Program is scheduled for Comprehensive Review, this section must be more robust and detailed explaining changes made to the program in the past 3 years; funding received since last 3 years and results from funding, etc.*

1. Added a Certificate of Achievement degree.
2. Raised the entry level requirements into the AEC program to: placement into Eng 100 and Math 100.
3. Secured an articulation agreement with UH Manoa's School of Architecture program.
4. Filled a vacant full-time tenured tract faculty position.

CERC Comments and Feedback --

CERC Comments as listed in most recent Comprehensive Review.

Overall: Cautionary
As a result of your team attitude and effort, the AEC Technology program continues to be progressive for the benefit of the students. Your leadership is very much appreciated.

Demand: Unhealthy
This element is based on the number of majors to annual new/replacement positions. The number of majors decreased by 3 students to 59 with only 3 new and replacement positions in the County. This equates to 19.7 majors per job, an Unhealthy call. The Blueprint Reading courses are "housed" with AEC causing the non-majors in program classes to be at 34%. Incorporating Green Building Designs into your curriculum should expand the employment opportunity base. You will need to revisit the SOCs you've identified for your program.

Efficiency: Healthy
This element is based on two criteria – class fill rate and student to faculty ratio. Number of majors to the 2 FTE BOR appointed faculty is 29.5, a Healthy call. The fill rate increased by 4% to 88%, a Healthy call. Continue your recruitment efforts.

Effectiveness: Cautionary
This element is based on three criteria – unduplicated degrees and certificates earned in relationship to number of majors, unduplicated degrees and certificates earned in relationship to annual/new replacement positions, and persistence from fall to spring. The ratio of degrees awarded to majors is 23.8%, a Healthy call. However, the ratio of degrees awarded to new and replacement positions in the County is 4.7, an Unhealthy call. The 71% Persistence (Fall to Spring) is a decrease of 4% and is a Cautionary call. This needs to be addressed.
Other elements:
- Two students transferred to UH 4-year which is a plus for the program.
- The AEC program met all Perkins IV Core indicators.

The following is feedback from the Comprehensive Program Review.
Part A. Program Effectiveness
1. Program mentions the college's mission and ILOs; however, to improve this section it is suggested a stronger connection with the mission and ILOs with specific alignment program elements be developed.
2. Summary of changes was made and explained. Program changes are aligned with national initiative to support sustainable green construction industry.
3. Good analysis of program strengths and weaknesses with plans to improve.
4. The program needs to explain their progress in achieving their overall goals to provide a clearer understanding for the Reviewers.
5. Program goals are aligned with industry needs.

Part B: Action Plan for Program Improvement
You have committed the architectural engineering and CAD technology program to an ambitious goal of moving towards green and sustainability practices. Gayle's willingness to pursue "green" certifications in sustainable building practices is admirable and encouraged.
Set specific benchmarks of your goals so you can monitor the program's progress throughout the year. Concrete outcomes should be reported in your next review.
To be effective, student learning outcomes assessment must contribute directly to student learning. Moreover, assessment for improvement is most effective when it is embedded within the curriculum and so has a direct connection to student learning. Close the loop by reflecting on your assessment results and make adjustments to your teaching and/or curriculum, if necessary. It is through the process of ongoing assessment of student learning outcomes that you can improve the quality of your program and demonstrate the level of quality to

others.
By 2012, ACCJC is requiring that all programs reach the sustainable quality improvement level for Program Review and Planning, and the proficiency level for Student Learning Outcomes, so work with your division chair, dean, and/or assessment coordinator to develop a timeline to ensure that your program will be at those levels by 2012. Continue developing assessment strategies to assess student learning outcomes that lead to program improvement.

Part C: Action Plan Support Budget Priority

Program priorities 1 and 2 will be submitted as CERC priorities. Priority 3 will be considered in CERC and will be recommended to the Planning and Operations Maintenance unit to be included in Repair and Maintenance schedule.

CERC provided recommendations intended as suggestions for improvement. Provide a brief response to the suggestions made. i.e., Were the suggestion(s) valid? What change(s) were made as a result of the suggestion(s)?, etc.

- *If no changes were made at all, write "None."*
- *If no changes were made during this review period but you plan to in future periods, write "None in 2013-2014 however changes will be made in (AYs) and will be reported in that review.*
- *If no changes were made during this review period but changes were made in previous review periods, write "None in 2013-2014; however changes were made in (AYs)."*

Part I: Quantitative/Qualitative Indicators

A. Annual Report of Program Data (ARPD) Data Grid

Look up ARPD data at:
http://www.hawaii.edu/offices/cc/arpd/instructional.php?year=2014&action=quantitativeindicators&college=HAW
Print for convenience since you will need to use information to discuss your Program's indicators.

B. ARPD Data Analysis

Based on the data from the ARPD, analyze the program's strengths and weaknesses in terms of demand, efficiency, and effectiveness. If this Program is scheduled for Comprehensive Review, analyze program over 3 years.

Demand Health UNHEALTHY	Efficiency Health HEALTHY	Effectiveness Health CAUTIONARY
The number of AEC majors (*3), is 37. This numerator of 37 is divided by the number of positions: 37 majors/1County positions=37, imbalance resulting in the Demand indicator as "unhealthy". Ratings: HEALTHY -1.5 to 4.0/ CAUTIONARY- .5 to 1.49, or 4.1 to 5.0/ UNHEALTHY- <.5 or > 5.0 The Strategic Plan indicates the construction field continues to remain in a slump due to the downturn in the economy. Historically, and because of the economic situation many AEC graduates start their own businesses doing contract drafting projects and permit routing for the smaller private sector firms on the Big Island. Unfortunately these counts are not included in the demand computations. Also, AEC's CIP Code:" Architectural Drafting and Architectural CAD/CAM", needs reassessment. This code represents only half of our curriculum. The other half is in engineering and land surveying. Almost all of our graduates who have been hired during this period by a firm or utility company is in the engineering/land surveying industry. Again this is not reflected in the County positions under our current CIP Code.	#10) The class fill rate is at 95.2% HEALTHY = 75 to 100 % #12) The Student/Faculty Ratio is: 18.5 HEALTHY= 15 - 35	#17 & #18) Successful Completion is at 85%, Withdrawals were 2 AEC did okay in this category #19) Persistence Fall to Spring category was good at 80.4% #19a) Persistence Fall to Fall reflects graduates leaving at the end of Spring resulting in 36.5% remaining #20) Unduplicated Degrees and Certificates Awarded is: 9 9 degrees awarded/County position of 1 = 9 HEALTHY = .75 to 1.5/ CAUTIONARY =.25 to .75, or 1.5 to 3/ UNHEALTHY= <.25 or >3.0 AEC reflects poorly in this category. Will implement CIP code reassessment for truer representation of jobs filled. Current CIP reflects only architectural positions. [Note: the 31 withdrawals reflected in year 10-11 was due to a curriculum change of adding a sustainable experimental course. Our students first needed to b disenrolled through the withdraw process from the existing course, to then be enrolled in the new course, resulting in the high number of 31 withdrawals.]

Overall Health

Distance Education: Completely Online Classes -- *List and provide an analysis of courses taught completely online. (i.e., compare success to face-to-face; action strategies implemented to increase success and completion rates, e.g., working with ITSO on strategies)*

Currently, the AEC program does not provide any qualifying DE courses. However, the AEC 115 Intro to Architecture course is currently under consideration of being delivered through the DE format. Faculty training must be intact prior to this offering.

Perkins IV Core Indicators -- *Identify core indicators (1P1, 2P1, 3P1, 4P1, 5P1, 5P2) that were **not** met and specify action strategies.*

The Perkins IV Indicator #32, 4P1 Student Placement goal of 60.0 was "NOT MET".

Due to the lack of job positions, those who stopped program participation but did not find employment, join military service, or an apprenticeship program, may be part of the below concentrators.
Concentrators in the previous Perkins year who did not return consisted of the following:
2 two students who transferred to a 4-year college in Architecture, one on Oahu and the other moved to the mainland. 3 'dropped' due to personal hardship, though of them has returned to continue this year.

4P1 Develop Recruitment, retention plan
Spring 2014

4P1 Identify funding for implementation of recruitment promotion/retention in-class tutor
Fall 2014

4P1 Recruitment and in-class tutor in effect
Spring 2015

Performance Funding (Graduation, Native Hawaiian, STEM, Transfer, Degree) -- *Describe how your program contributed to performance funding in these areas? If not, why and how do you plan to contribute in the future?*

As the AEC program work towards its goals of creating transfer level pathways, Performance Funding outcomes should reflect improvement.

C. Trends & Other Factors -- *Describe trends including comparisons to any applicable standards, such as college, program, or national standards from accrediting associations, etc. Include, if relevant, a summary of Satisfaction Survey Results, special studies and/or instruments used, e.g., CCSSE, etc. Describe any external factors affecting this program or additional program changes not included elsewhere.*

1. An upcoming trend announced during a recent architect's office visit, described a 7 to 10 year projection (yr. 2020) of a major shortage of 25,000 architectural professionals and drafters in the construction industry, due to a combination of vacancies and the repercussion of the economic downturn which is causing people to switch majors and change careers related to the construction industry. This local architect's message encouraged our students to continue their pursuit and not give in to the current temporary situation.

DBEDT's data on population growth projections for Hawaii County states a 76% increase in population by the year 2020. 26% growth in East Hawaii plus 50% in West Hawaii. It stated growth leads to expanding industries… such as growth in the building industry.

The ongoing scientific discoveries and projections impacting climate change continues to accelerate the movement towards sustainability worldwide. This force is driving the demand for awareness and for knowledgeable workers in the industry. AEC's goals to advance in this area of our curriculum continues development in the area of sustainable design and concepts. In addition, AEC is seeking opportunities for our students to plan an integration of green concepts into

live projects.

Part II: Analysis of the Program

A. Alignment with Institutional Mission & Learning Outcomes (ILOs)

1) College Mission Alignment

Hawai`i Community College (HawCC) promotes student learning by embracing our unique Hawai`i Island culture and inspiring growth in the spirit of "E `Imi Pono." Aligned with the UH Community Colleges system's mission, we are committed to serving all segments of our Hawai`i Island community.

Copy/Paste from your 2012-2013 Program Review, your description of how this Program supports the College's Mission. Review and revise as you feel necessary. The description you finalize in the field below will be input into PATH for future reports.

Example: The SUBS program's faculty and staff fosters excellence in education, workforce development, academic advising and co-curricular activities that focus on engaging, challenging and transforming students to strive for academic excellence, personal growth, contributing members of the Hawai`i Island Community.
Last Modified on:10-14-2013 AEC's program mission is in alignment with the mission of the College by focusing on student learning, Island culture, and contributing to the community.

2) ILO Alignment

a) ILO1: *Our graduates will be able to communicate effectively in a variety of situations.*

Copy/Paste from your 2012-2013 Program Review, your description of how this Program supports this ILO. Review and revise as you feel necessary. The description you finalize in the field below will be input into PATH for future reports. If Program doesn't support this ILO, write "No alignment to ILO1"

Example: The SUBS program's curriculum prepares our graduates to communicate effectively by requiring the students to participate in: 1) small and large group discussions, both online and face-to-face; 2) individual and group presentations; 3) role play of interviewing and counseling skills; 3) fieldwork at practicum sites; 4) service learning activities on campus and in the greater community.
By the time the AEC students graduate, they have gained skills in various forms of communication. Graphically: from free hand sketching and rendering to technical computer aided drafting; in written form through essays and research papers; and verbally through multiple opportunities developing and delivering PowerPoint presentations. These learning experiences support the College's ILO1 and is part of AEC's PLO #6: Demonstrate communication, critical thinking, research, and problem-solving skills.

b) ILO2: *Our graduates will be able to gather, evaluate and analyze ideas and information to use in overcoming challenges, solving problems and making decisions.*

Copy/Paste from your 2012-2013 Program Review, your description of how this Program supports this ILO. Review and revise as you feel necessary. The description you finalize in the field below will be input into PATH for future reports. If Program doesn't support this ILO, write "No alignment to ILO2"

The nature of the architectural and engineering profession is problem solving. Students develop solutions to many design problems throughout the courses each semester. These assignment activities and exercises support the College's ILO 2 and again alignment is through AEC's PLO #6. Demonstrate communication, critical thinking, research, and problem-solving skills.

c) ILO3: *Our graduates will develop the knowledge, skills and values to make contributions to our community in a manner that respects diversity and Hawaiian culture.*

Copy/Paste from your 2012-2013 Program Review, your description of how this Program supports this ILO. Review and revise as you feel necessary. The description you finalize in the field below will be input into PATH for future reports. If Program doesn't support this ILO, write "No alignment to ILO3"

Throughout AEC's sustainable focused curriculum, student lessons are enfused with topics on native elements and natural resources which our island ancestors respected and preserved generations ago. Exposure through research, presentations and exercises students gain an understanding and an appreciation for our island culture, community and environment. Students in the AEC 126 course also participate in preservation volunteer activities. ILO3 is embraced within AEC's PLO#7: Understand the balance between cultures, community and the environment.

B. Program Mission – *Write Official Program Mission*

The AEC Program is designed to inspire student learning by providing training in graphic technological applications and the use of equipment and instruments to expand all students' potential to create the future built environment in our community. Students are prepared to enhance these employment skills by remaining sensitive to our unique culture and natural environmental resources of our Hawaii State.

C. Strengths and Weaknesses

1) Strengths (Top 3 defined)

State Strength	Using supporting evidence, describe why this is a strength
Example: *Program Curriculum*	*Example:* *1) Approved by the State Department of Health as meeting the addictions requirements for Certified Substance Abuse Counseling, and Certified Prevention Specialist educational requirements.* *2) STEM Courses - SUBS 132, 268, 270* *3) Contains sufficient SUBS core requirement courses to develop an AA Degree in SUBS* *4) Indigenous course - SUBS 141 Ho`oponopono*
S1. In the past four years, the AEC program has consistantly scored at least 40% to 80%, above State goals in the number of non-traditional participation; and (with one exception 2010-11) scored at least 40% to 200% above the State goals for non-traditional completion.	The Perkins IV Core indicators reflect these numbers based on participants and graduates in the AEC Program, from underrepresented gender groups that leads to employment in non-traditional fields.
S2. Over the past four years, the AEC program has remained "Healthy" in the Efficiency Indicator of Fill rate to BOR appointed faculty.	Per the Annual Report of Program Data and Health Indicators. Range of Fill rate, over the last 4 years: 86% to 95.2% Range of Majors to FTE BoR appointed Faculty: 18.2 to 29.3
S3. A majority of AEC graduates who	AEC has tracked students informally after graduation and is in the process of

seek positions on Hawaii Island are typically able to secure jobs with firms in the engineering and land surveying fields. No other institution in the State of Hawaii offers a curriculum with a series of coursework training in the profession of Land Surveying.	compiling a data base with this info. Engineering type companies who typically hire our graduates are: Helco, County of Hawaii Engineering, and the engineering private sector. On several occasions these remarks were from individuals outside of the college and by Advisory Council members. Online research confirmed no other degree granting program in the State.

2) Weaknesses (Top 3 defined)

State Weakness	Using supporting evidence, describe why this is a Weakness	Proposed solution
Example: *Lacks 2-year Degree Program*	*Example:* *Does not meet HawCC AMP Priorities (pp 5-10): Increasing Graduates in Science, Technology, Engineering and Math (STEM).*	*Example:* *Proposal being made for New AMP Action Strategies that would allow and support the addition of a 2-yr Degree Program for SUBS.*
W1. Old CAD software, and utilization of Civil software not common by local industry standard.	Current AutoCAD Suite software would bring the architectural and engineering courses in alignment with the majority of local industry firms and agencies. Having the appropriate software would reduce the retraining learning curve that becomes necessary with our graduates as they obtain job positions with companies whose software is a more recent version. Having to 'catch-up' to the job market sets our students at a great disadvantage.	
W2. Termite droppings and antiquated facility, driving the need for renovations to create a safer learning environment with usable space and a more inspiring study environment.	Plastic sheets draped from the ceilings in the CAD Labs and Lecture Room to capture termite droppings has been the remedy for the past 4 years. New suspended acoustic ceilings and lighting was scheduled for two past summer construction projects, but now has been pushed back another year. A new and updated electrical layout is also part of this project. This will lessen the visibility of cables, wiring, power strips, and hazardous accessibility to the 7ft. high dangling electrical outlet boxes from the ceiling at each students' workstation, etc. in both CAD labs and Main Lecture Room. There is unusable space within AEC's designated program area which AEC needs to utilized more efficiently. Approval to renovate this area was requested in prior Program Reviews. This semester, POM assisted by installing 2 recycled light fixtures in the existing dark room. AEC would like to propose minimal additional improvements to this approximately 480 sq. ft. space by converting this into a "Green" student work room for recycled model building activities, energy device demos, sustainable product displays, and an example of natural lighting	

	concepts, low voc paints, possibly natural ventilation, and putting to use the existing obsolete drafting table tops and tall chairs for use in this green lab. These improvements will enable AEC to overcome this weakness, while improving and promoting sustainability within our own program.	
W3. Lack of GIS/GPS already in the curriculum and robotic equipment and software.	In pursuit of strengthening AEC's STEM focus, equipment and software needs are ever present. Currently we are limited to the availability of Forest TEAM's GIS lab. Software in AEC's existing labs would increase hands-on time to enhance the quality of the students growth in this area. Coupling the software with GPS tracking equipment would make the skill level and knowledge in GIS/GPS and robotic tracking complete.	

Part III: Course/Program Assessment

A. Course(s) Assessed -- *List the course(s) (Alpha/#) assessed during this reporting period.*

Example: *Courses: SUBS 140, 245, 268* *PLO#1: Satisfy the addiction studies educational requirements for Hawaii State Department of Health Alcohol and Drug Division's (ADAD) Certification:* *Embedded in PLO#1 are PLO's 2, 3, 4, & 5*
AEC 117 - Intro to Surveying & AEC 127 - Civil Engineering Drawing

B. Expected Level of Achievement -- *Describe the different levels of achievement for each characteristic of the learning outcome(s) that were assessed. That represented "excellent," "good," "fair," or "poor" performance using a defined rubric and what percentages were set as goals for student success; i.e. 85% of students will achieve good or excellent in the assessed activity."*

See scoring and rubrics description below.

C. Assessment Strateg(y/ies) & Instrument(s) -- *Describe what, why, where, when, and from whom assessment artifacts were collected.*

Example: *SAMPLING: College records for seven (all) 2009 program graduates*
AEC 117: Artifacts collected was a 2-page exercise activity. This lesson was selected as an example of the basic skill of measuring distances of different lengths drawn on an 8.5 x 11 sheet of bond paper, utilizing a variety of different engineering scales. (1" = 20.0', 1" = 30.0', etc.) Using the proper scale indicated, the students were instructed to measure each line length, or distance on a site plan drawing, and indicate its distance in decimal feet on the blank line provided. This engineering scale exercise was an in-class activity in the Fall of 2012. 100% of all students' work was collected and assessed by each committee member utilizing a rubric assessment tool. (10 students)
AEC 127: The objective of this one-page exercise activity was for students to test their abilities of understanding and creating a section profile view of an irregularly sloped property, using manual drafting tools to project grade elevations. This was an in-class activity in the Fall of 2012 and 100% of the work was collected and assessed by all 4 advisors using a rubric assessment tool. (10 students)
Strategy/Instrument 4:

D. Results of Course Assessment - *Provide a summary of assessment results.*

Example: *RESULTS: 86% (6/7) program graduates met or exceeded expectations: completed SUBS 140,245, 268 with a "C" grade or better. 1/7 students received an incomplete grade.*
AEC 117: The method of capturing the results was computed on a percentage of answers as follows: 10% of the answers - Did Not Met Expectations 72.5% of the answers- Met Expectations

17.5% of the answers - Exceeded Expectations
*Conclusion: 90% of the answers Meets or Exceeds Expectations

AEC 127: 15% of the answers - Did not meet expectations
65% of the answers - Met Expectations
20% of the answers - Exceeded Expectations
*Conclusion: 85% of the questions Meets or Exceeds Expectations

AEC 117:
-4 out of 4 advisors commented that the measuring activity is a good introduction to learning scales.
-50% of students did better in applying the engineering scale to a site plan drawing.
-40% of students did better in applying the engineering scale to a line.
-10% of students did well in both forms of the exercises.
-Based on the percentages, students were able to apply their learning to real life situations , a vital part in the industry.
-Please continue to give assignments that will allow students to make this application, encouraging and developing critical thinking.
-Student X should focus on letter shape/darker pencil.
-Student X nice vertical lettering, in decimal reading there should be no feet & inches, only decimal feet.
-Student X measurement errors appear consistent (w/incorrect) addition of a 0 before the decimal. But this should be an easy fix for the student to then understand.

AEC 127:
-Good introduction to learning contours.
-Students understand the assignment and are able to apply teaching to real life situations. 80% of the students did very well.
-Should be neater drawings and dark.
- All students understand contouring and profiles.

Remind students -answers need to be checked and re-checked.

Changes Implemented as a result of Assessment	Evaluation of the changes that were implemented
Change 1:	*Evaluation of Change 1:*
Change 2:	*Evaluation of Change 2:*

E. Next Steps -- *Based on your experience with Assessment so far, what do you plan to do in the future? Include any changes that are planned for the Program as a result of course assessments. For example, changes to rubrics, changes to level of expectation, any Program and/or curriculum modifications, etc.*

Per recommendations from one advisory council member, more clarity in the lesson prior to the activity should be focused upon. A few students seemed to make the same error. Instructor to remind students that answers need to be checked and re-checked for accuracy. This same activity is scheduled to be collected this Fall 2013, and reassessed by the council members again next Spring 1014.

F. Evidence of Industry Validation for CTE Programs -- *Provide documentation that the program has submitted evidence and achieved certification or accreditation from an organization granting certification in an industry or profession. If the program/degree/certificate does not have a certifying body, the recommendations for, approval of, and/or participation in, assessment by the program's advisory council can be submitted. Describe the documentation; i.e. 9/27/2013 Minutes of ACC Advisory Council; Completed Rubrics by Advisory Council Members.*

Minutes of AEC Advisory Council meeting and Completed Rubrics by Advisory Council Members.
Advisory Council Members:
Jordanah Ah Puck: Architect Intern at a local private architectural firm, and is a graduate of the AEC program.
Rodney Chinen: local business owner of a drafting and surveying retail & equipment training establishment.
Alan Inaba: Licensed Land Surveyor and business owner of a local Engineering firm.
James McKeague: Licensed Architect and business owner of a local architectural firm.

Part IV Action Plan

A. 20% Course Review

a) Courses Reviewed -- *List the Course Alpha/Number and Course Title of courses that were reviewed in AY 2013-2014.*

Course Alpha Number	Course Title
AEC 80	BASIC MANUAL DRAFTING
AEC 110B	BASIC AUTOCAD
AEC 110C	BASIC AUTOCAD II
AEC 115	INTRODUCTION TO ARCHITECTURE
AEC 117	INTRODUCTION TO SURVEYING
AEC 118	CONSTRUCTION MATERIALS
AEC 120	INTRO TO CONSTRUCTION DRAWINGS
AEC 123	RESIDENTIAL PLANNING & DESIGN
AEC 126	SUSTAINABLE ARCHITECTURE
AEC 127	CIVIL ENGINEERING DRAWING
AEC 130	RESIDENTIAL WORKING DRAWINGS
AEC 131	CONSTRUCTION CODES
AEC 133	BASIC ARCH STUDIO A
AEC 134	CAD OPTIONS I
AEC 137	SURVEYING II
AEC 138	STRUCTURAL DRAWING
AEC 140	COMMERCIAL WORKING DRAWINGS
AEC 141B	BUILDING SERVICES
AEC 142	BASIC ARCH STUDIO B
AEC 144	CAD OPTIONS II
AEC 147	SURVEYING III

b) 20% Course Review Schedule

Input the Program's 20% Course Review Schedule for the next 5 years. If a schedule cannot be located, refer to HAW 5.250 Course Review Policy (http://hawaii.hawaii.edu/ovcadmin/admin-manual/haw5-250.pdf) to create a new schedule.

Course Alpha Number	2014-2015	2015-2016	2016-2017	2017-2018	2018-2019

AEC 80 - BASIC MANUAL DRAFTING		X			
AEC 110B - BASIC AUTOCAD	FALL				
AEC 110C - BASIC AUTOCAD II	SPRING	X			
AEC 115 - INTRODUCTION TO ARCHITECTURE	FALL				
AEC 117 - INTRODUCTION TO SURVEYING			X	X	
AEC 118 - CONSTRUCTION MATERIALS	FALL	X			
AEC 120 - INTRO TO CONSTRUCTION DRAWINGS					
AEC 123 - RESIDENTIAL PLANNING & DESIGN	X	X			
AEC 126 - SUSTAINABLE ARCHITECTURE	X	X	X		
AEC 127 - CIVIL ENGINEERING DRAWING		X			
AEC 130 - RESIDENTIAL WORKING DRAWINGS		X			
AEC 131 - CONSTRUCTION CODES	FALL	X			
AEC 133 - BASIC ARCH STUDIO A	X				
AEC 134 - CAD OPTIONS I		X	X		
AEC 137 - SURVEYING II		X	X		
AEC 138 - STRUCTURAL DRAWING					
AEC 140 - COMMERCIAL WORKING DRAWINGS				X	
AEC 141B - BUILDING SERVICES				X	
AEC 142 - BASIC ARCH STUDIO B				X	
AEC 144 - CAD OPTIONS II					
AEC 147 - SURVEYING III				X	

B. Previous Goals (Program Actions) & Planning

All previous goals from last year's report are used to update the program actions in the Academic Master Plan (AMP) Appendix.

- *List and discuss all program actions listed for your program in the AMP Appendix, not including crossed out items. (http://hawaii.hawaii.edu/docs/academic-master-plan-appendix-priority-actions.pdf)*
- *Review and specify which program actions were addressed or completed during Review Period AY 2013-2014.*
- *Give a progress report for each program action that is not yet address/completed and describe the degree to which the goal was achieved over the review period.*
- *Specify program actions that are no longer being pursued by the program and should be deleted from the AMP.*

AMP Program Actions	Progress Evaluation & Evidence of Achievement
Example: *26.1 2009-2010: Recruit and Hire New SUBS -- FTE BOR Appointed Faculty*	*Example:* *The CERC and HawCC administration approved new faculty position for program, which was submitted to UH system. However, this writer was informed that the position request got "lost" in the UH system, and therefore never forwarded to the State legislature for approval.*
4.1 Add Engineering courses to the AEC curriculum, attracting students, meeting workforce needs and providing additional options for students interested in earning a baccalaureate degree.	Course content and descriptions have been developed. Communication with the proposed UHH Engineering Program is currently taking place.
4.2 Create stackable certificates leading to a higher degree, provides students more options, allowing them to progress in manageable steps. (The AEC program currently offers only an AAS degree.)	The AEC program has since added a CA degree. We are in the process of researching stackable certificate formatting to assess the "fit" of our land surveying coursework as a separate certificate.
4.3 Develop multiple levels of certification/training in Green Building Technology	The AEC program had in place the means to promote green technology training and certification through a combination of course work delivered in the AEC 126 Sustainable Architecture curriculum plus other training venues through OCET. In addition, faculty worked one-on-one with individual students interested in pursuing their professional certification through the U.S. Green Building Council. Over the past several years 2-3 students per year (8 total) took on this demanding/challenging opportunity. Thus far the AEC program has 4 graduates who have earned the LEED Green Associate credential. AEC credits HawCC's Service Learning program and the State's Workforce Development agency who provided funding for the students to travel to Oahu for the Green Associate exam, which also included funds for registration and exam fees. This challenge involved a heavy focus on STEM areas of study including environmental studies, math computations, engineered sustainable building materials, etc. This program also served under-represented populations of females in the construction field. Of the four successfully credentialed graduates, 3 are female. One of them is now working towards the next level of certification, LEED Accredited Professional. Currently, sources of funding are no longer available. AEC would like to continue to pursue support for graduates to attain their professional certifications. For expansion and growth in applying green concepts, AEC is seeking applicable projects throughout the college, the UH system, and the community.
4.4 Create an AS degree as an additional pathway, providing an opportunity for a transfer level degree targeting students seeking a bachelor degree	Although with no AS degree in place as of yet, an articulation agreement between UHM's School of Arch and the AEC program is in place. This involves their acceptance of transfer credits, and/or a

	waiver from having to take two Manoa ARCH courses, provided the student has taken and passed, with a C or better, four AEC courses: AEC 115 Intro to Architecture, AEC 118 Construction Materials, AEC 130 Residential Working Drawings, AEC 138 Structural Drawings. AEC plans to further develop implementing a pathway to UHM's School of Architecture and the College of Engineering.

C. New Goals (Action Strategies) and Alignment – *Describe New Goals, if any*

Define Goal (Action Strategy) 1

Example: Establish AA Degree in SUBS
Provide access to current technology that supports student learning.

Alignment of Goal 1 to ILO(s)

Explain how Goal 1 aligns with ILO(s) and provide supporting rationale
Example: Goal 1 aligns with ILO2 (Critical Thinking) by … Goal 1 aligns with ILO3 (Community contribution) by ...
ILO1
ILO2
ILO3

Alignment of Goal 1 to Strategic Plan (SP)

http://hawaii.hawaii.edu/docs/HawCCStrategicPlan_2008-2015_10-29-09.pdf

Explain how Goal 1 aligns with an Action Strategy in the Strategic Plan (SP). Include SP Reference(s) and provide supporting rationale. If Goal 1 does not align with a listed strategy, explain how it aligns to a SP Performance measure. Then, propose a new action strategy in the next field.
Examples: *Goal 1 aligns with SP Action Strategy A1.1.c Increase Native Hawaiian enrollment by 3% per year particularly in regions that are underserved) by ...* *Goal 1 does not align to a listed strategy, but aligns with SP Performance Measure A1.1 (Increase Native Hawaiian enrollment by 3% per year particularly in regions that are underserved) by …*
B1.c. Expand articulation agreements with four-year institutions and provide appropriate advising services for students to benefit from these transfer opportunities
B3.c. Provide the necessary academic and student support services focused on high risk students

Proposed New SP Action Strategy/Strategies (if applicable) – *If Goal 1 does not align with a listed HawCC Action Strategy, indicate above how it aligns with a Performance Measure, and then use the field below to propose a new Action Strategy to be added to the HawCC Strategic Plan. New action strategies should be written in generalized terms so that other Programs and*

Units could also align their goals to them in the future.
1. Seek funding for current technology CAD software and equipment which will enhance graduate's employable skills and strengths.
2. Encourage student diversity in STEM areas.
3. Program development in providing extra academic support in areas students typically experience difficulty.

Alignment of Goal 1 to Academic Master Plan (AMP)

Academic Master Plan: http://hawaii.hawaii.edu/docs/HawCCStrategicPlan_2008-2015_10-29-09.pdf
AMP Appendix: http://hawaii.hawaii.edu/docs/academic-master-plan-appendix-priority-actions.pdf

Indicate which Academic Master Plan (AMP) Action Priorities Goal 1 aligns with and provide supporting reasoning.						
	STEM	**Graduation Remediation Workforce**	**Student Transfer**	**Underserved Populations**	**Green Curricula**	**Program Development**
Example: Establishing an AA Degree in SUBS will increase the number of STEM Degree programs at HawCC and meet the Workforce push for more STEM graduates.	**X**	**X**				**X**

UH System Collaboration (if applicable) • *Include collaboration efforts w/other campuses.* • *Include alignment with the UHCC Initiatives http://uhcc.hawaii.edu/OVPCC/ (listed on the left of John Morton's picture).*
Example: There is dialogue among MauiCC, KauaiCC, and HawaiiCC to establish a common AA Degree in SUBS.
N/A

Calendar of planned activities for Goal 1 -- *In chronological order, briefly describe the procedures/activities planned to achieve Goal 1*

Activity	**When will the activity take place**
Example: *Collaborating with other CCs complete SUBS AA Degree Authorization to Plan (AtP)*	*Example:* *Fall 2015*
Pursue funding	Spring 2014
Faculty training	Fall 2014
Course modifications/syllabi/lesson plans	Spring 2015
Launch in Labs	Fall 2015

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Define Goal (Action Strategy) 2

Curriculum & facilities modifications in green technologies and engineering.

Alignment of Goal 2 to ILO(s)

ILO1
ILO2

Alignment of Goal 2 to Strategic Plan (SP)

http://hawaii.hawaii.edu/docs/HawCCStrategicPlan_2008-2015_10-29-09.pdf

Explain how Goal 2 aligns with an Action Strategy in the Strategic Plan (SP). Include SP Reference(s) and provide supporting rationale. If Goal 2 does not align with a listed strategy, explain how it aligns to a SP Performance measure. Then, propose a new action strategy in the next field.
B3.a. Use enrollment data to focus on strategic recruitment, retention, graduation and transfer in STEM Programs (AEC,AG, AMT, DISL, ET, CULN, IT, NURS, TEAM)
D1.a. By 2015, staff development expenditures will be 1% of total personnel expenditures
E3.b. Utilize green building principles in campus planning and R/M (e.g., Leadership Environmental & Engineering Design is used for “green building” best practice)

Proposed New SP Action Strategy/Strategies (if applicable) – *If Goal 2 does not align with a listed HawCC Action Strategy, indicate above how it aligns with a Performance Measure, and then use the field below to propose a new Action Strategy to be added to the HawCC Strategic Plan. New action strategies should be written in generalized terms so that other Programs and Units could also align their goals to them in the future.*
1. Further develop green curriculum. 2. Develop geomatics curriculum and incorporate 3d printing of topography models. 3. Facilities modifications.

Alignment of Goal 2 to Academic Master Plan (AMP)

Academic Master Plan: http://hawaii.hawaii.edu/docs/HawCCStrategicPlan_2008-2015_10-29-09.pdf
AMP Appendix: http://hawaii.hawaii.edu/docs/academic-master-plan-appendix-priority-actions.pdf

Indicate which Academic Master Plan (AMP) Action Priorities Goal 2 aligns with and provide supporting reasoning.						
	STEM	**Graduation Remediation Workforce**	**Student Transfer**	**Underserved Populations**	**Green Curricula**	**Program Development**
Curriculum & facilities modifications in green technologies and engineering.	**X**					**X**

UH System Collaboration (if applicable) – • *Include collaboration efforts w/other campuses.* • *Include alignment with the UHCC Initiatives http://uhcc.hawaii.edu/OVPCC/ (listed on the left of John Morton's picture).*
UHH

Calendar of planned activities for Goal 2 -- *In chronological order, briefly describe the procedures/activities planned to achieve Goal 2*

Activity	When will the activity take place
Finalize experimental courses for engineering.	Fall 2013
Propose experimental courses for admin approval, develop course modifications for sustainability and pursue advanced 3d printing training.	Spring 2014
Begin engineering course upgrades, propose modifications in sustainability.	Fall 2014
Begin sustainable course and 3d printing curricular upgrades.	Spring 2015

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Define Goal (Action Strategy) 3

Alignment of Goal 3 to ILO(s)

Alignment of Goal 3 to Strategic Plan (SP)

http://hawaii.hawaii.edu/docs/HawCCStrategicPlan_2008-2015_10-29-09.pdf

Explain how Goal 3 aligns with an Action Strategy in the Strategic Plan (SP). Include SP Reference(s) and provide supporting rationale. If Goal 3 does not align with a listed strategy, explain how it aligns to a SP Performance measure. Then, propose a new action strategy in the next field.

Proposed New SP Action Strategy/Strategies (if applicable) – *If Goal 3 does not align with a listed HawCC Action Strategy, indicate above how it aligns with a Performance Measure, and then use the field below to propose a new Action Strategy to be added to the HawCC Strategic Plan. New action strategies should be written in generalized terms so that other Programs and Units could also align their goals to them in the future.*

Alignment of Goal 3 to Academic Master Plan (AMP)

Academic Master Plan: http://hawaii.hawaii.edu/docs/HawCCStrategicPlan_2008-2015_10-29-09.pdf
AMP Appendix: http://hawaii.hawaii.edu/docs/academic-master-plan-appendix-priority-actions.pdf

Indicate which Academic Master Plan (AMP) Action Priorities Goal 3 aligns with and provide supporting reasoning.						
	STEM	**Graduation Remediation Workforce**	**Student Transfer**	**Underserved Populations**	**Green Curricula**	**Program Development**

UH System Collaboration (if applicable) – • *Include collaboration efforts w/other campuses.* • *Include alignment with the UHCC Initiatives http://uhcc.hawaii.edu/OVPCC/ (listed on the left of John Morton's picture).*

Calendar of planned activities for Goal 3 - In chronological order, briefly describe the procedures/activities planned to achieve Goal 3

Activity	**When will the activity take place**

Part V: Resource Implications

A. Cost Item 1

Description	Type ● Personnel ● Facilities ● Equipment ● Health/Safety ● Others (Define)	Estimated Cost
Software and hardware	Equipment	$67,000

Alignment of Cost Item 1 to Strategic Plan (SP)

Explain how Cost Item 1 aligns with the Strategic Plan (SP). Include SP Reference(s) and provide supporting rationale
Example: Cost Item 1 aligns with SP A1.1 (Increase Native Hawaiian enrollment by 3% per year particularly in regions that are underserved.) by ...

Alignment of Cost Item 1 to Academic Master Plan (AMP)

Explain how Cost Item 1 aligns with the Academic Master Plan (AMP) Action Priorities.
Example: Cost Item 1 aligns with Action Priority STEM because an instructor is necessary to develop the program.
B3.a. Use enrollment data to focus on strategic recruitment, retention, graduation and transfer in STEM Programs (AEC,AG, AMT, DISL, ET, CULN, IT, NURS, TEAM)
B3.d. Provide in-class tutoring options for courses with low success rates
D1.a. By 2015, staff development expenditures will be 1% of total personnel expenditures

Alignment of Cost Item 1 to Strength(s)

Explain how Cost Item 1 aligns with program Strength (From Part II. Section C). Address and provide supporting rationale. If there's no alignment, write "No Alignment."
Example: No Alignment
None

Alignment of Cost Item 1 to Weaknesses(s)

Explain how Cost Item 1 aligns with Weakness (From Part II. Section C). Address and provide supporting rationale. If there's no alignment, write "No Alignment."
W1. Old CAD software, and utilization of Civil software not common by local industry standard.

A priority of the AEC program is to remain as current as possible technologically in order to develop the skills and abilities for the students to remain competitive in the field or when transferring to another campus with higher academic goals. The current situation with AEC's software is a major weakness in our program which can no longer be ignored. New software indicates higher powered hardware.

The CAD labs are running AutoCAD 2008. To keep up with our rigorous course work, students accomplish their drawing assignments in the CAD lab, at Hale Kea, and at home. Outside of the institution, students have personal access only to the latest 2014 (soon to be 2015) AutoCAD Suite = Student Version. Older versions are obsolete and no longer available. Students struggle through the difficulty, frustration and inconvenience of converting to the old version back in the classroom daily. We are 6 (soon to be 7) versions behind the times. To a student entering from high school, our technology is back in the day when s/he was in 'elementary' school. This is AEC's first priority to keep up with fast changing technology in the Labs and retain qualified faculty through update training.

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B. Cost Item 2

Description	Type ● Personnel ● Facilities ● Equipment ● Health/Safety ● Others (Define)	Estimated Cost
Green Workroom	Facility	$20,000

Alignment of Cost Item 2 to Strategic Plan (SP)

Explain how Cost Item 2 aligns with the Strategic Plan (SP). Include SP Reference(s) and provide supporting rationale
B1.a. Use enrollment data to focus on strategic recruitment, retention, graduation and transfer
D2. Increase the number and diversity of programs offered to or in underserved regions by increasing the number and types of programs by at least one program every two years that can be completed through distance learning technologies.
E3.b. Utilize green building principles in campus planning and R/M (e.g., Leadership Environmental & Engineering Design is used for " green building" best practices)

Alignment of Cost Item 2 to Academic Master Plan (AMP)

Explain how Cost Item 2 aligns with the Academic Master Plan (AMP) Action Priorities.
4.3 Develop multiple levels of certification/training in Green Building Technology

Alignment of Cost Item 2 to Strength(s)

Explain how Cost Item 2 aligns with program Strength (From Part II. Section C). Address and provide supporting rationale. If there's no alignment, write "No Alignment."
None

Alignment of Cost Item 2 to Weaknesses(s)

Explain how Cost Item 2 aligns with Weakness (From Part II. Section C). Address and provide supporting rationale. If there's no alignment, write "No Alignment."
The W2 weakness is an under-utilized space in the AEC designated area which AEC would like to transformed into a green workroom for students. This will strengthen the existing green curriculum in AEC 126, and provide the opportunity to further infuse sustainability concepts and understanding within other courses. This would become a place for energy device demos, green product displays/information/samples and contain project workspaces for individual and team assignments. This hands-on exposure will inspire students to consider possible new occupations in the green industry. Displays in this room would also be educational for outside visitors such as high school students, and function as a positive recruitment feature, etc.

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C. Cost Item 3

Description	**Type** ● Personnel ● Facilities ● Equipment ● Health/Safety ● Others (Define)	**Estimated Cost**
The W2 weakness is an under-utilized space in the AEC designated area which AEC would like to transformed into a green workroom for students. This will strengthen the existing green curriculum in AEC 126, and provide the opportunity to further infuse sustainability concepts and understanding within other courses. This would become a place for energy device demos, green product displays/information/samples and contain project workspaces for individual and team assignments. This hands-on exposure will inspire students to consider possible new occupations in the green industry. Displays in this room would also be educational for outside visitors such as high school students, and function as a positive recruitment feature, etc.	The W2 weakness is an under-utilized space in the AEC designated area which AEC would like to transformed into a green workroom for students. This will strengthen the existing green curriculum in AEC 126, and provide the opportunity to further infuse sustainability concepts and understanding within other courses. This would become a place for energy device demos, green product displays/information/ samples and contain project workspaces for individual and	The W2 weakness is an under-utilized space in the AEC designated area which AEC would like to transformed into a green workroom for students. This will strengthen the existing green curriculum in AEC 126, and provide the opportunity to further infuse sustainability concepts and understanding within other courses. This would become a place for

	team assignments. This hands-on exposure will inspire students to consider possible new occupations in the green industry. Displays in this room would also be educational for outside visitors such as high school students, and function as a positive recruitment feature, etc.	energy device demos, green product displays/information/samples and contain project workspaces for individual and team assignments. This hands-on exposure will inspire students to consider possible new occupations in the green industry. Displays in this room would also be educational for outside visitors such as high school students, and function as a positive recruitment feature, etc.

Alignment of Cost Item 3 to Strategic Plan (SP)

Explain how Cost Item 3 aligns with the Strategic Plan (SP). Include SP Reference(s) and provide supporting rationale
B3.a. Use enrollment data to focus on strategic recruitment, retention, graduation and transfer in STEM Programs (AEC,AG, AMT, DISL, ET, CULN, IT, NURS, TEAM)
B3.b. Develop an articulation agreement in a STEM field
B3.d. Provide in-class tutoring options for courses with low success rates

Alignment of Cost Item 3 to Academic Master Plan (AMP)

Explain how Cost Item 3 aligns with the Academic Master Plan (AMP) Action Priorities.
4.1 Add Engineering courses to the AEC curriculum, attracting students, meeting workforce needs and providing additional options for students interested in earning a baccalaureate degree

4.2 Create stackable certificates leading to a higher degree, provides students more options, allowing them to progress in manageable steps. (The AEC program)
4.4 Create an AS degree as an additional pathway, providing an opportunity for a transfer level degree targeting students seeking a bachelor degree

Alignment of Cost Item 3 to Strength(s)

Explain how Cost Item 3 aligns with program Strength (From Part II. Section C). Address and provide supporting rationale. If there's no alignment, write "No Alignment."
None

Alignment of Cost Item 3 to Weaknesses(s)

Explain how Cost Item 3 aligns with Weakness (From Part II. Section C). Address and provide supporting rationale. If there's no alignment, write "No Alignment."
W3. Lack of GIS/GPS already in the curriculum and robotic equipment and software. To increase exposure and training in a STEM area. Also providing steps to support student success in transferring to a baccalaureate program in pursuit of an engineering profession. Strengthening weakness W3, would assist in accomplishing AEC's academic master plan goals to increase engineering coursework, meet workforce needs, and provide higher degree pathways.

Part VI: Justification for Program Existence

Write a brief statement describing the value of this Program to the College. Is your Program sustainable? If so, briefly state why. If not, briefly state why the College should continue to keep your Program open.
(Sources include Industry Validation, ARPD Data Validation, Trends and Other Factors.)