

**ANNUAL PROGRAM REVIEW  
SUSTAINABLE CONSTRUCTION TECHNOLOGY  
2011 - 2012**

**October 16, 2012**

**ANALYSIS**

**I. Quantitative Indicators**

**II. Out come and Goal Achievement A.**

**Program Learning Outcomes**

- > PLO 1: Use appropriate materials, tools equipment and procedures to carry out tasks performed on construction projects according to safety and industry standards.
- > PLO 2: Use math skills to solve problems related to construction plans and processes.
- > PLO 3: Introducing the requirements of the Green Building certification program. To include, waste stream management, locally developed energy sources, renewable sustainable materials and resources.
- > PLO 4: Gain knowledge of how to implement the sustainable living practices of the host Hawaiian culture.

**Map of Program Learning Outcomes by Course**

	PLO1	PLO 2	PLO 3	PLO 4
AEC80	X	X	X	X
BLPR22	X	X	X	X
CARP 20	X	X	X	X
CARP 41	X	X	X	X
CARP 43	X	X	X	X
CARP 44	X	X	X	X
ELEC20	X	X	X	X
ELEC 23	X	X	X	X
ENRG 101	X	X	X	X
ENRG 102	X	X	X	X



ENRG 103	X	X	X	X
ENRG 193V	X	X	X	X
IEDB 20	X	X	X	X
MAIN 20	X	X	X	X
MAIN 30	X	X	X	X
MAIN 40	X	X	X	X
MAIN 50	X	X	X	X
MAIN 60	X	X	X	X
MAIN 70	X	X	X	X

### Assessment Plan

To be assessed each year of the program review cycle. Identify the learning outcomes by number.

### Timetable

	F2012	S2013	F2013	S2014	F2014	S2015	F2015	S2016
<b>PLO 1</b>				ELEC 23				MAIN 40
<b>PLO 2</b>	MAIN 50				MAIN 30			
<b>PLO 3</b>		ENRG 103				ENRG 102		
<b>PLO 4</b>			CARP 43				CARP 41	

## B. Analysis of Student Outcome and Goal Achievement •

### Which PLO is being assessed?

- > PLO 4: Gain knowledge of how to implement the sustainable living practices of the host Hawaiian culture. This assessment was during fall 2011; evidence was collected from ENRG 101.
- > PLO 1: Use appropriate materials, tools equipment and procedures to carry out tasks performed on construction projects according to safety and industry standards. This assessment was during spring 2012; evidence was collected from CARP 20.

**Describe the assessment tools or methods used to analyze the outcome.**

- ENRG 101/PLO 4: Students were assessed on written tests and research and presentation of their findings, implementing sustainable living.

**Student Learning Outcomes:**

- > Identify sustainable resources in the state of Hawaii
  - > Identify sustainability issues and implications
  - > Apply critical thinking skills to evaluate information, and make decisions
- 
- CARP 20/PLO 1: Students were assessed on exams and demonstrated hands-on lab exercises.
- > Identify health and safety issues of carpentry work
  - > Safe practices using hand and power tools
  - > Identifying the correct tools for the project according to the industry standards
  - > Maintain common residential and commercial carpentry equipment

**Describe criteria for success**

- > Base on the evidence for ENRG 101 students; 80% of students met, two to eight outcomes, mostly stated in terms of measurable knowledge, skills, attitudes or behaviors relevant to field.  
The students were able to search the internet and present their findings, as a PowerPoint presentation, or verbally.
- > Students in MAIN 20 at least 75% of student's met two to eight outcomes, mostly stated in terms of

measurable knowledge, skills, attitudes or behaviors relevant to field.

The students showed good understanding in handling the hand and power tools efficiently.

- **Describe summative evidence.**

### ENRG 101

Report Elements	Weak	Acceptable	Exemplary
<b>Program learning outcomes</b> Faculty expectation of their graduates		Two to eight outcomes mostly stated in terms of measurable knowledge, skills, attitudes or behaviors relevant to field.	
<b>Assessment methods*</b> How faculty will collect evidence to determine how well students meet their expectations			Two or more appropriate measure were described and implemented for each learning outcome. Or measures meet external accreditation requirements
<b>Criteria for success</b> The level of performance that meets program standards		Desired level of achievement was not clearly described for all outcomes.	
<b>Findings</b> The degree to which students met the program standard		Provided evidence of some analysis of student's learning beyond overall findings.	
<b>Action Plan</b> The changes made to address issues identified in the findings and the efficacy of the changes.		Gave specific and logical actions taken for most of the assessed outcomes.	

\* Using final course grades is not an appropriate assessment.

## CARP20

Report Elements	Weak	Acceptable	Exemplary
<b>Program learning outcomes</b> Faculty expectation of their graduates		Two to eight outcomes mostly stated in terms of measurable knowledge, skills, attitudes or behaviors relevant to field.	
<b>Assessment methods*</b> How faculty will collect evidence to determine how well students meet their expectations			Two or more appropriate measure were described and implemented for each learning outcome. Or measures meet external accreditation requirements
<b>Criteria for success</b> The level of performance that meets program standards		Desired level of achievement was not clearly described for all outcomes.	
<b>Findings</b> The degree to which students met the program standard		Provided evidence of some analysis of student's learning beyond overall findings.	
<b>Action Plan</b> The changes made to address issues identified in the findings and the efficacy of the changes.		Gave specific and logical actions taken for most of the assessed outcomes.	

\*Using final course grades is not an appropriate assessment method.

- **What have you discovered about student learning?**
  - > The students come from many various background, cultures, and age differences. As the results for some students, they did well on exams but, performed better in the lab exercises. The lab exercises emphasize the student's skills and allow the student to demonstrate understanding and compliance with safety rules. Older students were able to share their life experience working, and younger students shared on how to use the media technology.

### C. Action Plan

- **Discuss the changes made in the curriculum or pedagogy to improve student learning and the results of those changes.**
  - > ENRG 101 allows the student to apply the knowledge gained with more student hands-on engagement projects and greater community involvement.
  - > CARP 20 is working fairly well, but to improve the program, the need for more tools and materials are appreciated. Instructors are finding ways to reuse materials multiple times for different classes.
  
- **Discuss the results of changes that have been made based on earlier assessment.**
  - > Continue to improve students job skills to meet community needs
  - > Continue to search the latest tools and materials in the industry
  - > Continue to evaluate curriculum and revise the program as necessary to meet industry standards.
  
- **Describe how your assessment supports your current program goals and/or influence future planning.**
  - > Assessment of the PLCs supports the program goals of providing students with meaningful applied skills that they can use in the workforce. The assessments evaluate students learning of the skills and knowledge being taught and allow instructors to adjust teaching methods to improve.
  
- **List your programs strengths and weaknesses.**
  - > Due to the weakness in the economy students have turned to college to broaden their education. This

has cause a high ratio of students per job available. Many students of SCT are facing academic and remedial challenges. Industry does not require a degree to be employed. We've noted that several of the students who were eligible for certificates have not received them because they are unaware of the application process. Instructors and counselors have begun to track students for classes needed to complete for their graduation requirements and encouraging them to increase their grade point average.

- > The SCT program has slightly gone down in average class size. In order to keep the focus of the program on teaching the latest sustainable skills, individuals with a wide range of up-to-date technical skills and experience are needed.
- > The SCT Program continues to address the performance in the areas of 1P1 and 2P1, while continuing to address the students' need in the area of academic and remedial challenges. A high number of students enrolled in the program are not completing the general education credits, or are repeating in these classes, making these students unsuccessful in meeting their graduating requirements.
- > The program changes have grown out of a desire to reflect the change in construction throughout the nation, as students in SCT are facing academic and remedial challenges.

Overall Program Health: Cautionary  
Majors Included: SUSC

Demand Indicators		Program Year			Demand Health Call
		09-10	10-11	11-12	
1	New & Replacement Positions (State)	19	24	92	
2	*New & Replacement Positions (County Prorated)	3	3		
3	*Number of Majors	102	106	107	Unhealthy
4	SSH Program Majors in Program Classes	1,134	1,114	924	
5	SSH Non-Majors in Program Classes	590	555	594	

SSH In All Program Classes	1,724	1,669	1,518
FTE Enrollment In Program Classes	57	56	51
Total Number of Classes Taught	37	34	33

Efficiency Indicators		Program Year			Efficiency Health Call
		09-10	10-11	11-12	
9	Average Class Size	19.5	21.1	19.5	Healthy
10	*Fill Rate	100%	100%	95%	
11	FTE BOR Appointed Faculty	9	9	7	
12	*Majors to FTE BOR Appointed Faculty	11.3	11.8	15.2	
13	Majors to Analytic FTE Faculty	31.9	35.8	37.8	
13a	Analytic FTE Faculty	3.2	3.0	2.8	
14	Overall Program Budget Allocation	\$151,164	\$145,444	Not Yet Reported	
	General Fund Allocation	\$136,144	\$141,841	Not Yet Reported	
	Special/Federal Budget Allocation	\$15,000	\$0	Not Yet Reported	
14a			\$0	Not Yet Reported	
14b			\$87	Not Yet Reported	
14c	Tuition and Fees	\$0	2		
15	Cost per SSH	\$88			
16	Number of Low-Enrolled (<10) Classes	3			

Effectiveness Indicators		Program Year			2020 d 21
		09-10	10-11	11-12	2021
17	Successful Completion (Equivalent C or Higher)	75%	80%	81%	22
18	Withdrawals (Grade = W)	29	32	21	22a
19	*Persistence (Fall to Spring)	65%	72%	71%	
20	*Unduplicated Degrees/Certificates Awarded	48	43	44	
20a	Degrees Awarded	30	0	6	
20b	Certificates of Achievement Awarded	0	84	4	
20c	Advanced Professional Certificates Awarded	70	Not Reported	0	
	Other Certificates Awarded	Not	1	139	
	External Licensing Exams Passed		0	N/A	
	Transfers to UH 4-yr		1	0	
	Transfers with credential from program			0	



out credential from

**Effectiveness**  
**Health Call**

Cautionary

program

<b>Distance Education: Completely On-line Classes</b>		<b>Program Year</b>		
		<b>09-10</b>	<b>10-11</b>	<b>11-12</b>
23	Number of Distance Education Classes Taught	0	1	0
24	Enrollment Distance Education Classes	0	19	0
25	Fill Rate	0%	100%	0%
26	Successful Completion (Equivalent C or Higher)	0%	68%	0%
27	Withdrawals (Grade = W)	0	1	0
28	Persistence (Fall to Spring Not Limited to Distance Education)	0%	91%	

<b>Perkins IV Core Indicators</b>				
	<b>2010-2011</b>	<b>owdi</b>	<b>Mcuiai</b>	<b>iviei</b>
29	1P1 Technical Skills Attainment	90.10	85.19	Not Met
30	2P1 Completion	45.00	33.33	Not Met
31	3P1 Student Retention or Transfer	56.00	73.85	Met
32	4P1 Student Placement	51.00	0.00	Not Met
33	5P1 Nontraditional Participation	16.25	9.02	Not Met
34	5P2 Nontraditional Completion	15.15	5.71	Not Met

Last Updated: August 6th, 2012

### III. Engaged Community

- **Discuss evidence of community engagement**
  - > The students have work with Rising Sun Solar Electric Company on a MECO base yard project installing PV panels on the roof.
  - > The students have visited Grand Wailea Hotel, to see the daily operation of the engineering department.
  - > The students have visited Maui Oil Express Car Wash, to see the operation of recycled water.
- **Provide evidence that results of student learning has been discussed with Advisory Board**
  - > Currently we have a new Advisory Board since April, 2012. Discussion on the results of student learning hasn't come forward to the Advisory Board, at this time. Members are working on meeting during the fall semester.

## **Recognize and Support Best Practices**

- **Discuss how program uses innovative teaching techniques, innovative use of technology, or incorporates "best practices" into pedagogy.**
  - > An instructor uses the overhead projector, Elmo, and the internet to present their teaching methods.
  - > PowerPoint for daily instructions and demonstrations.
  - > Demonstrate how to use the latest tools in the industry.

## **Planning and Policy Considerations**

- **Curriculum changes align with community needs, college mission and goals.**
  - > The Sustainable Construction Technology (SCT) program prepares students in general building construction and maintenance of large and small structures, whether commercial, industrial, or residential. It also allows students to explore different trades prior to selecting a specialization.
- **The program mission statement reflects the college's mission statement in the following areas:**
  - > Students are trained in the latest technology and services that meet the changing educational and training needs of the community.
  - > Courses allow students to develop the occupational skills, academic competencies, and increased awareness they will need to become positive and confident contributing members of their community.

## **Budgetary Consideration and Impact**

- **Capital, operation and supply budget is based upon evidence of assessment.**
  - > At this time the Sustainable Construction Technology program does not anticipate additional resources to reach assessment or program goals. Need to evaluate the types of machinery, tools, and materials needed for the betterment of the program.