2008 Annual Report of Program Data Coversheet

College: Hawai'i Community College

Program: Architectural, Engineering and CAD Technologies (AEC)

Check All Credentials Offered	AA	AS	ATS	AAS	CA	CC	COM	ASC	
				X					

College Mission Statement (or provide link)
Hawai'i Community College promotes student learning by embracing our unique Hawai'i Island culture and inspiring growth in the spirit of "E'Imi Pono."

Program Mission Statement (or provide link)
Program Mission Statement and brief description of the program including a listing of program level student learning outcomes. The Architectural, Engineering & CAD Technologies (AEC) program prepares students for employment with architectural firms, contractors, engineers, and surveyors, or county, state and federal agencies. Students develop skills that enable them to complete job responsibilities that could include making schematic sketches, construction working drawings of buildings, shop drawings, construction material sales type tasks, blueprint interpretation and other field related duties, to assisting a surveying crew. Entry requirements for the program include placement into Math 22 and placement into Eng 20R or ESL 9 or prior completion of both. The program also provides Blueprint Reading courses required by students majoring in the following programs: Carpentry, Electrical Installation & Maintenance Technology, and Machine Welding & Industrial Mechanics Technologies. The program in collaboration with the construction academy has articulated its specialized blueprint courses (BLPR 30F - Blueprint Reading for Carpenters; BLPR 22 - Blueprint Reading and Drafting; AEC 80 - Basic Drafting; BLPR 30D - Blueprint Reading for Machine Trades) with the DOE course TIN 5310—Drafting Technology. . The AEC program level student learning outcomes are as follows: 1. Demonstrates entry-level skills for accuracy in drawing geometric shapes, axonometric pictorials, orthographic projections, and identifying the relationship of features to demonstrate visualization proficiency. 2. Identify or describe the characteristics and uses of construction materials, building products and systems, and research these materials for use based on a prescribed design project requirement. 3. Use with reasonable competence our two-dimensional and three-dimensional

CAD programs to create architectural and engineering drawing documents for use in the Construction Technology Capstone DHHL Model Home Project and other projects that are assigned.

4. Use with reasonable competence our surveying hand tools/equipment, Theodolite, total station, and GPS Garmins safely on campus and at the DHHL Model Home Project site.

5. Formulate, design, revise, and construct projects of knowledge and comprehension based on design criteria requiring recall of past courses/experiences and be able to defend, explain, and discuss designs.

6. Demonstrate computation, communication, critical thinking, research and problem solving skill as well as and appreciation for the diversity of cultures, community, and the environment.

7. Take pride in the quality of projects and performance, possess responsible work ethics and standards, and model attitudes of professionalism and appearance.

OVERALL PROGRAM HEALTH (Check one)		
Healthy	*Cautionary*	*Unhealthy*
	X	

Part II. Analysis of the Program (strengths and weaknesses in terms of demand, efficiency, and effectiveness based on an analysis of the data)
Strengths and weaknesses in terms of demand, efficiency, and effectiveness based on an analysis of data.

The Program's overall health is Cautionary.

The figure in Demand indicator 2 seems askew. Based on other resources (SOC EMSI) the number of jobs for Hawai`i County is listed at 10. The AEC program remains in direct contact with the community within Hawai`i County and employers have indicated there is and has been absolutely more than one (1) position available in the community, during the 2007 period, and continues to have positions available. We are in close communication with Hawai`i County's Human Resources Department, and with regard to one of the many agencies, specifically the Surveys and Engineering of the Public Works Department. Due to the difficulty to fill unfilled positions (of which our students are eligible), the County would like to develop an internship program with AEC. Recently the County was trying to fill 2 positions in Hilo, 2 in Kona and 1 in Ka`u. Helco has also pursued a similar arrangement with AEC where in the Spring of 2008, they hired 3 of our students for an internship program specifically developed because of their unfilled drafting tech positions. We also have been receiving calls from private employers for surveying and CAD drafting positions. Although the number reflected in Demand Indicator 2 is low, AEC is monitoring the situation and cannot but question the reliance of the data elements.

Demand indicators 3-9 are strong and improved from the previous year. The low number of New/Replacement Positions caused the Demand Health for this program to be Unhealthy since there are a disproportionate number of majors to jobs.

The Efficiency of the program is Healthy. All indicators have improved over the year. The 108.05% fill rate is an extremely healthy indicator. The ratio of majors to FTE BOR Appointed Faculty is also healthy at 31. Over the three year period, there were no classes with less than ten students. Cost per student semester hours have been declining indicating the program continues to operate efficiently.

The Effectiveness of the program is Unhealthy. Again, the low number of New/Replacement Positions created a disproportionate ratio of degrees earned to positions. In addition, the number of degrees earned compared to the number of majors was at an unhealthy level of 11.29%. Persistence fall to spring decreased from prior year. Perkins indicators, except for 1P2 Vocational Achievement and 3P1 Placement Employment/Education are above the state standards.

Significant Program Actions (new certificates, stop-out; gain/loss of positions, results of prior year's action plan)
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(new certificates, stop-out; gain/loss of positions, results of prior year's action plan)

Accomplishments of prior year's action plan items:
1. Developed student learning outcomes for all program courses:

COURSE	SLOS*						
	SLO 1	SLO 2	SLO 3	SLO 4	SLO 5	SLO 6	SLO 7
AEC 80	X	X					X
AEC 110B			X				X
AEC 110C			X		X		X
AEC 115					X	X	X
AEC 117				X		X	X
AEC 118		X	X				X
AEC 120		X			X	X	X
AEC 123		X	X		X		X
AEC 127				X		X	X
AEC 130	X	X	X		X	X	X
AEC 131					X	X	X
AEC 133		X	X		X	X	X
AEC 134			X	X			X
AEC 135			X		X	X	X
AEC 137				X		X	X
AEC 138					X	X	X
AEC 140		X	X		X	X	X
AEC 141B					X	X	X
AEC 142		X	X		X	X	X

AEC 144				X			X	X
AEC 147					X		X	X

*See page 1 for description of SLOs.

2. Continued involvement with Construction Academy.

3. Continued to utilize Forest Team's Nikon Total Station with data collector this Fall 2008 semester and will continue to share in the use of this equipment in the Spring 2009 semester.

4. Continued documenting assessment strategies of student learning outcomes.

5. Completed upgrading of equipment in the 2nd year lab.

6. Acquired Revit software in Spring 2008 and initial instructor training (basic) took occurred in the Summer of 2008.

7. Began researching equivalent software to Civil 3D.

8. Acquired and installed AutoCAD 2008 during the Summer of 2008. Implemented use of this upgraded software in the 2nd year curriculum in the Fall of 2008.

9. Reassessed involvement in the student AutoCAD Users Group specifically for AutoCAD 2008 with a new projection timeline of Spring of 2009.

10. Freeware became available for continued use of Sketch-Up.

11. An Elmo was purchased in the Spring of 2008, and is used in class lectures and presentations

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Part III. Action Plan
1. Continue involvement in the Construction Academy endeavors.
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2. Continue to request the use of Forest Team's Nikon Total Station with data collector until AEC obtains own equipment.

3. Continue documenting assessment strategies of student learning outcomes.

4. Pursue Civil3D or other civil program software, to include faculty training.

5. Pursue intermediate faculty training on Revit.

6. Continue utilizing freeware SketchUp software with upgrades.

7. Continue to reassess current curriculum: adjustment of credits, course pre-requisites, etc.

8. Assess the potential use and acquisition of a 3D printer.

CHART 1: PHYSICAL FACILITIES ASSIGNED TO PROGRAM

List Bldng/Rm/Lab/Shop	Describe Renovation/Repair Needed	Estimated Cost
Building 380/30 Level I CAD Lab	-increase square footage to provide efficient working space for student workstations -increase square footage to provide lecture area -replace light fixtures -improve electrical -improve internet cable layout -install fixed projection system -repair exhaust fan in printing room -improve lighting in printing room -provide student project display space -upgrade air-conditioning system *	$ 508,000.00
Building 380/31 Faculty Office	-divide into 2 separate offices -install separate phone lines -replace all light fixtures -upgrade electrical outlets -improve internet cable layout -upgrade air-conditioning system	$ 90,000.00
Building 380/32 Level II Lecture Room	-install window coverings -install fixed projection system -provide additional internet lines -provide student project display space -upgrade air conditioning system *	$58,000.00
Building 380/33 Level II CAD Lab	-increase square footage for more workstations -improve electrical -improve internet cable layout -upgrade air-conditioning system *	$ 300,000.00

* in progress

CHART 1A: INVENTORY LIST: EQUIPMENT & CONTROLLED PROPERTY

Program Assigned Equipment (E) and Controlled Property (CP) (List in order of chronological depreciation date)	Category: E =item value > than $5K CP =item value $1K - $5K	Expected Depreciation Date	Estimated Replacement Cost
(1989) Theodolite Surveying Instrument	E	2007	$25,000.00
(2008) Dell Desk top system-faculty I Optiplex740-21fsm	CP	2011	$2,000.00
(2008) Dell Desk top system-faculty II Optiplex740-21fsm	CP	2011	$2,000.00
(2008) Dell Desk top system-Lecturer III Optiplex745-21fsm	CP	2011	$2,000.00
(2001) Dell Desk top system classrm. 30 Optiplex270-18fsm	E	2008	$80,000.00
(2008) Dell Desk top System, classrm. 33 Optiplex740&745-18fsm	E	2011	$40,000.00
(2002) 3 - Garmin V GPS Units	CP	2008	$1,600.00
(2007) Dell Lat d520 Laptop II-faculty	CP	2012	$2,000.00
(2008) Dell Lat d830 Laptop III-faculty	CP	2012	$2,000.00
(2002) Toshiba Laptop I system – Lecture	CP	2008	$2,000.00
(2008)Software CAD Programs	E	2011	$40,000.00
(1999) HP DesignJet 755cm ink jet plotter	E	2009	$15,500.00
(2005) HP DesignJet 1055cm ink jet plotter	E	2012	$18,000.00

(2007) 2 –Projectors	CP	2012	$2,000.00
(2007) 2 – HP 5200 Plotter	CP	2012	$3,000.00
(2007) 2 – HP 5550 Plotter	CP	2012	$4,000.00
(2007) Xerox 6024 Wide Format Engineering Copier	E	2012	$20,000.00
(2007) Sharp AR-M162 11x17 Engineering Copier	CP	2011	$4,000.00
(2008) Elmo projector	CP	2010	$2,000.00

CHART 2: PERSONNEL

Instructors
1. Gayle Cho, Professor
2. Clyde Kojiro, Professor
3. Lecturer
4. Lecturer
5. Lecturer

CHART 3: BUDGET REQUESTS

Describe Item	Biennium Request – 1st Yr.	Biennium Request – 2nd Yr.	Reallocation of Funds and/or Positions	X Amt. Line Item
Nikon Total Station w/ Data Collector	X.			$25,000.00

Computer hardware & Software upgrades & training		X		$100,000.00
Trimble GPS Surveying Equipment		X		$50,000.00
Furnishings		X		$20,000.00
Spec Z510 3D printer	X			$35,000.00

Part IV. Resource Implications (physical, human, financial)