

# **HAWAI‘I COMMUNITY COLLEGE PROGRAM ANNUAL REVIEW (APR)**

## **TEAM Tropical Ecosystem and Agroforestry Management**

**Date : February 28, 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>TEAM:</p> <p>Students learn to actively manage Hawai‘i’s native forest ecosystems, grow native plants, establish agroforestry operations, use Global Positioning Systems (GPS), and Geographic Information Systems (GIS). Internships give students on-the-job training with potential employers.</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: <a href="http://hawaii.hawaii.edu/files/program-unit-review/">http://hawaii.hawaii.edu/files/program-unit-review/</a></p>	
<p>Year</p>	<p>2017</p>
<p>URL</p>	<p><a href="http://hawaii.hawaii.edu/files/program-unit-review/docs/2017_team_comprehensive_program_review.pdf">http://hawaii.hawaii.edu/files/program-unit-review/docs/2017_team_comprehensive_program_review.pdf</a></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 commended the program for coordinating 24 internships and for finding outside funding. The CERC requested more discussion on the significance of the proposed “Culturally Based Resource Management” certificate. The CERC encouraged the program to highlight their significant achievements such as scholarships, Earth Day and Haw CC Day activities. The CERC recommended clarifying all personnel requests and to include vehicle and equipment maintenance costs to all purchase contracts. The also noted that the program should consider collaborating with the counseling unit to increase student enrollment. They recommended reviewing Math 120 to see how it can meet the LBRT requirement. In summary, the CERC evaluation recommended that the</p> <p>The Cultural Based Resource Management certificate of competence was not approved by the CRC as required courses all need to be listed as electives for the TEAM and HLS major. To do this, requires major program modifications, therefore due to limited clerical support we have not pursued this option. Promotion of the program’s activities and recruitment will hopefully improve as we were awarded USDA funding to hire an APT for approximately 6 months. At the recent USDA Insular Region and Alaska Hawaii Conference in Guam, we learned that USDA funds can cover maintenance costs for equipment. As a result of this, many of our vehicles and tools have been repaired.</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).**

a) If you will be submitting the APR in hard copy, print and staple a copy of the data tables to the submission; the icon to print the data tables is on the upper right side, just above the data tables.

**OR**

b) If you will be submitting the APR in digital form (WORD or PDF), attach a PDF copy of the data tables along with the digital submission; the icon to download the data tables as a PDF is in the upper right of the screen, just above the data tables.

<b>Analyze the program's ARPD data for the review period.</b>	
Describe, discuss, and provide context for the data, including the program's health scores in the following categories:	
Demand	Demand is considered unhealthy due to the low ratio of county jobs related to the program CIP codes and the number of program graduates over the course of a 3 year average. For years 2016 and 2017, the program was assigned to only 1 CIP code which was aligned to only 2 positions with Hawaii County. However, for the year 2018 the program was assigned to 4 CIP codes, which aligned with 8 county jobs. Thus using the average of 4 position over the average graduates per year, our demand was listed as unhealthy. If the 2018 data was used alone, the ratio would have been 1.0 and listed as cautionary.
Efficiency	The program was listed as having Cautionary health for efficiency, which appears to be caused by low average class size. Our fill rate was 40.6% which is a slight decrease from 42.4% last year, and equivalent to the 2016 data. However, the program has a low FTE faculty to Majors ratio which helps to keep the costs down.
Effectiveness	A healthy score was provided for program effectiveness which is primarily due to a satisfactory graduation rate. Successful completion of C or better was 85% and persistence from Fall to Spring semester was fair at 65%. Persistence from Fall to Fall semesters was lower at 37%, which in part reflects those students who find employment while they are still students or transfer to another major.
Overall Health	The overall health score of cautionary is a significant improvement from the unhealthy score in 2017. It is believed that increased recruitment and student advising efforts have played a role as well as the addition of 3 new CIP codes. The demand for well-trained forest technicians on the Island and in the State is one of the prime indicators that we use to assess the program. This year, with 8

	County jobs and 36 State jobs listed, it appears that the program is on track for a healthy program demand score.
Distance Education	N/A
Perkins Core Indicators (if applicable)	This year the TEAM program met the Perkin's Student retention or transfer indicator for 2016-17, which is an improvement from last year's report. The other 5 indicators were met, these are Technical skills attainment, Completion, Placement, Non-traditional participation and Non-traditional completion. This shows that our graduates continue to be well trained and that a high proportion of the students in the Program are of Hawaiian ancestry and/or female.
Performance Funding Indicators (if applicable)	Eighty percent of our program graduates during this reporting period were of Hawaiian ancestry and two of our graduates transferred to UHH. Again, the NOT STEM listing of this program is erroneous and should be corrected as soon as possible! We offer an Associates of SCIENCE degree designed by scientists which has a scientific based curriculum that was approved by the Board of Regents.
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>Demand for well-trained forestry technicians has always been significant on Hawaii Island with the National Park, vast areas of State and privately owned forests. However, it has grown dramatically in the last few years due to several recent impacts of invasive species, disease and public health. Examples of these efforts are removal of Albizia trees, research and control of fungus that causes Rapid Ohia Death (ROD) and the control of rat lung worm disease vectors.</p> <p>In addition to careers related to forest health and native forest conservation, a bio-fuel energy sector is developing whereby forestry technicians will be needed to produce tree seedlings, get them established in large areas and later harvest them and transport to processing area. Likewise, small agroforestry enterprises are developing as is evident with the interest in gluten free products such as breadfruit, high value spices such as vanilla, black pepper and chili pepper, specialty crops such as cocoa, kava, tea, mamaki , turmeric and various oils that can be obtained from agro-forestry systems.</p>

## 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.

- Program modification submitted in 2017 to include alternative math and speech courses and the addition of a special topics class as a program requirement was approved by the CRC.
- Proposal submitted in 2017 to create a Certificate of Completion for Cultural Resource Management was not approved by the CRC as it requires BOR approval.
- Program modification submitted to require CHEM 100 or higher to encourage 4 yr. students to take higher level chemistry.
- GE Designation proposal submitted for GEOG 170 course.
- Supervised 3 student workers. Hired a new greenhouse manger to replace a student worker who graduated.
- Coordinated 9 student internships most of which were funded by Program USDA funds
- Awarded 3 TEAM scholarships using USDA funds
- Purchased a new 12 passenger van with USDA funds to take students to field sites.

### **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.**

One of the most important actions is to increase enrollment by expanding recruitment efforts. In AY 16/17, the program was awarded approximately \$10,000 to hire an APT to work with Junior Forestry clubs to bring them into the HawCC program. So far, these funds have not been used as the anticipated applicant found alternate employment. A new candidate has been selected, and recruitment efforts will begin early in the Spring 19 semester. Another important goal is to retain majors as much as possible until they complete the program. There will always be students that change career paths after one year of college or have life changing experiences during their freshmen and sophomore years which will take them out of the TEAM major. However, our goal is to make the program fit into a good career choice by better articulating with UH Hilo and Manoa and keeping program learning relevant to the changing job market. As for job placement, we also plan to continue working with employers by maintaining the internship program, coordinating with advisory board members and continually working with new partners as they arise.

Specific goals:

Recruitment – 10% increase in the number of majors

Retention – 75% of majors retained (note that this is 6% lower than our previous goal which program faculty feel may have been too ambitious.

Placement or Transfer – 80% of our graduates will either find work in their career or transfer on to a 4-year degree program

## 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:

Recruitment – hire new APT Spring 19 to work with forestry clubs to get them prepared with math and English so that they complete the TEAM program in 2 years. Faculty, APT and students workers visit school career fairs and set up booths at community events

### Action Item 2:

Retention and Transfer

Improve articulation with UHH and UHM by changing course alphas and numbers so that they better align 100 and 200 level courses. Advise 4 yr college bound students to enroll in higher level math, chemistry and physics so that it will help them complete a 2 +2 four year degree

### Action Item 3:

Placement

Work with existing employers such as the USFS, NPS, DLNR, Forest Solutions and Nature Conservancy to expand employment opportunities for graduates. This will be done in advisory meeting and internship program. Work to create new relationships with the bio-fuel and other plantation forestry sectors, including small entrepreneurial enterprises.

## 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.***

**Provide a brief statement about any implications of or challenges due to the program's current operating resources.**

Our program is fortunate to be partially supported by the USDA Alaska Native and Hawaii Native agriculture training and education grant which is also shared with the AG and HLS programs. However, federal funds are not allowed to be used for vehicle or equipment repair and maintenance. Therefore the program relies on the College to help with the occasional repair of vehicles and equipment. Previously, we annually submitted our estimated maintenance and fueling budget to the VC of Administrative affairs, who would then provide us with RTRF funds.

**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.	Fueling of our 3 vehicles runs approximately \$2,000 and maintenance and repairs approximately \$3,000. However, the latter can vary greatly pending use level and wear on parts.
Explain how the item(s) aligns with one or more of the strategic initiatives of <u>2015-2021 Strategic Directions</u> :  <a href="http://hawaii.hawaii.edu/sites/default/files/docs/strategic-plan/hawcc-strategic-directions-2015-2021.pdf">http://hawaii.hawaii.edu/sites/default/files/docs/strategic-plan/hawcc-strategic-directions-2015-2021.pdf</a>	As both TEAM, AG, and HLS use these 3 vehicles (along with many other courses field trips) it is important that they are maintained for student safety and access to field and forest sites.

**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 AY16-17.**

**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**

<b>List all program courses assessed during AY17/18, including Initial and “Closing the Loop” assessments.</b>			
<b>Assessed Course Alpha, No., &amp; Title</b>	<b>Semester assessed</b>	<b>CLOs assessed (CLO#s)</b>	<b>PLO alignment (PLO#s)</b>
AG 245 Silviculture and Tropical Plant Propagation	Spr 18	CLO 1 Learn about seed collection and propagation of native and non-native trees	2
		CLO 2 Understand the ecology and stand dynamics of native and non- native forest communities	1
		CLO 3 Apply silvicultural techniques to native ecosystem restoration	6
		CLO 4 Be able to identify important tropical tree species	5
		CLO 5 Understand the operations of industrial plantation forestry	6
		CLO 6 Demonstrate competence with tree mensuration and forest health assessment	5
AG 245L	Spr 18	CLO 1 Learn about seed collection and propagation of native and non-native trees	2,5
		CLO 2 Understand the ecology and stand dynamics of native and non- native forest communities	1

		CLO 3 Apply silvicultural techniques to native ecosystem restoration	2,6
		CLO 4 Be able to identify important tropical tree species	5
		CLO 5 Understand the operations of industrial plantation forestry	6
		CLO 6 Demonstrate competence with tree mensuration and forest health assessment	5
<b>“Closing the Loop” Assessed Course Alpha, No., &amp; Title</b>	<b>Semester assessed</b>	<b>CLOs assessed (CLO#s)</b>	<b>PLO alignment (PLO#s)</b>
GEOG 170 Forest Ecosystem Surveying, Inventory and Monitoring.	Spr 18	CLO 1 Learn and understand about forest parameters such as area, slope, structure, light penetration and species composition.	1
		CLO 2 Be able to use basic field surveying equipment such as a hand held compass, transect tape, clinometer, densitometer, theodolite and total station.	5
		CLO 3 Understand how to set up transects and plots for forest surveys and monitoring.	2
		CLO 4 Know the dominant plant species found in different forest communities and be able to recognize them at various age classes.	5
GEOG 170L Forest Ecosystem Surveying, Inventory and Monitoring Lab		CLO 1 Learn and understand about forest parameters such as area, slope, structure and light penetration and species composition	5

		CLO 2 Be able to use basic field surveying equipment such as hand held compass, transect tape, clinometer, densitometer, thodelite and total station.	5
		CLO 3 Understand how to set up transects and plots for forest surveying and monitoring	1,2
		CLO 4 Know the dominant plant species in different forest communities and be able to recognize them at various age classes	5
		CLO 5 Be able to make vegetation maps	1,2

### Assessment Strategies

**For each course assessed in AY17/18 listed above, provide a brief description of the assessment strategy, including:**

- a description of the type of student work or activity assessed (e.g., research paper, lab report, hula performance, etc.);
- a description of how student artefacts were selected for assessment (e.g., the assessment included summative assignments from all students in the course, OR 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 assessment rubric/scoring guide and the criteria/categories and standards used in the assessment.

**Course Alpha/#: AG 245:** The assessment tool is a final exam that specifically asks the students to identify and discuss the criteria in each of the 6 course learning objectives. One hundred percent of the exams were included in the artifact sample. The rubric or scoring guide ranks each CLO artifact as either exceeded expectations = score of > 90%, met expectations = 60-89% or did not meet expectations = < 60% correct.

**Course Alpha/#: AG 245 L:** The assessment tool is a series of lab assignments that evaluates the 6 course learning objectives. One hundred percent of the assignments were included in the artifact sample. The rubric or scoring guide ranks each CLO artifact as either exceeded expectations = score of > 90%, met expectations = 60-89% or did not meet expectations = < 60% correct.

**Course Alpha/#: GEOG 170:** The assessment is based on the final exam that is designed to evaluate how well the students met the course learning outcomes. All of the exams were used for this assessment. The rubric or scoring guide, ranks the artifact for each CLO as either exceeded expectations = score of > 90%, met expectations = 60-89% or did not meet expectations = < 60% correct.

**Course Alpha/#: GEOG 170 L:** The assessment is based on the final field practicum that is designed to see how well each student is able to characterize a forest ecosystem using the appropriate sampling methods with assigned tools and correctly identify plant species in the area. All of the field practicums were included in the artifact sample. The rubric or scoring guide, ranks the artifact for each CLO as either exceeded expectations = score of > 90%, met expectations = 60-89% or did not meet expectations = < 60% correct.

**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.”*

<b>Assessed Course Alpha, No., &amp; Title</b>	<b>Assessed CLO#</b>	<b>Standard for Success</b>	<b>% of Students Expected to Meet Standard</b>
GEOG 170	1,2,3,4	70%	87%
GEOG 170L	1,2,3,4,5	70%	83%
AG 245	1,2,3,4,5,6	70%	85 %
AG 245L	1,2,3,4,5,6	70%	62 %

## 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/#:** AG 245 – There were 7 students in this course and a final exam was used to assess all 6 CLOs. The resulted indicated that overall, 4 of the students exceeded expectations for the CLO’s and 3 of them met expectations. This indicates that all of the course learning objectives are being met or exceeded by students. This high level of achievement is likely helped by having smaller classes with hands on learning emphasis.

**Course Alpha/#:** AG 245L – There were 8 students in the lab and 3 assignments were used to evaluate the 6 CLOs. 3 of the students exceeded expectations and 2 met expectation. However 3 only partially meet the expectations due to incompleteness of significant portions of the evaluation assignment. This may have been due to extra-curricular influences and perhaps poor time management by the students.

**Course Alpha/#:** GEOG 170 - Closing the loop

In 2018, there were 5 students in the class (2 had earlier dropped out during the semester) All 5 student final exams were used for the assessments. Overall, 2 students exceeded all 4 CLOs and 3 students met the CLOs. This showed that the learning outcomes are being met for this course during the semester. Compared with the last time this course was assessed in 2014, where 2 out of 6 students (30% ) of the class did not meet expectations for PLO 5 to “recognize, collect and interpret field data (which relate to CLOs 1,2 and 4) . Since then, we have been focusing on the mathematics need to interpret field data and it appears to working in this case.

**Course Alpha/#:** GEOG 170L - Closing the loop

In 2018, there were 5 students in the class (2 had earlier dropped out during the semester, and one did not take the practicum) All 5 student practicums were used for the assessments. Overall, 3 students exceeded with all 4 CLOs and 2 students met the CLOs. Compared with the lab practicum in 2014, where the results were similar with 2 exceeding expectations and 3 meeting expectations. As has been shown in other TEAM courses, students tend to do better with field practicums than final exams.

## Other Comments

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

The program has run into a backlog of course assessments due to changes made to the original schedule and confusion as to which courses need to be assessed during which semester. We are now getting closer on track, but will need to assess GEOG 180/Land AG 130 in the Fall 2019.

**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.**

Graduate survey letters and envelopes prepared to send out to graduates. Working to initiate internship supervisor evaluation forms as well to gauge status of internship experience. E-Café and at the end of the semester feedback for student course evaluation used.

**Next Steps – ASSESSMENT ACTION PLAN for AY17-18**

**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 to program or course curriculum or instructional strategies, or changes in program or course assessment practices.

**This year we intend to assess AG 130 and GEOG 180 and GEOG 180L**

## 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:

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General Funds	= \$	_____
Federal Funds	= \$	_____
Other Funds	= \$	_____
Tuition and Fees	= \$	_____

### External Data\*

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If your program utilizes external licensures, enter:

Number sitting for an exam \_\_\_\_\_  
Number passed \_\_\_\_\_

\*This section applies to NURS only.