

Agriculture



2019 COMPREHENSIVE REPORT OF PROGRAM DATA AY16-17, AY17-18 & AY18-19



UNIVERSITY of HAWAII®
HAWAII
COMMUNITY COLLEGE

2019 Hawai'i Community College COMPREHENSIVE Program Review (CPR)

Program: Agriculture

1. Program Description

Description of the program from the catalog.

This program prepares students for employment in government service, agribusiness, horticulture, livestock, flowers and foliage, landscape, macadamia nuts, papaya, and coffee industries.

2. Analysis of the Program

For the three-year review period, discuss the program's strengths and weaknesses in terms of demand, efficiency and effectiveness based on an analysis of ARPD Quantitative Indicators. CTE programs must include an analysis of Perkins Core indicators met and unmet.

Include Significant Program Actions (new certificates, stop outs, gain/loss of positions) and results of the program's three previous consecutive annual action plans.

ARPD Quantitative Indicators

Demand Indicator 2017: Unhealthy, 2018: Cautionary, 2019: Healthy

Demand Indicator is in an uptrend. However, it still does not reflect the many entrepreneurial opportunities and for smaller private companies. In fact, after attending several recent agricultural conferences, the attendees spoke directly to our HawCC Ag students about the numerous opportunities in the agriculture industry. Currently, a private anthurium farm would like to hire our Ag students as interns which could turn into a permanent position. The current job opportunities are excellent due to the low unemployment for the County and State of Hawaii.

Efficiency Indicator 2017: Healthy, 2018: Healthy, 2019: Cautionary

Efficiency Indicator for 2019 was cautionary. The fill rate was 115.5%. We allow students to enroll over the class limit due to the high agriculture interest. Agriculture interest seem to be on the rise. Our available seats increased from 14 to 16 in the Fall 2019 semester. We should see this indicator return to Healthy and remain Healthy for many years.

Effectiveness Indicator 2017: Cautionary, 2018: Healthy, 2019: Cautionary

Effectiveness Indicator for 2019 was cautionary. This was due to students discontinuing the program for various personal reasons. Although we were given a Cautionary Call, it will be impossible to increase our Unduplicated Degrees/Certificates Awarded. We do not have the physical space to grow the program and increase the capacity 5% every year. We believe that if a program cannot grow by 5% every year, it should be rated on a set ratio of Unduplicated Degrees/Certificates Awarded to Average Class Size.

Overall program health call 2017: Cautionary, 2018: Healthy, 2019: Healthy

Perkins Core Indicators

1P1 2017: Not Met, 2018: Not Met, 2019: Met

Technical Skills Attainment. This was not met the past two years due to 2 or more students dropping out of the program due to personal reasons. One or more students may or may not drop out or could not meet the cumulative GPA of 2.0 from year to year. This indicator results would vary from year to year, depending how

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motivated each class tries to accomplish the skills taught. However, based on the assessments over the past several years, the students that continue the program, 80% meet or exceed the standard. We encourage students to utilize campus resources to reach their goals. We accept all students who shows some interest in agriculture.

2P1 2017: Not Met, 2018: Met, 2019: Not Met

Completion. This indicator will be similar to 1P1. Results will vary from year to year, depending how motivated each class tries to complete their degree/certificate. We encourage students to utilize campus resources to complete their degree/certificate. We accept all students who shows some interest in agriculture.

3P1 2017: Not Met, 2018: Met, 2019: Not Met

Student Retention or Transfer. This indicator will vary from year to year depending on how many students drop out for various reasons. Although we average 1 student per year, most students have limited interest in transferring to UHH or other 4-year program.

4P1 2017: Not Met, 2018: Not Met, 2019: Not Met

Student Placement. This has not been met for the past three years. There are a few variables which are not taken into consideration in this rubric. The first is that some of our students start their own business and the data will not pick this up. The second is that this is also a transfer program and we had 3 transfers to UH-4yr over the past three years. Third, this data does count the students that drop out of the class. We expect to always not meet this indicator based on how this indicator is calculated. We are looking into an employment tracking system to track our graduates.

5P1 2017: Met, 2018: Met, 2019: Met

Nontraditional Participation. We met this indicator the past three years. We expect this indicator to be strong in the future. There seems to be a growing interest in this field. We will continue to encourage nontraditional participation by promoting career/job fairs, be involved with high school, intermediate and elementary schools and other community events.

5P2 2017 Not Met, 2018: Not Met, 2019: Met

Nontraditional Completion. This indicator was not met in 2017 and 2018. However, the indicator was met in 2019. We expect this indicator to trend up in the future. There seems to be a growing interest in this field. We will continue to encourage nontraditional completion by promoting career/job fairs, be involved with high school, intermediate and elementary schools and other community events. Also, we will highly encourage students to utilize campus resources to complete their degrees/certificates.

3. Program Learning Outcomes (PLOs)

- a) List of the Program Learning Outcomes (PLOs) with their alignment to the College's Institutional Learning Outcomes (ILOs).
- b) List of all courses that have been assessed during the three-year review period and the PLOs to which those courses' Course Learning Outcomes (CLOs) are aligned.
- c) Discussion of the program's PLO assessment results based on course CLO assessments.
- d) Discussion of the program's strengths and challenges in helping students meet their program learning outcomes, and changes that have been made as a result of assessments.

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The Agriculture Program recognizes and embraces the uniqueness of Hawai'i island from both a cultural and environmental perspective. Sustainable production practices presented through the program draw from methods practiced throughout Polynesia as well as those practiced by other cultures that are relevant and appropriate. Natural environmental and ecosystem characteristics throughout the island are explored as they relate to agriculture.

The program strives for excellence and is actively engaged in assessment, reflection and self-improvement. These characteristics are instilled in students of the program as well.

Finally, the program is proud of the diversity within its classroom. It far exceeds Perkins nontraditional student completion indicators. There is a great diversity of ethnicities within the program and ages of students have ranged for 17-58 years of age.

The graphs below from Campus Labs illustrate our students' achievement of the PLOs in the past three years. The color bar shows that the large majority of our students are meeting or exceeding the PLOs, shown in green.

PLO #	Program Learning Outcomes	Align to ILO #
1	Plan and manage projects and cultivate horticultural crops using legal; sustainable; safe; and ecologically, biologically, and technologically sound practices.	2,3,4,5,6
2	Design gardens that demonstrate the aesthetic principles of unity, repetition, balance, color, and texture congruent with the customers' desires.	1,2,3,4,5,6
3	Operate and maintain tools and equipment.	2,3,6
4	Set-up and manage a business enterprise.	2,3,4,5,6
5	Interact with customers and co-workers in ways that effectively support the work to be accomplished.	1,3,6

Courses that have been assessed during the 3-year period.

Assessed Course	Semester Assessed	CLO Assessed	PLO Alignment
Ag 200	F2016	CLO 1 CLO 2 CLO 3	PLO 1,3 PLO 1,2 PLO 1,4
Ag 54B	S2016	CLO 1 CLO 2 CLO 4	PLO1,4 PLO 1,3 PLO 5
Ag 33	F2017	CLO 1 CLO 2 CLO 3 CLO 4	PLO 3 PLO 3 PLO 1,2 PLO 5

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Ag 54A	F2017	CLO 1 CLO 2 CLO 3 CLO 4	PLO 1,4 PLO 3 PLO 1 PLO 5
Ag 46	S2018	CLO 1 CLO 2 CLO 3	PLO 1,3 PLO 1,2 PLO 1,4
Ag 54B	S2018	CLO 1 CLO 2 CLO 3 CLO 4	PLO 1,4 PLO 1,3 PLO 1 PLO 5
Ag 122	F2018	CLO 1 CLO 2 CLO 3	PLO 1 PLO 1 PLO 1
Ag 200	F2018	CLO 1 CLO 2 CLO 3	PLO 1 PLO 1 PLO 1,3,5
Ag 230	F2018	CLO 1 CLO 2 CLO 3	PLO 1,4,5 PLO 4 PLO 4
Ag 141	S2019	CLO 1 CLO 2 CLO 3	PLO 1 PLO 1 PLO 3
Ag 250	S2019	CLO 1 CLO 2 CLO 3	PLO 1,2,3,4 PLO 1,2,3 PLO 1,3
Ag 250L	S2019	CLO 1 CLO 2 CLO 3	PLO 1,2,3, PLO 1,2,3 PLO 1,3
Ag 260	S2019	CLO 1 CLO 2 CLO 3	PLO 1,2,5 PLO 1,2,3,5 PLO 4,5


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Program: Agriculture

PLO Results AY 16-17

JV Jed

Agriculture


 Academic Year 2016-17

Term: Overview [Add Outcome](#)

AGR_PLO1

AGR_PLO1

AGR PLO1: Plan and manage projects and cultivate horticultural crops using legal; sustainable; safe; and ecologically, biologically, and technological...



AGR_PLO2

AGR_PLO2

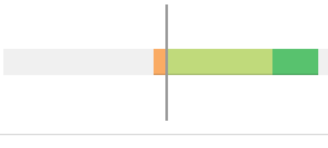
AGR PLO2: Design gardens and demonstrate the aesthetic principles of unity, repetition, balance, color, and texture congruent with the customers' desi...

No Results

AGR_PLO3

AGR_PLO3

AGR PLO3: Operate and maintain tools and equipment.



AGR_PLO4

AGR_PLO4

AGR PLO4: Set-up and manage a business enterprise.

Not Selected

AGR_PLO5

AGR_PLO5

AGR PLO5: Interact with customers and co-workers in ways that effectively support the work to be accomplished.

Not Selected


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
Program: Agriculture

PLO Results AY 17-18

JV Jed

Agriculture


 Academic Year 2017-18

Term: Overview [Add Outcome](#) 

AGR_PLO1

AGR_PLO1


AGR PLO1: Plan and manage projects and cultivate horticultural crops using legal; sustainable; safe; and ecologically, biologically, and technological...



AGR_PLO2

AGR_PLO2

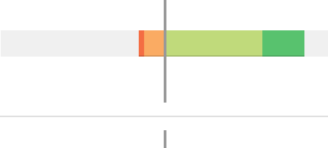
AGR PLO2: Design gardens that demonstrate the aesthetic principles of unity, repetition, balance, color, and texture congruent with the customers' des...



AGR_PLO3

AGR_PLO3

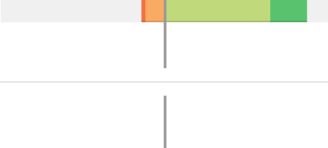
AGR PLO3: Operate and maintain tools and equipment.



AGR_PLO4

AGR_PLO4


AGR PLO4: Set-up and manage a business enterprise.




AGR_PLO5

AGR_PLO5

AGR PLO5: Interact with customers and co-workers in ways that effectively support the work to be accomplished.



AGR_PLO6



AGR_PLO7








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PLO Results AY 18-19

JV Jed

Agriculture

 Academic Year 2018-19

Term: Overview [Add Outcome](#)

AGR_PLO1

AGR_PLO1

"AGR PLO1: Plan and manage projects and cultivate horticultural crops using legal; sustainable; safe; and ecologically, biologically, and technologica..."

AGR_PLO2

AGR_PLO2

"AGR PLO2: Design gardens that demonstrate the aesthetic principles of unity, repetition, balance, color, and texture congruent with the customers' de..."

AGR_PLO3

AGR_PLO3

"AGR PLO3: Operate and maintain tools and equipment."

AGR_PLO4

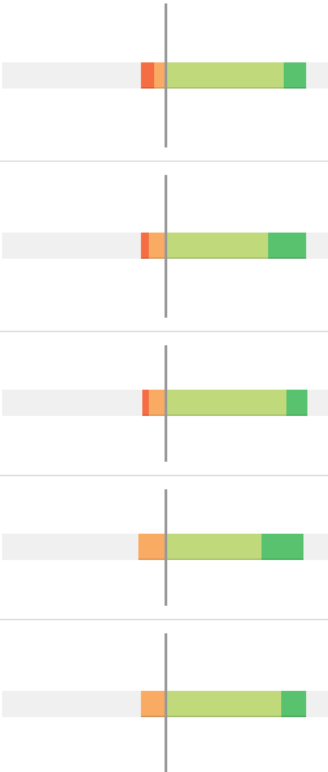
AGR_PLO4

"AGR PLO4: Set-up and manage a business enterprise."

AGR_PLO5

AGR_PLO5

"AGR PLO5: Interact with customers and co-workers in ways that effectively support the work to be accomplished."



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13 classes were assessed during this 3-year period. In almost every instance, 80% or more of the students achieved 75% or better on all CLO assessments. The students seem to understand the technical information presented. Except for S2016 Ag 54B Soft Skill assessment, for which only 70% of the students met or exceeded the standard. During the follow up assessment (S2018 Ag 54B CTL), it was impressed upon the students to have good attendance and participation. It seems to have worked. The scores improved to 88% of the students met or exceeded the standard. We continually emphasize the importance of soft skills in every class, although it may not be part of the CLOs. This is confirmed by discussions with the Advisory Council.

4. Action Plan

Provide a detailed action plan to improve student learning and success over the next three years. Discuss how the action items within the plan support the College's Mission with specific reference to the Strategic Directions plan: [HawCC Strategic Directions Plan 2015-2021.pdf](#)

In addition to the overall action plan for the program, include specific action plans for the program's Performance Indicators and any Perkins Core Indicator for which the program did not meet the performance level in the final year of the three-year review period (AY18-19).

The Hawai'i Community College Agriculture Program is seeking to secure its own farm lab, independent of the UH Hilo College of Agriculture Forestry and Natural Resource Management (CAFNRM). With the Manono Redevelopment Plan moving forward, we are also seeking to relocate our classrooms to the farm lab to eliminate costly commuting time between the classrooms and farm lab. If the Hawai'i CC Agriculture Program is able to secure its own land to develop a modern and efficient farm lab, we would double our student capacity and quadruple our growing area. This would lead to increased student enrollment and ultimately enhanced student learning. Another reason is we would like to fulfill part of our mission statement, by having livestock as part of the curriculum. Under the current agreement with UHH CAFNRM, we are not able to have livestock on the farm. Livestock has not been part of the curriculum for a number of years but with a new farm lab, we anticipate adding a Small Animal Production cohort to the AG Program.

On September 2019, Chancellor Rachel Solemsaas officially signed the Memorandum Of Agreement (MOA) with the University of Hawaii Manoa College of Tropical Agriculture and Human Resources (UHCTAHR) to develop the HawCC Ag Farm Lab on 18 acres at the Waiakea Research Station. The planning and building stage for the farm lab will be a 3-5 year process if there are no major setbacks. We hope to have state of the art classrooms, greenhouses, restroom, a food processing area, equipment and other necessary components with "green sustainability" as the theme for all of the items that are included for the farm lab. Having a new facility will bring a renewed excitement to student learning. We will be able to recruit effectively, keep students motivated and increase our retention. Our goal is to have a public friendly facility and facilitate tours for grades K-12 and the general public.

Hawai'i Graduation Initiative Action Goals 1, 2, and 3 align with HGI Action Strategy 1 by engaging Hawai'i Island K-12 students, parents, and public and private schools early and often to promote and prepare for college. Action Goal 1, 2 and 3 align with HGI Action Strategy 2 by reducing gaps in college completion for Native Hawaiians and low-income and underrepresented groups. Action Goal 1, 2, and 3 align with HGI

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Action Strategy 3 by engaging systematically with community-based groups to inform program offerings and curricula.

Hawai'i Innovation Initiative Action Goal 1 aligns with HI2 Action Strategy 3 addressing Health and Wellness and Sustainable Agriculture by working closely with employers to increase the qualified and skilled workforce base.

21st Century Facilities (21CF) – Modern Teaching and Learning Environments Action Goal 1 aligns with 21CF Action Strategy 2 by continuing to explore and implement cost-savings strategies and sustainable practices.

Action Item #1:

Initiate planning for farm structures such as a certified kitchen, a produce processing unit and a building to house these items, along with classrooms at the Farm Lab. Plans could be made available within a year. As the plans are put into motion during AY 2020-2021 the facilities will be established and this will help improve student learning. There would be less commute time and more teaching time. Hands-on learning would be greatly increased due to the efficiency of the layout of the farm.

The Ag program's new facilities will help improve student learning and attainment of the PLO's by supporting the whole program's curriculum, especially in the program's re-focus into Farm to Table, Sustainability, and Landscaping. Farm to Table involves not only the Agriculture program, but also the Culinary Arts program.

Benchmarks/Timeline: Develop project with legislators and administration, organize ATE collaborators and begin site-specific planning in 2019-2020. Completion of the project in 2023-2024. This project directly facilitates PLOs 1-5 for the agriculture program. Greenhouse and storage would be built first. Waterline, powerline or generator would be installed next. Classrooms would be built next, fully powered by Photovoltaic with filtered catchment water. We would like to be fully off-grid. Drawn in power and water would act as a backup for classrooms. Next would be a mobile certified kitchen and processing area. Any other facilities would be built last. Additionally, the College as a whole benefits from the physical results of this project as well as the inherent benefits of increased collaboration.

Action Item #2:

The hiring of a Farm Manager is a vital part of the program expansion of 18 acres. Unlike most other programs, the Ag program deals with live crops. These live crops are student projects that must be maintained (watered, fertilized, etc.). The instructor should be spending his non-teaching time developing the program, not maintaining the farm. With the assistance of a farm manager, the instructor can develop and fine-tune the program/curriculum so that the students can learn and attain PLOs 1,2,3,4,5 efficiently. This will enhance student learning by exposing students to a well thought out and planned curriculum provided by the instructor. Also, this would give the current APT more time for student support and other important things to enhance the agriculture program.

With the additional space, we would also like to add the animal component to HawCC Ag program. The program has been without a livestock curriculum for many years. We would like to have an animal instructor and an additional APT to run the livestock program. We would like to see chickens, pigs, rabbits, bees, fish and other types of animals on the farm. As the animal program grows, we would like to add a Veterinarian technician class as part of the program. This would have additional interest to the program.

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Action Item#3:

Initial funds would be used to build the new facilities and infrastructure. However, additional funds for equipment to operate and maintain the farm will need to be included in the initial planning. We will have sole ownership of the new HawCC Ag Farm and will have to maintain all 18 acres that are utilized. A comprehensive equipment evaluation and need will have to be done in AY 2019-2020.

The Ag program's additional equipment and upgrades will improve student learning and attainment of the PLO's by supporting the curriculum, especially in the program's re-focus into Farm to Table, Sustainability, and Landscaping. Currently the equipment we are using is inefficient. In two years, the equipment will not be able to keep up with the goals of the Ag program. The equipment is also being worked overtime due to being repurposed (doing jobs for which they are not designed), which results in higher maintenance and higher costs. The equipment increase and upgrade will improve student learning by allowing students to perform lab exercises more efficiently allowing for more time learning. It will also decrease maintenance costs in the future, which can be reinvested into the program. The equipment will also be displayed and demonstrated at career days, fairs or excursions to the farm. The equipment request would directly support PLO 1 and 3.

5. Resource Implications & Budget Asks

(physical, human, financial)

Provide a detailed discussion of the program's current resources, resource gaps and requests for new or re-allocated resources. Provide detailed documentation for each resource request including projected costs and timeline for procurement to meet the program's needs. Resource requests must align to and support the action plan above.

Attach additional documentation and evidence as necessary to clearly support each request.

CTE programs must provide evidence of industry trends to support each request, including Advisory Council minutes or documentation of discussion(s) with industry experts.

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Resource Category	Resource the program needs to operate effectively	Resource the program already has	What is the program resource gap
Farm Relocation	<ol style="list-style-type: none"> 1. Infrastructure and security 2. (4)-Greenhouses 3. Certified Kitchen 4. Produce processing unit 5. Secured Storage area 6. Water catchment 7. Equipment covered parking 8. (4)-Classrooms 	We currently do not own any space or facilities, except a classroom and office at the Manono Street address.	HawCC to request \$7-11 million to complete project.
Personal	<ol style="list-style-type: none"> 1. Farm Manger 2. Horticulture Professor 3. Animal Professor 4. (2)-APT's 	<ol style="list-style-type: none"> 1. Horticulture Professor 2. APT 	<ol style="list-style-type: none"> 1. Farm Manager (\$50K) 2. Animal Professor (\$75K) 3. APT (\$45K each)
Farm Equipment	<ol style="list-style-type: none"> 1. Excavator 2. Skidsteer 3. (2)-O-turn mower 4. (2)-UTV 5. Chipper 6. 55 hp tractor w/jaw bucket 7. Flail mower 	<ol style="list-style-type: none"> 25 hp tractor 35 hp tractor 	<ol style="list-style-type: none"> 1. 55hp tractor w/jaw bucket (\$50K) 2. Flail mower (\$6K) 3. Excavator (\$55K) 4. Skidsteer (\$50K) 5. (2)-O-turn mower (\$20K ea.) 6. (2)-UTV (\$28K ea.) 7. Chipper (\$32K)